

SANU KAINIKARA

THE ART OF AIR POWER

SUN TZU REVISITED



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For

Tanmai Sharma and Aninda Sen

In appreciation of your
unconditional love and understanding
over the years



About the Author

Dr Sanu Kainikara is the Air Power Strategist at the Air Power Development Centre of the Royal Australian Air Force. He is also a Visiting Fellow at the University of New South Wales. He has published numerous papers on national security, military strategy and air power in a number of professional journals. He has also published six books.

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He has two Bachelors degrees, a Masters degree in Defence and Strategic Studies from the University of Madras and his PhD in International Politics was awarded by the University of Adelaide.

Books by the Same Author

Papers on Air Power

Pathways to Victory

Red Air: Politics in Russian Air Power

Australian Security in the Asian Century

A Fresh Look at Air Power Doctrine

Friends in High Places: Air Power in Irregular Warfare (Editor)

Seven Perennial Challenges to Air Power

Foreword

The basic logic of strategy is universal; just as the basic nature of war has always remained the same. The traditional view that there is a radical difference between the oriental and occidental approaches to strategy is perhaps more a reflection that the conduct of war and its characteristics may vary with the socio-cultural and even ethnic make up of the contestants. At their core, all fundamental, winning strategies will have a common base, irrespective of the combatants. This is clearly demonstrated by the commonality of thought and understanding of war displayed by Sun Tzu, Thucydides, Machiavelli, Clausewitz and Jomini in their individual works, separated by centuries and continents. All of them subscribed to the concept of avoiding war as far as possible and, when war is inevitable, to the need to ensure swift victory to avoid long-drawn conflicts of attrition. Their concepts were also in unison in proclaiming that the support of the populace was a primary requirement for the successful prosecution of any war.

While the nature of war remains a constant at the foundational level, the logic and method of conducting war are evolutionary, based more on the understanding of its character, experience of the nation and its military, and the intuition of its commanders. Under these circumstances it is of the utmost importance for professional soldiers, sailors and airmen to study the underlying factors that affect the nature of war in order to clearly understand the context and variables of contemporary conflict. The original classic that is available to us for analysing the strategies of war is Sun Tzu's *The Art of War*.

Sun Tzu was an extraordinary thinker, warrior and statesman. He looked at war as a psychological contest with the military force playing a critical but limited role. Sun Tzu's ideal was to win without fighting, the vision of victory by 'causing the enemy to submit without battle' being fundamental to the entire treatise. However, he also elaborated on the military methods to win the war in the shortest period of time. As a strategist Sun Tzu looked far beyond the immediate battlefield, identifying the psychology or the belief system of the adversary as the ultimate centre of gravity. In a methodology that is reminiscent of contemporary requirements to resolve crisis by creating the right effects, Sun Tzu's goal was to break the politico-military and socio-economic cohesion of the adversary. The use of force was never considered a first option. Sun Tzu suggested targeting this intangible centre of gravity—the enemy's will and the soldiers' morale—through a strategy that amplifies actions that create psychological rather than physical effects.

Sun Tzu also laid great emphasis on the integrity and capabilities of the commanders and other officers in the force. This requirement is long-standing and equally applicable today. The professional mastery of the leaders of a force is still a war-winning factor in all military forces. This truth will not change.

This book explores the contemporary nuances of Sun Tzu's eternal classic and distils its contents to align with the framework of contemporary air power application. From this, two factors become apparent. First, the strategic principles that Sun Tzu listed are still valid, even though it was initially articulated around 250 BC and second, the present-day veracity of these axioms substantiate that the nature of war has indeed remained unchanged, a fact that I iterated earlier. It is a testimony to the integrity of Dr Kainikara's research and analysis, his clear understanding of the interaction between national security and military strategy, as well as his in-depth knowledge of air power theory, doctrine and strategy that he has been able to extrapolate the entire text of Sun Tzu's *The Art of War* to contemporary philosophical level air power strategy.

I would like to congratulate Sanu for this excellent work. I know that *The Art of Air Power: Sun Tzu Revisited* will not only be a distinct contribution to the greater understanding of war and air power but will also be viewed as a ground-breaking analysis of the ancient warrior's text. I am confident that this book will be a sought after text for the study of air power and commend it to you.

Air Marshal Mark Binskin, AM
Chief of Air Force
Royal Australian Air Force
Canberra
March 2010

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Author's Preface

Military thought—the output of the most complex activity that humankind undertakes, war, and the most intellectual of all pursuits, analytical contemplation—has been the preoccupation of a large number of thinkers and strategists throughout history. The science of strategic thinking has today become an area of study that is avidly pursued not only by people directly involved in military activities, but also by academics and armchair warriors. This development perhaps reflects the vitality of democratic traditions that provide a definitive and influential place for the general population to articulate their views on strategic developments in the nation. However, historically the more erudite and purposeful writings on military strategic thought have normally been the product of military men with a penchant for futuristic and abstract thinking. Sun Tzu's *The Art of War*, written 2300 years ago by a warrior-statesman-strategist, is perhaps the best example of such writing.

Sun Tzu's ancient text is a serious treatise on human conflict, dealing with the physical as well as the cognitive level. It contains universal truths that transcend time in terms of their applicability to conflict. In fact, Sun Tzu's book goes beyond warfare and has been adapted to the world of business and finance, becoming a best-selling and often quoted publication. In the development of military strategy and doctrine, the lessons of history are referred to much more than in any other area of study. Military strategy at the highest level does not change through revolutionary processes, but is enduring thought that only gets refined with time while following the same thread throughout. Since there is a certain sense of timelessness in it, the classics in this field are perhaps the most quoted and alluded to in the writing of contemporary strategy. Therefore, it should not come as a surprise to anyone that *The Art of War* is accepted as a treatise that must be studied by any serious military strategist.

When Sun Tzu conceived the book of military maxims, the concept of human flight was nonexistent. Therefore, relating the maxims to the contemporary application of air power is itself a great leap of faith. The attempt in this book has been to keep the interpretation of Sun Tzu's original book to the strategic level of discussion, going down to the operational level only when unavoidable. Even in those few instances, the explanations have been raised to the strategic-operational level and not allowed to continue meandering in the lower levels of warfighting. There are certain parts of the original *The Art of War* that are detailed explanations of the conduct of war at the operational-tactical level, when analysed in physical terms and within the boundaries of Sun Tzu's time and context. However, they can also be explained in strategic terms when analysed as an indirect situation or within the cognitive domain. This book endeavours to elucidate not only the connection between Sun Tzu's axioms and the accepted tenets that bind air power, but also to superimpose those axioms on the basic principles that govern the strategic application of air power in contemporary conflicts.

Some of Sun Tzu's verses are succinct and open to a number of interpretations, as is evident in the number of different translations and versions of the book that are available. In this book the interpretations have been kept within a broad guideline that allows for sufficient flexibility while keeping the text focused on the cardinal theme of the analysis. Some explanations might seem a trifle abrupt, especially the contemporary analysis part, but this has been essential because of the necessity to ensure that the understanding of the flow of the original text is not lost in translation.

This book is a labour of love. It has been in preparation for more than six years—in the mind of the author for slightly more than four years and in its writing for two. (Considering the fact that the original was written more than 2000 years ago, perhaps that is not surprising.) In preparing the text of the verses of Sun Tzu, I have made use of the maximum number of translations of the original book that I could locate and combined the different styles and tones to one that is hopefully unique in its own way. A degree of calculated risk is involved in any enterprise that attempts to combine age-old wisdom with modern concepts and this is no exception. It is, therefore, important for me to state clearly that the translation and interpretation, as provided in this book, is my individual thought process and any vagaries in the ideas being projected are purely mine. There can not even be tangential inference that any faulty interpretation could have been influenced by any one of the books to which I have referred in the preparation of this manuscript.

The reader must also be cautioned here that the interpretations provided in this book, while they have been logically arrived at, are not the only ones possible for any of Sun Tzu's maxims. This is particularly true of the air power interpretations. I state this because I could myself provide a different interpretation to what is in the book in a number of places. However, I am confident that the explanations given in the text and the connections drawn to strategic air power are strong enough to stand scrutiny and are perhaps the better of the options available to understand the nuances. Sun Tzu's *The Art of War* is a nuanced work of universal truths and air power is complex in its multifaceted dimensions, to say the least. I must admit that the exercise in combining the two has been greatly invigorating, in a very personal manner, to my understanding of military strategy and air power. It has led to my quest for further answers to some of the perennial questions that spring to mind at the end of any arduous study. The study of air power is never complete!

The primary reason for my fascination with Sun Tzu's teachings is that whenever I have had, within my reasoning, an 'original' strategic thought, I have found in subsequent research that Sun Tzu had already provided a succinct conceptual basis for and an explanation of the same thought 2300 years ago in his monumental work, *The Art of War*. I am certain that many past military thinkers would have faced the same situation with regard to their 'original' ideas, and I am sure that many future strategists will also go through the same exploratory process.

This book is presented with the ardent hope that it will excite the reader sufficiently to look deeper into national security, military strategy and the status of air power as an element of national power.

The objective value of a broad survey of war is not limited to the research for new and true doctrine. If a broad survey is an essential foundation for any theory of war, it is equally necessary for the ordinary military student who seeks to develop his own outlook and judgement. Otherwise his knowledge of war will be like an inverted pyramid balanced precariously on a slender apex.

B. H. Liddell Hart
Strategy, 1954

Sanu Kainikara
Canberra
March 2010

Acknowledgments

A book of this magnitude, both in scope and size, cannot be written without the aid and support from a great many people. I consider myself extremely lucky that I have friends and colleagues who willingly give me their time and indulgence whenever I have felt the need to ‘think through’ some of the more obscure and at times contentious ideas that come to my mind every so often. It is impossible to name all these friends individually, but I am sure that each one will understand when I say a collective thank you and bow in deep-felt gratitude.

It will be remiss on my part if I do not mention two of my friends individually.

First, WGCDR Bob Richardson. Bob has normally been the first person to read most of the pieces that I write for publication and this book has been no exception. He has read through every chapter of the book in its first-take and, with his sharp intellect, provided me with incisive comments and suggestions that have gone a long way in making the book reach its final version here. While I studied Sun Tzu for a long period of time before embarking on this venture, I suspect Bob had to do a crash course on *The Art of War* in order to make sense of my often meandering explanations and essentially pull me back to operate within the bounds of the ancient treatise and contemporary air power concepts and strategy. Bob has contributed enormously to keeping the text focused at the strategic level and if there are any shortcomings, they are entirely of my own making—I might add, despite his best efforts! Bob, thank you from deep in my heart.

Second, WGCDR Keith Brent. KB is our resident ‘guru’ on style and an editor par excellence. There are no deviations from the nuances of style and form in the text that gets past his eagle eye. I am personally grateful that he painstakingly went through the manuscript so that it is now devoid of all the style and typing errors that I had made in writing the draft.

I also gratefully acknowledge GPCAPT Tony Forestier for wholeheartedly supporting the concept of the book and his further discussions and helpful pointers, GPCAPT Phil Edwards for his valuable comments that refined the Introduction and Conclusion, GPCAPT Rick Keir for doing a final ‘sanity’ check, Graeme Smith for the patient and professional manner in which he put together the layout and effortlessly brought together the disparate odds and ends involved in publishing a book and Sandra Di Guglielmo for being a constant source of support and encouragement throughout the writing of this book.

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No creative work is possible without a certain sense of tranquillity in the deeper recesses of the mind. For me this comes from within the exuberant love and conscious care that

my family lavishes on me in abundance, which I acknowledge. This book would not have seen the light of day without my wife Manju's ready acceptance of the idiosyncrasies and rapid mood swings of a person obsessed with the writing of a book and perhaps more importantly the sustenance that she provided during vacant and introspective periods. My two daughters Priya and Priyanka, give me immense joy through their pragmatic, 'feet firmly on the ground', attitude and bring to me a sense of accomplishment whenever I finish some piece of writing. My two sons-in-law, to whom this book is dedicated, are the best 'gentlemen' one could hope to associate with in any given circumstance. My three grandchildren, Ishaan, Urvi and Ahaana have individually and collectively provided me many hours of bliss and a clear understanding of the delights of being a grandfather. My family—the source of all my inspiration. Words cannot fully convey my thanks and appreciation.

... sannyasyadhyatma - cetasa
Nirasir nirmamo bhutva yudhyasva vigata - jvarah!

(... free from desire and attachment, whether physical, mental, material or spiritual,
With consciousness firmly established in knowledge of the self,
wage war with all your might)

The Bhagvad Gita, 1st century AD

Qui desiderat pacem, praeparet bellum

(Let him who wants peace prepare for war)

Vegetius, 4th century AD



Introduction

Warfare has been an indelible part of human history from the earliest times. It is not surprising therefore that the art of war is one subject that has always aroused keen interest and fascination amongst people and nations, past and present. The study of war preoccupies the human race and its curiosity to arrive at a foolproof solution to attaining victory in conflict will never be satiated. Military thought is a complex product of the intellectual analysis of violent battles and wars.

The Art of War is one the world's earliest military treatises, written more than 23 centuries ago by the warrior-statesman Sun Tzu. The book is short but is inspirational, unusual and enduring. It is inspirational because it offers a very comprehensive, and at times unique, set of principles for achieving triumph over opposition. It is unusual because of the universal applicability of those principles across the entire range of human endeavour. It is enduring because the axioms

that Sun Tzu wrote are truths that are valid and applicable today and remain relevant 2300 years after it was written. This is an astounding achievement.

Modern scholarship suggests that *The Art of War* was written sometime during the Warring States period—480 to 221 BC—in Chinese history. It is perhaps necessary to bring this period into a broader historical perspective for a clear understanding of the antiquity of the text. Around that time, Gautama the Buddha was on his wandering pilgrimage through India to find the meaning of truth; in Persia (Iran), Zoroaster was enunciating the philosophical-religious fundamentals from which Islamic thought would flourish; the Jewish state had embraced the Torah as its moral nucleus; in Greece, Socrates, Plato and Aristotle were expounding the theories and ideas that would become the foundations for modern Western philosophy; Lao Tzu and Confucius, two of the great ‘sages’ of China who were cultivating their own theories were contemporaries; and Alexander the Great was gathering an army that would successfully conquer Greece, Persia and reach the borders of India. As R. L. Wing puts it, ‘It was a significant moment in human history, rich with new ideas and fierce aggression’.¹

The Author

Unfortunately, very little is known about the Master who penned the 13 chapters. There is no record in history for the actual dates of Sun Tzu’s birth and death. Su-ma Ch’ien is one of the earliest chroniclers of Sun Tzu and has provided a very scanty biography. He states that Sun Tzu, whose actual name was Wu and a native of the Ch’i state, came to the notice of Ho Lu, King of Wu (the present Suzhou, Jiangsu Province). The commonly told story of Sun Tzu disciplining the King’s favourite concubines, along the way beheading two of the senior concubines to establish authority, and admonishing the King regarding his incapability to translate words into deeds is attributed to Su-ma Ch’ien.² The King is believed to have understood the brilliance of Sun Tzu and appointed him general.

It is obvious that any attempt to reconstruct even the basic outline of Sun Tzu’s life has to be based almost wholly on conjecture. A view is that Sun Tzu entered the service of Wu around the time of Ho Lu’s accession and gathered experience as a subordinate commander and rose to the rank of general during the intense military activities that marked the first half of the King’s reign. For almost two decades the armies of Wu were victorious over those of their traditional enemies, the Kingdoms of Yueh and Ch’u. In 473 BC, the armies of Wu were defeated and Sun Tzu must have witnessed the kingdom’s

¹ R. L. Wing, *The Art of Strategy*, Doubleday, New York, 1988, p. 13.

² James Clavell, *The Art of War*, Dell Publishing, New York, 1983, pp. 3–6.

collapse and disintegration. Sun Tzu was therefore a well-seasoned warrior when he wrote his famous book, *The Art of War*, towards the end of Ho Lu's reign.

There are no further details regarding Sun Tzu available after this, except for a modest, single sentence in an ancient book that states almost as an epilogue to his life, 'Outside the city gate of Wu is a large tomb—the tomb of the King of Wu's foreign official, Sun Wu—which lies ten miles from the county. He was expert at military strategy.'³ No doubt, it can be surmised that Sun Tzu was not only a military theoretician but also a great commander with a profound capability in the art of command and leadership.

The Warring States

Confucius, the most influential of China's philosophers died in 479 BC. A quarter of a century later the kingdom of Chin was conquered by a coalition of three major clans, the domain divided and the King and his family exterminated. This was the beginning of the age of the Warring States. In 450 BC there were eight large states in China, but two of the far-flung kingdoms in the north and east (Yen and Yueh) did not play any decisive part in the wars that raged almost continuously for the next two and a quarter centuries. During the first 100 years, six smaller states disappeared from the historical scene, having been 'eaten up' by the larger kingdoms.

This was one of the most chaotic periods in China's long history. During this period, the scale of conflict increased phenomenally, sustained by the improved agricultural productivity that led to greater material productivity. As a result, the strength of the military forces of even smaller states increased manifold. The strongest state reportedly maintained a standing army of a million soldiers and is said to have mobilised 600 000 for a single campaign. The campaigns themselves became of such magnitude that they required lengthy periods for preparing adequate logistics, mobilising the troops and then engaging the enemy. The engagements themselves became long-drawn affairs involving extended marches and battles.

The resources involved were vast and the price of failure in battle was grave. The management of such campaigns demanded great expertise and the profession of arms quickly developed. Although the entire nation was subject to seasonal military training of some sort, and men were conscripted for combat when needed, it was recognised that the military's core had to be composed of practised, disciplined, officers and soldiers. Manuals that described tactics to be employed and the field manoeuvres of the basic infantry unit became indispensable to the efficient employment of the military forces. Soon an extensive body of military thought and theory appeared, stimulated equally by battlefield requirements and by new political theories and philosophical thoughts. There

³ J. H. Huang, *Sun Tzu, The New Translation*, Quill William Morrow, New York, 1993, p. 20.

is historical evidence that suggest that a large number of military books were composed during this period.

The emergence of the profession of arms as a dedicated pursuit also initiated a change in the qualifications and responsibilities of the military commander. Military strategy became so complex that the replacement of a general could, and frequently did, result in the defeat of the army, endangering the entire nation.⁴ The kings continued to meddle in military matters—most often with catastrophic effect—at the instigation of ‘civilian’ officials in the court. However, professional officers who specialised solely in military affairs started to become the norm. Early during this period the ideal commander was an effective civilian administrator who doubled as a military commander during times of war, but towards the end the military was commanded by dedicated professionals. The result was the gradual estrangement of the civilian realm from the harsh realities of war.

The Warring States period of Sun Tzu’s time is aptly named. During this time over 300 wars were fought between different states of China and against the major ruling dynasty, the Chou. In contemporary terms this would amount to the Warring States experiencing the equivalent of World War II continually for 150 years.⁵ While the weapons were totally different, the devastation and human suffering that resulted were equally profound. Although contemporary warfare has evolved far beyond the use of chariots or crossbows, the fundamental nature of conflict has remained exactly the same: a struggle for ideological supremacy and the control of resources.

The Vitality of the Text

The opening verse of Sun Tzu’s classic provides the fundamental clue to his philosophy of war. He states that war is of grave concern to the state and therefore must be studied thoroughly. This is clear recognition that armed conflict is not transitory and cannot be treated as an aberration. In fact it is a conscious act and therefore can be recurrent, making it susceptible to rational analysis.⁶

Sun Tzu laid a great deal of emphasis on the moral strength and intellectual faculty of commanders and believed them to be decisive in war. The underlying theme of *The Art of War* is that an enemy must be overcome by wisdom. To achieve this Sun Tzu advocated certain measures that must precede the act of war to make victory easier to achieve. Sun Tzu proclaimed that the best victory is one achieved without battle, when the enemy is isolated and weakened to such a state that the will to resist is broken. Only when this was not possible should recourse be taken to apply lethal force with the armed forces.

⁴ Ralph D. Sawyer, *The Art of War*, Westview Press, Boulder, Colorado, 1994, p. 54.

⁵ Wing, *The Art of Strategy*, p.13.

⁶ Samuel B. Griffith, *Sun Tzu The Art of War*, Oxford University Press, London, 1971, p. 39.

Even then it should be ensured that victory is gained in the shortest possible time, at the least possible cost and with minimum casualties.

National unity, attained through the government's commitment to the welfare of the people, was deemed by Sun Tzu to be essential to victory in war. He also established a realistic basis for the comparison of the power base of the adversary with one's own by relating war to the political context and the relative capabilities of the armed forces vis-à-vis the morale, unity of command and the overall stability of the home state. The perception that mental, moral, physical and circumstantial factors directly affect the outcome of a conflict is remarkably lucid. Sun Tzu was perhaps the first person to state this proposition clearly and place the physical aspect of war in a proper perspective. The importance of these factors in contemporary conflict underlines the deep philosophical foundation of the treatise.

Sun Tzu unmistakably appreciated the difference between what are contemporarily defined as 'national strategy' and 'military strategy', and also understood the implicit connection between the two. During his time, national security strategy and military strategy were normally considered the same and Sun Tzu's perspicacity in clearly delineating the two and explaining their interaction must be appreciated. Another factor that stands out as totally different from the norms of the time is that this ancient writer did not conceive the object of military action to be the annihilation of the adversary's forces, the destruction of their cities and laying waste the countryside. Along with considering war as a last resort, his advice to limit the destruction that accompanies war was a novel concept at the time it was written. There is a direct correlation between this basic surmise and the restrictions regarding damage and destruction that are laid down by governments prior to the employment of military forces in contemporary conflict situations.

Sun Tzu also realised that victory and defeat in battle are predicated in the cognitive domain and therefore advocated the mastery of deception, stating 'all warfare is based on deception'. The primary target of all actions is the opposing commander's mind and victory is achieved through the manipulation of the adversary's thought process and perceptions. Even though the concept was written by Sun Tzu more than 2000 years ago, it is perhaps even more applicable in today's complex wars and conflicts wherein the adversary is ill-defined and diffused.

The other major factor that Sun Tzu explored is the need for adaptability. His theory of adaptability is an important aspect of his thought process. The need to be flexible throughout the conflict process—from planning to execution and then the enforcement of post-conflict peace—was underscored by Sun Tzu. He further explained that flexibility must transcend all levels of command and warfare, from the strategic to the tactical. Adaptation of the strategy to cater for the situation of the adversary was propounded as a critical aspect of the intellectual flexibility of a sophisticated commander. The need to be flexible in all aspects of the conduct of war is an implicit requirement for commanders and the force as a whole in contemporary situations.

By his shrewd observations of the wars of his times, Sun Tzu achieved a basic awareness and understanding of the devastation they cause and the fact that the world (as he knew it) was interrelated to an extent wherein it faced survival or extinction as one entity. In *The Art of War* he translated this philosophy into specific strategies to be victorious in conflict while acknowledging the interdependency of even the warring states. This is military philosophy at its most sophisticated and has found resonance through the ages.

Interpretations of classical works of philosophy will always be affected by the cultural leaning of the person carrying out the study as much as the work itself is influenced by the prevailing culture when it was written. This is the case with all interpretations of *The Art of War* into English. There has been any number of comparisons made between Sun Tzu's book and Carl von Clausewitz's *On War*, written in 1832. However, more than the similarities in the strategic content in the two masterpieces, it is the differences that clearly underline the cultural differences that influenced both the authors. For example, Sun Tzu envisions decisive psychological dislocation that leads to victory as being achieved without the use of force. However, Western methods of war, epitomised by Clausewitz, have evolved away from the psychological means and towards the increasing application of men, materiel and technology in the pursuit of victory.⁷ Both the concepts, although separated by almost 2000 years, are clearly the products of the different cultures that influenced the development of the two philosophers.

There is, however, much difference between the East and the West in cultural heritages, in values and in ways of thinking. In the Eastern way of thinking, one starts with the whole, takes everything as a whole and proceeds with a comprehensive and intuitive synthesization [combination]. In the Western way of thinking, however, one starts with the parts, takes [divides] a complex matter into component parts and then deals with them one by one, with an emphasis on logical analysis. Accordingly, Western traditional military thought advocates a direct military approach with a stress on the use of armed forces.

Cao Shan (ed.)

*The Strategic Advantage:
Sun Zi and Western Approaches to War, 1997*

Irrespective of the cultural aspects in the text, *The Art of War* remains a vibrant military treatise whose doctrine, principles and rules are still practical and of universal significance. It remains a valuable asset for military thinkers and will remain so into the future.

⁷ Arthur Waldron, in Victor H. Mair, *The Art of War: Sun Zi's Military Methods*, Columbia University Press, New York, 2007, p. xx.

Structure and Content

The Art of War is largely composed of a collection of aphorisms, permeated with philosophical and political thoughts of the time that it was written. Its central themes, of targeting the adversary's cognitive domain, of retaining flexibility at all times and of the importance of leadership are recurrent throughout the text in different contexts.

The first chapter of the book deals with the importance of strategy. It lists five things that should be assessed in detail before initiating any action: Tao, nature, situation, leadership and art. Following this discussion, *The Art of War* goes on to emphasise the central importance of deception or the element of surprise. Sun Tzu laid great importance on victory with maximum efficiency which is well served by the essential arts of secrecy and misdirection. He advised the skilled warrior to be prepared for battle, but to resort to it only as a last resort, and introduced the three main facets of the warrior's art: the social, the psychological and the physical.

The second chapter regarding the conduct of conflict stresses the consequences of war and gives strong warnings not to prolong a conflict, emphasising speed and efficiency. Considerable attention is drawn to the importance of conserving energy and material resources. The third chapter, mainly dealing with developing a strategy also emphasises conservation—the general aim of a campaign being to gain victory while remaining intact as much as possible, both socially and materially. Here Sun Tzu affirms that it is best to win without fighting. The principle of conservation is bolstered by several tactical recommendations. There is a list of five ways to ascertain victory all of them premised on the issue of adequacy of knowledge.

The fourth chapter is on the key to victory—adaptability and inscrutability. Adaptability is required at every stage, from the strategic planning to the tactical execution of a plan and is easily understood. Inscrutability in this context is not purely the passive act of hiding one's intent but also includes the perception of what is invisible to others and the response opportunities this provides. A skilled warrior will be able to maximise the advantage at an early stage. The fifth chapter discusses force or momentum, the dynamic structure of a group in action. The essence of Sun Tzu's teaching on force is unity and coherence in an organisation, using the force of momentum rather than relying on individual qualities and talents. This recognition of the power of the group to smooth internal disquiet and function as one body is one of the fundamental reasons that make *The Art of War* a matchless classic of strategy in conflict.

The sixth chapter takes up the subject of 'void and reality' a fundamentally Taoist concept commonly adapted to martial arts. The idea is to be filled with energy while at the same time draining the adversary, thereby making oneself invincible and the opponent vulnerable. In virtual terms this is to make the force formless, for then no-one can formulate a strategy against it. In this case formlessness and fluidity are means of preserving the dynamic potential and energy. The seventh chapter, on

armed struggle, deals with physical aspects, such as field organisation of the force and combat manoeuvres. It recapitulates a number of Sun Tzu's main themes—the need for information and preparation, minimalist tactical philosophy and taking full advantage of 'void and reality'. The four masteries required of a skilled warrior—energy, heart, strength and adaptation—are also explained.

The eighth chapter is devoted to adaptation, already proclaimed as one of the cornerstones of the warrior's art. Adaptability naturally depends on readiness, another persistent theme of *The Art of War*. Readiness is not merely materiel preparedness, but a mental state suited to pursue victory. Sun Tzu also defines the psychological dimensions of the victorious leader enumerating five character flaws that are dangerous. The ninth chapter deals with the strategy of confrontation, dealing with the three aspects of the warrior's art—the physical, social and psychological. Referring to all three dimensions, Sun Tzu describes ways of intercepting adversaries' movements, dismissing the weight of numbers and materiel might. There is a strong suggestion that social and psychological factors can overcome the superior but purely physical strength of an adversary. This calls for mutual understanding and rapport between the leadership and the followers.

The tenth chapter, on situational positioning further elaborates on the concepts of tactical manoeuvring and adaptability, outlining types of terrain and the appropriate ways of adjusting to them. It requires nuanced analysis to extrapolate these to broader contexts but the essential point is to consider the relationship of the force to the material, social and psychological environment. Sun Tzu follows up with a list of fatal organisational flaws for which the leadership alone is responsible. The chapter also stresses the importance of having a clear awareness of own capabilities, the vulnerabilities of the adversary and the lay of the land. The eleventh chapter, on strategic situations is a more detailed treatment of terrain and its relationship to the force. However, the nine grounds enumerated by Sun Tzu can also be interpreted to the social and more abstract senses. He describes the tactics appropriate to each type of ground, including consideration of the social and psychological elements of conflict and their inextricable connection to the environment.

The twelfth chapter begins with a brief description of various kinds of incendiary attacks and the strategic follow up to their effects. Perhaps because of the devastating effects of fire, this chapter also contains the most humane part of the treatise. The chapter is short and ends abruptly with the injunction that weapons must only be used when all other options have failed and overt conflict is unavoidable. Sun Tzu states that a nation destroyed through war cannot be restored and that the dead cannot be brought back to life. The thirteenth and final chapter deals with espionage and the use of intelligence, thus coming full circle with the first chapter on strategy and the centrality of intelligence in conflict. Sun Tzu defines five kinds of spies and very clearly connects to the social and psychological elements in the complexities of espionage as well as the relationship of the spies to the leadership. *The Art of War* starts and ends with the need for effective leadership for a force to be victorious in conflict.

A Contemporary Interpretation

Sun Tzu's classic, although contextual in the literal sense to the times when it was written, can easily transcend any attempt to bind it down in time. It is indeed a timeless classic, provided it is read and understood with a sufficiently broad interpretational perspective. By late 19th Century the Western world was aware that the *The Art of War* by Sun Tzu was 'highly valued in China as by far the oldest and best compendium of military science'.⁸ However, it was not until 1905 that the first English translation by Captain E. F. Calthrop was published in Tokyo under the title 'Sonshi' (the Japanese form of Sun Tzu). However, the first authoritative translation was perhaps that done by Lionel Giles and published in 1910 in London. Thereafter, the book has been translated, interpreted and used not only for purely military purposes, but also to propagate ideas regarding advancing business, banking and other enterprises.

The fact is that *The Art of War* is a work of universal rules on guiding and commanding wars that contains several clearly enunciated factors of contemporary relevance. This enduring relevance makes it unique compared to other books on the art of war and command. Although it is an ancient text, it is profound in its exposition of the various factors that lead to victory within the universal laws of war. It explores the relationship between war and a number of other elements like politics, the state's economy, diplomacy, and the physical aspects of manoeuvring forces. The book stresses the need for commanders to judge the adversary's capabilities and possible courses of action and only then decide the appropriate time and situation to launch a war.⁹

Perhaps the most futuristic concept that Sun Tzu put forward is the emphasis on defeating the adversary through strategic manipulation rather than by the use of force. For a person formulating his thoughts during a period when the entire area within his knowledge was in a state of constant war, this is a genuine conceptual leap forward. Sun Tzu further explained the concept by expressing his belief that 'to subdue the enemy without fighting is the supreme excellence' in war. This concept is in contemporary terms what is termed as a whole-of-government approach to security wherein all elements of national power—political, diplomatic, economic and informational—comprehensively apply their power to assure and enhance national security.

Sun Tzu is also pragmatic enough to accept that there will be situations when the use of military force cannot be avoided and therefore also provides certain fundamental principles that must be adhered to in order to triumph in combat operations. Although he explained the operational and tactical measures to employ these principles purely from an army perspective, with very little imagination, they can be extrapolated to

⁸ Lionel Giles, *Sun Tzu on the Art of War*, Graham Brash, Singapore, 1988, p. viii.

⁹ General Tao Hanzhang, translated by Yuan Shibing, *Sun Tzu's Art of War, The Modern Chinese Interpretation*, Sterling Publishing Co., New York, 2007, pp. 14–16.

the employment of air power. The principles that Sun Tzu listed as most important in winning the conflict are realistic and practical assessment of the situation, initiative, flexibility and surprise. These four are eternal and can still be found in the principles of war that are listed in the latest strategic doctrines of most of the military forces in the world.

Sun Tzu attached great importance to ‘knowing the enemy and yourself’ to win a war. A commander has to be realistic and practical regarding the emerging situation and must have carried out sufficient analysis of the variables before making the final decision to fight. Sun Tzu maintained that the military action in war must be adroitly guided to ensure that one’s own initiative is complete. In cases where the adversary is also manoeuvring offensively, it is necessary to contest the initiative and win, failing which one is likely to be defeated or even annihilated. He stressed the importance of employing the force flexibly taking into account the position and manoeuvring of the adversary, but within the broader capabilities on one’s own forces. The concept of retaining the element of surprise in all the actions that are initiated is one of the central themes of the operational and tactical discussions in the treatise. The explanations that Sun Tzu provides to reinforce the four major principles remain valid in contemporary conflicts today.

The outcome of war is predicated not only by the national security strategy, but also by the concepts of warfare propounded by a nation. Emerging technology has always energised the conduct of war and military forces that failed to convert state-of-the-art technology to bold offensive strategies have always found themselves at the losers’ end in any conflict. Today, more than ever before, technologies are effecting changes in the conduct of warfare at a much faster pace. There is now an acknowledged need to formulate a capstone strategic concept based on knowledge superiority to take full advantage of emerging technologies—in other words understanding ends, ways, and means in a complex security environment.¹⁰ Such a knowledge strategy must address the political and economic aspects of national power while the ability to execute that strategy will depend on the cohesiveness and flexibility of the nation’s elements of power.

¹⁰ Alvin and Heidi Toffler, *War and Anti-War: Survival at the Dawn of the 21st Century*, Little, Brown & Co, Boston, 1993, p. 141.

The Art of War and Air Power

Sun Tzu's short treatise *The Art of War* encapsulates a part of the irreducible essence of Chinese culture and for that reason alone is an important book. It was in this context that E. Machell-Cox produced a translation titled *The Principles of War by Sun Tzu* for the Royal Air Force during World War II.¹¹ He wrote, 'Master Sun is fundamental and, read with insight, lays bare the mental mechanism of our enemy. Study him, and study him again. Do not be misled by his simplicity.'¹² But the book offers much more than a cursory insight into Chinese ways of doing things and lends itself to infinite applications. It has been accepted that the strategic advice it offers concerns much more than the conduct of war and that it is a book of proverbial wisdom. However, it is within the ambit of human conflict that it conclusively proves to be a timeless classic because the axioms that Sun Tzu put forward in relation to the command and direction of a land campaign are very easily translated to the conduct of a contemporary air campaign or a joint campaign.

Air power, as we know it today or for that matter in any form, did not exist during Sun Tzu's time. The fact that the strategic and operational advice that is contained in the book covers all the contingencies that an air commander conducting a sophisticated air campaign could possibly encounter should establish the credentials of the author as one of the greatest strategists of all times and the book as the ultimate strategic treatise.

This book is an attempt at interpreting the ancient classic within the constraints of the employment of air power in a contemporary conflict scenario. The interpretations and extrapolations have been consciously kept at the strategic level in order to reduce the number of variations that could be attempted. The verses that go down to the operational level in the original, for example the one dealing with tactical superiority in Chapter 6, have been explained in as much of a strategic context as possible. However, these explanations provide only one perspective when superimposing them onto a contemporary scenario. It is hoped that the reader will be sufficiently challenged to broaden the thinking and interpretations from this foundation.

The chapter headings have been given subtitles that point in a generic manner to what each one means when explained in terms of an air campaign. The subtitles also indicate the relevance of Sun Tzu's axioms to modern-day warfare with particular reference to the air campaign. It has to be mentioned here that although the primary intention has been to try and gain as much input as possible from the ancient text in understanding the employment of modern air power, a conscious effort has been made to situate this employment within the bounds of a joint campaign. This is particularly so when dealing

¹¹ John Minford, *The Art of War*, Penguin Books, New York, 2003, p. xi.

¹² E. Machell-Cox, *The Principles of War by Sun Tzu, A New Translation from a Revised Text*, Royal Air Force, Colombo, Ceylon, 1943, Introduction p. 2.

with issues of leadership and command that Sun Tzu has clearly delineated for study and analysis.

The reader will also notice fairly early in the reading itself that control of the air is one of the major themes in this interpretation of the classic. This has been necessary for two reasons other than the often repeated fact that control of the air is the *raison d'être* for the existence of an air force. First, a number of concepts that Sun Tzu elaborates on hinge on control of the air for success, either directly or indirectly, when translated to contemporary situations. Second, the four major principles of war that Sun Tzu expounded—analysis, initiative, flexibility and surprise—are all completely dependent on the military force's freedom to manoeuvre. This was so during Sun Tzu's time and remains a basic requirement even today. However, in contemporary warfare freedom of manoeuvre is a direct by-product of control of the air, thereby entwining the two inextricably.

Battles are won by slaughter and manoeuvre. The greater the general, the more he contributes in manoeuvre, the less he demands in slaughter ... Nearly all the battles that are regarded as masterpieces of the military art ... have been battles of manoeuvre in which very often the enemy has found himself defeated by some novel expedient or device, some queer, swift, unexpected thrust or stratagem. In such battles the losses of the victors have been small.

Winston Churchill, 1874–1965

End Thoughts

The concept of security has undergone a drastic revision in the last two decades. It used to be clearly associated with the political process that provided for negotiations rather than belligerence aimed at avoiding wars and ensuring peace as the normal condition amongst states. However, the end of the Cold War saw the beginning of an evolutionary change in the concept of security. The conscious withdrawal of the superpowers from the poorer developing world led to international development agencies stepping into the vacuum with their emphasis on aid and reconstruction, rather than combat and warlike activities. The stress on territorial security that was the mainstay of the Cold War slowly

gave way to the concept of human security—security through armament became security through sustainable human development.¹³

In his treatise Sun Tzu encompasses both these concepts in a balanced way. He extols the virtue of a commander who could win a conflict without having to carry out combat operations. This is in keeping with the contemporary strategy of negotiation before any combat operations are undertaken. The current trend towards irregular warfare is also encompassed in the treatise in terms of the use of deception and surprise and the ‘indirect’ ways to wage war.

Throughout history, the desired end-state of every war that has been fought has been peace and survival of the State. Sun Tzu made this very clear at the start of his book stating, ‘War is a matter of vital importance to the state, a matter of life and death, a road to survival or extinction.’ Therefore, his advice was to avoid wars at all costs, but if one has to enter conflict then ensure that swift victory can be achieved. Any other concept will be detrimental to the State.

Nothing is closer to the truth in the modern world!

Let us see if by moderation we can win all hearts and secure a lasting victory, since by cruelty others have been unable to escape from hatred and maintain their victory for any length of time ... This is a new way of conquering, to strengthen one's position by kindness and generosity.

Julius Caesar, 100–44 BC

¹³ Dylan Hendrickson, *A Review of Security-Sector Reform*, Centre for Defence Studies, University of London, London, 1999, p. 17.



1

Strategic Assessments

Analysing the Conflict

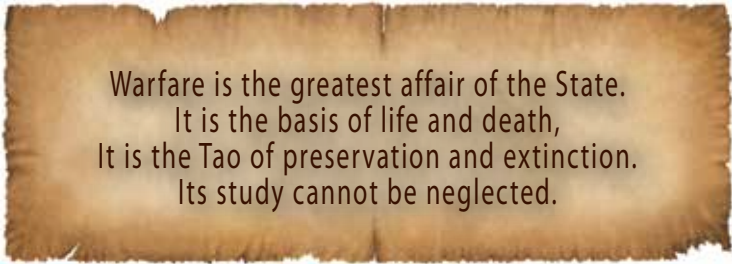
The first chapter of Sun Tzu's *The Art of War* exhorts any serious practitioner of security strategy to analyse the circumstances surrounding any conflict or other security challenges from a geo-strategic viewpoint. Sun Tzu advocated the use of strategic assessments to objectively analyse one's own position vis-à-vis that of the potential adversary in a methodical manner, thereby identifying a winning situation within its framework. Even before considering the possibility of a confrontation leading to conflict, the complete environment should be analysed to compare the strengths and weaknesses of one's position, the relationship between grand strategic objectives and military goals, and the military capabilities that can be brought to bear in any given situation. Such an objective assessment of one's own strategic position in comparison to that of the adversary will assist in developing a deeper understanding of relative strengths and weaknesses. This understanding is an essential part

of planning any military action with the framework focused on the unique aspects of the possible conflict. Sun Tzu also emphasised the use of tactical paradoxes—the ability to project to the adversary a contradictory view of one's own plans—as a winning strategy, when employed by skilled military leaders.

This chapter very clearly indicates the indelible connection at the highest levels of national security between the grand strategic intent of the nation, its power elements and the role of the military. It also explains the importance of strategy, enumerates and describes the fundamental factors that affect strategy and details their individual characteristics, and then indicates how these can be used to calculate the chances of success in a campaign. Sun Tzu starts on the premise that war is the most serious undertaking of a nation, while also being the most complex of human endeavours. He goes on to lay down two basic premises—that a country must have a comprehensive security strategy and that it should also have adequate military capability to support the strategy. Much later in history, Carl von Clausewitz propounded similar ideas in his world famous treatise *On War* (1832). The similarities of thought between these two grand strategists—one a product of Chinese education and culture of around 200 BC and the other a nineteenth century European strategist—regarding war at the strategic level and its direct relationship with the political imperatives of the nation are at times startling.

Military forces have a built-in tendency to employ, in their current conflict, concepts and techniques that have been successful in the past. However, every conflict is unique. It needs clear and contextual analysis of the strategic situation to ensure that outmoded techniques, however successful in previous conflicts, are not employed in emerging conflict.

The Premise



Warfare is the greatest affair of the State.
It is the basis of life and death,
It is the Tao of preservation and extinction.
Its study cannot be neglected.

The art of war is of vital importance to the State—military affairs, therefore, becoming a country's vital political concern. The survival or destruction of a country and the life or death of its people may depend on military action. Therefore, it is imperative that it be examined carefully.

Through the centuries of human history, war has come to be recognised as a visible extension of a nation's strategic intent. Wars, however small or big, are vital to the wellbeing of a nation. They have to be prosecuted with clear objectives, the political will and military wherewithal to win. No war is a stand-alone military confrontation; it is always an affair of the entire State. Therefore, anything short of complete victory is bound to dilute the status and power of the State, both internally and externally. A nation's economic prowess and availability of warfighting assets contribute directly to the operational outcome of a conflict. However, the overriding factor in assuring victory is an overarching strategy that is clearly understood across the highest levels of national and military leadership. Such an understanding can be achieved only through assiduous analysis of the prevalent politico-military and geo-strategic environment.

Sun Tzu believed that conflicts were never a purely military undertaking, but embraced all the elements of national power—politics, economy, military and diplomacy. By its very nature, war is many faceted and different thinkers and strategists have singled out and expanded different facets. However, war is a man-made phenomenon and, therefore, directly influenced by human thinking and action. This makes it imperative not only to understand the nature of war, but also to analyse clearly the pros and cons of an impending conflict. The decision to go to war is the most important one that a nation-state takes; a decision that must be taken only after the myriad repercussions that follow an act of war have been identified and closely examined. In today's world, there is only a remote chance of a nation having to engage in a war of national survival. However, other forms of conflict with a higher probability of occurrence have emerged and all of them have the potential to inflict unacceptable economic, social and political damage on all participants irrespective of the final outcome and who is victorious. As a result the need

to study conflict and its underlying causal factors is more important in a contemporary scenario than perhaps a century ago.

There is also the need to understand that protracted conflicts are detrimental to all parties and, therefore, 'victory' should not be pursued at the cost of all else. When an opportunity presents itself to negotiate and achieve national goals, there should not be any hesitation in employing diplomatic means as a tool to further one's own advantage. Essentially, war is only one of the measures that can be adopted to ensure the safety and security of the State. Two factors emerge from Sun Tzu's basic premises—the requirement to analyse a nation's security environment in order to formulate a successful strategy and the need to establish military capabilities that support this strategy.

Indeed, deepening study of past experience leads to the conclusion that nations might often have come nearer to their object by taking advantage of a lull in the struggle to discuss a settlement than by pursuing the war with the aim of 'victory'. History reveals, also, that in many cases a beneficial peace could have been obtained if the statesmen of the warring nations had shown more understanding of the elements of psychology in their peace 'feelers'. Their attitude has commonly been akin to that seen in the typical domestic quarrel; each party is afraid to appear yielding, with the result that when one of them shows any inclination towards conciliation this is usually expressed in language that is too stiff, while the other is apt to be slow to respond—partly from pride or obstinacy and partly from a tendency to interpret such a gesture as a sign of weakening when it may be a sign of returning common sense. Thus the fateful moment passes, and conflict continues—to the common damage. Rarely does a continuation serve any good purpose where the two parties are bound to go on living under the same roof. This applies even more to modern war than to domestic conflict, since the industrialisation of nations has made their fortunes inseparable.

B. H. Liddell Hart
Strategy, 1954

Air power is one of the few elements of national power that has the capability to contribute directly to security across the entire range of possible scenarios. This makes air power one of the principal elements of a modern nation's ability to reinforce its strategic planning. While this is a positive attribute, the carefully designed impact of air power is so important that its application must be tailored contextually to cater for different security environments. No two situations will be exactly the same and optimum results can only be obtained with masterly application of air power leveraging all its inherent strengths. In the study of war, the contribution that air power can make in any given situation will need to be considered at the highest level of decision-making before

commitments are made. This will ensure that the limitations of the force vis-à-vis the quantum of air power that can be brought to bear in a given circumstance is clearly understood at the appropriate level during the planning stage. Realistic planning at the grand strategic level is of the greatest importance in the application of military force and obviously of air power.

Air power is a principal element of national power

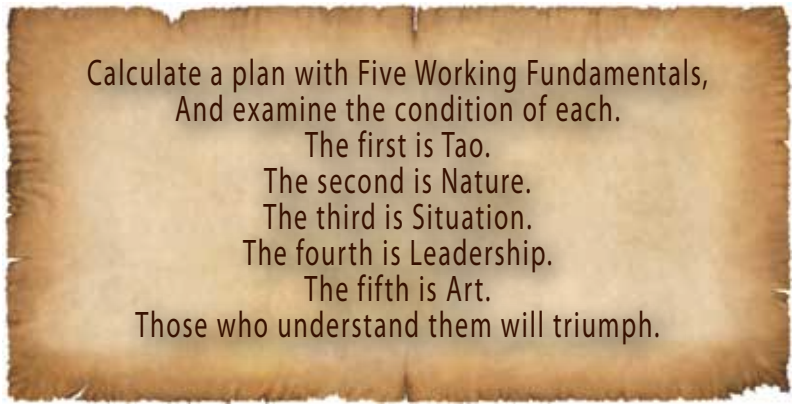
Decision to employ air power must be taken at the highest level

***The quantum of air power available must be a factor
in planning a campaign***

The *Luftwaffe* in the Battle of Britain

In World War II, the commander of the *Luftwaffe*, Reichsfuehrer Herman Goering, undertook the task of defeating the Royal Air Force as a precursor to an invasion of Great Britain. However, the commitment to the national leadership was given without a comprehensive analysis of the effort required to carry out the task and obtain the necessary level of control of the air to permit an unopposed channel crossing. This led to the *Luftwaffe* being committed to an impossible task, which was bound to fail. Realistic appreciation and comparison of one's own and the adversary's capabilities, strengths and vulnerabilities at the grand strategic level is critical prior to launching military action. Failure to carry out such an appreciation will, in almost all cases, lead not only to operational military reverses, but the strategic collapse of the nation itself.

The Five Fundamentals of Strategy



Calculate a plan with Five Working Fundamentals,
And examine the condition of each.

The first is Tao.

The second is Nature.

The third is Situation.

The fourth is Leadership.

The fifth is Art.

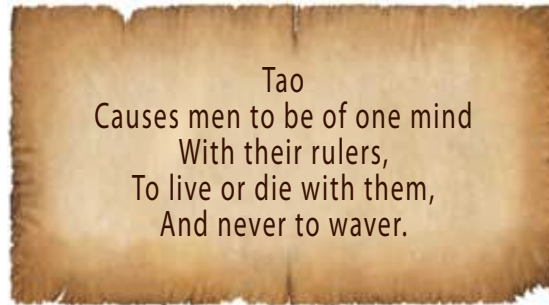
Those who understand them will triumph.

The art of war is governed by five basic factors that should be analysed carefully in the process of establishing military capabilities. Assessments are the first order of business in military operations. The factors to be considered are political philosophy, environmental and climatic conditions, geographic location and associated terrain, military leadership and strategic military doctrine.

There are five fundamental factors— political philosophy, environmental and climatic conditions, geographic location and associated terrain, military leadership and strategic military doctrine—that encompass all the issues related to the conduct of war and should be used to compare the individual conditions of the antagonistic sides in order to assess the outcome of the confrontation. These five factors form the framework for the development of proper strategy for the conduct of war and impact on all aspects that contribute to the successful completion of a campaign. Therefore, it is necessary to understand them fully. Sun Tzu's framework of strategic thought is built with these five factors forming the foundation. Throughout the treatise, these factors are evident as constant threads in a number of nuances and in different subtle variations. The development of strategies is indelibly linked to them in some way or the other.

In contemporary conflict the five factors can be equated to the grand strategic aim, the contextual trends of the time, the battlegrounds on which the conflict will unfold, strategic skills of the higher leadership—both political and military—and the processes a nation uses to bring its power elements to bear at all levels of conflict. The eventual outcome of any war is determined by these five factors and all planning has to be based on one's own evaluation of these factors.

Tao



Tao inspires people to believe in shared ideals and expectations and to pursue common aims. Since all wars are conflicts of political philosophies, it is of the utmost importance for the grand strategic leadership—normally political—to be able to induce the general population to believe and unwaveringly support the same aim as them.

Political leadership will have to ensure that all the requirements of a nation's security are adequately fulfilled. In terms of governance, this requires guiding the people by instruction and direction, while treating them with benevolence and justice, to ensure harmony. It also requires the employment of force, if required. This is a multi-pronged demand and has many facets to it. While the military, diplomatic and economic aspects of ensuring national security are obvious, there are also other subtler aspects of leadership that are not so clear. One of them is the moral dimension of political leadership. Influencing the population in a steadfast manner to stay the course for the attainment of the philosophical aim of the conflict means that the value of attaining this aim must be greater than the physical, mental and moral hardships to all participants. The ruling leadership should have unquestioned moral authority for the people to be united under these circumstances.

Sun Tzu's evaluation of political philosophy and how it is to be pursued is complex. While accepting that conflicts of philosophies are unavoidable, he also evaluates the core cost of battles and wars in terms of possible lives lost. The costs are so great that the political leadership must garner support for all actions by satisfying the needs of the population and sharing a strategic goal with them. Unified action to achieve a shared goal lifts the value placed on its achievement.

From a military perspective, this shared goal can be interpreted to mean the selection and maintenance of aim at the grand strategic level. Very clearly such an aim should be in close harmony with national security objectives and imperatives. In turn the military objective will be derived from these imperatives, while also being carefully aligned with

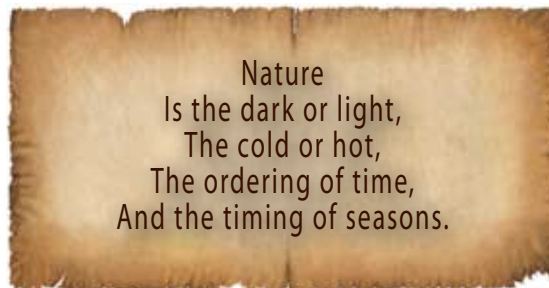
the grand strategic aim. In a conflict, military objectives become the bridge between political aims and security objectives. The means to achieve laid down military objectives are the nation's maritime, land and air power. Thus, air power is linked directly to national strategic objectives. Such an alignment—from security objectives derived from political philosophy directly down to air power projection objectives—will facilitate a whole-of-nation approach to ensuring national security with the military contribution resident within it. The optimal employment of military forces would depend on a number of factors that include the political will of the nation, the interaction of civilian and military leadership, and the cohesiveness of national response to emergent security issues.

Political leadership must be aware of the core costs of military conflict

***The military strategic aim in a conflict must be aligned with
national security objectives***

***Response to security threats should be cohesive, taking all elements
of national power into account***

Nature



Nature
Is the dark or light,
The cold or hot,
The ordering of time,
And the timing of seasons.

The effects of day and night, rain and cold weather, climatic changes and the changing of the seasons should be considered when planning a campaign. Sun Tzu admonishes, 'Do not go into another's territory at an unfavourable time.' Although the concept seems to be emphasising operational and tactical level considerations, it also alludes to the interaction of natural forces in the planning and conduct of a campaign.

Nature describes higher forces that drive the ever changing conditions and cannot be controlled directly. This stanza is also a warning of forces that cannot be directed, could be hidden and are dynamic in nature. In contemporary terms, the expanding appreciation of nature includes not only the changing seasons—which have operational and tactical influence in military campaigns—but also the political climate, economic trends and the shifting changes in attitudes across the global security equation. These trends directly affect the concept of security of a nation. The key strategic issue here is to understand the trends and to be aware of the fact that they are never static but prone to changes—some predictable and some random. These trends cannot be fought to a standstill and require a flexible approach to adjust to the emerging changes to accommodate them effectively.

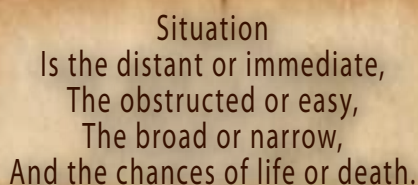
At the operational and tactical levels the influence of seasons, weather and day and night is fairly obvious in terms of their impact on actual operations and missions. Technology has, however, alleviated most of the physical constraints that were felt by air power in its application and today all-weather, day and night capabilities are common place. Strategic planning from an air power perspective will, therefore, have to be more cognisant of the dynamic and unpredictable factors that extend through the environment and into the political, economic, social and other changes. It will be a mistake to consider that the current climate vis-à-vis these factors will remain the same, even for short durations. These main factors will affect all aspects of national security and in turn have a direct impact on the military and air power campaign planning; at the strategic, operational and tactical levels of war.

Technology alleviates physical constraints in the application of air power

Air power has all-weather, day and night capabilities

*Dynamic and unpredictable factors have direct impact on military
and air power campaign planning*

Situation



Situation
Is the distant or immediate,
The obstructed or easy,
The broad or narrow,
And the chances of life or death.

Situation encompasses the geographical location of the battlefield, the terrain on which battles will be fought. The location could be distant or near, the terrain could be difficult to traverse and the area could be open ground or mountainous. Assessment of advantages that can be derived from the terrain should be done prior to operations and is vital to success.

The immediate meaning of the stanza is to understand the geographical location—distances from home base and the associated planning required—and assessment of the terrain in which the conflict will be fought regarding its suitability for offensive or defensive operations and its fitness for the deployment of troops. However, Sun Tzu is also alluding to the necessity to analyse all the arenas in which conflict could occur. Other than the military sphere, these could be either one or a combination of diplomatic forays, economic initiatives, or even social intervention; both overt and covert. Planning must ensure that the chosen battleground is able to support the organisation and generation of forces as required and that other elements of national power are able to provide support as and when necessary.

Situation covers a very broad range of elements. It covers the physical aspects of the battlefield that in contemporary terms means its geographic location in relation to own bases. This will determine the logistics required to engage in conflict at the place as well as the strain it will place on the nation in terms of sustaining any such operations. The actual traversing of the terrain is not as important in today's strategic considerations other than to factor in the increased effort required in inhospitable terrain, especially for surface forces. However, the relative strategic importance of a particular area may become an important factor in the considerations to invade or annex it during times of extended military conflict. In contemporary conflict it is more important to understand the different arenas in which conflict can take place and the obtuse use of national power elements that facilitate conduct of conflict other than armed military confrontation. In planning a campaign the right arena should be picked at the highest level of decision-making. Each element will be the source of both advantages and disadvantages that will have to be

considered before employing them as power projection tools. Sun Tzu's system indicates the need to view each of the possible arenas of conflict as being different and changing.

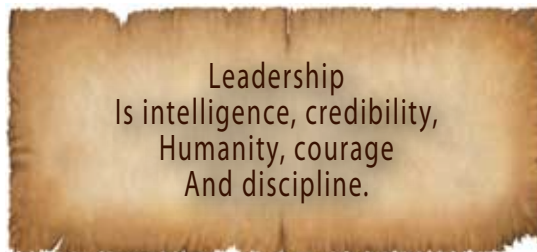
Air power comes into its own when dealing with the problems of geographical distances and traversing inhospitable terrain. The reach, penetration and speed of response that is inherent in air power, in offensive action as well as in airlift, makes it the ideal capability to overcome issues associated with geography and terrain. Air power plays a vital role in shaping the environment in terms of the battlegrounds that are not physical—virtual conflict environments—for diplomatic overtures, economic assertions or even social action to be successful. In the interdependent global security scenario the characteristics of air power that provide governments with rapid and effective response capabilities will be highly prized.

*Air power's inherent reach and penetration overcomes issues
of distance and terrain*

*Air power is effective in the virtual environments of
diplomacy and economics*

*Air power provides rapid and effective response
capabilities to the government*

Leadership



Military leadership and command is a matter of intelligence, sincerity, trustworthiness, humaneness, courage and sternness. A commander should possess the intelligence to recognise changing circumstances and act expediently to seize the opportunity to gain victory. A successful commander will be able to enforce discipline in the forces by being credible and courageous, while at the same time being humane in dealing with personnel issues.

Military leaders must be intelligent and appreciate the value of knowledge. They also must have undisputed credibility in the force, primarily based on publicly visible honesty and humanity in all their dealings. Courage and discipline are virtues that are critical to the success of a commander and cannot be replaced with any other characteristic trait.

Victory can only be assured by leaders who are clever, dedicated, courageous and strict. They must also have resolve—that stems from complete belief in their cause, moral ascendancy and national support—far in excess of the adversaries. Leaders must not only be intelligent but must appreciate the value of knowledge because it is from knowledge that all processes of merit flow. Honesty in all their dealings makes the leaders worthy of emulation and increases credibility making it easier to find a ready following within the force. A leader who is even slightly suspect of being dishonest will lose the moral right to lead in the face of even very slight opposition. Courage and discipline are complementary and critical to the success of a military leader.

The characteristic traits of a successful leader can be studied carefully and identified, but it is difficult to train a person to be a victorious. The corollary is that the traits of a successful leader—intelligence, credibility, courage, discipline, humaneness—are all unquestionably part of a victorious leader's make up. These qualities transcend the physical and can be traced across the entire vertical hierarchy of a military command. A military commander arrives at victory through a combination of training, self-study, experience and confidence; none of which can be substituted or diluted. Military leaders must be professional masters of their domain—arrived at through a combination of their own knowledge and that of their forces—and, more importantly, must be able to identify knowledgeable people within the force and encourage those people to greater physical and intellectual effort. In order to have unqualified following and support, they must exercise care and sensitivity in dealing with personnel in a manner that enhances morale and discipline within the force. Another aspect is that leadership at the strategic level must demonstrate that being victorious in conflict matters, which will prove to be a uniting factor within the force.

An army is like a horse, in that it reflects the temper and the spirit of its rider. If there is an uneasiness and an uncertainty, it transmits itself through the reins, and the horse feels uneasy and uncertain.

Colonel John W. Thomason, Jr.,
Lone Star Preacher, 1941

Courage is ubiquitous and all leaders—from the tactical commander to the grand strategic commander—must possess the courage to be brave in the face of not only physical danger but even when faced with defeat and failure. Physical courage—bravery

in the face of physical danger to one's own being—can at times be the product of instantaneous and instinctive reactions to rapidly emerging situations. Mental courage on the other hand is more difficult to cultivate and is the product of a large number of inputs, some of which are intangible and even genetic in nature. Therefore, mental courage has to be carefully nurtured in leaders—civilian and military—over time and is vital to weather adversity, especially at the strategic level of command, where the fate of the force is almost completely dependent on the commander. Discipline is the bedrock on which all military enterprises are built. In a leader this translates to dependability and reliability at all times—in times of peace, war, victory and adversity. Sun Tzu elaborates later in the book that an organisation can be defeated by exploiting the weaknesses of its leaders.

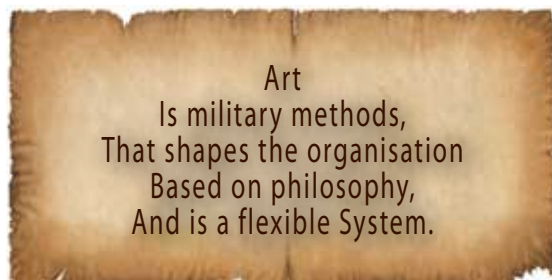
Air power systems are complex entities and almost always need optimised man-machine interfaces to generate capability. The efficiency of these interfaces is dependent on a combination of officer ability and internal troop discipline and quality of personnel, the efficacy of overall training and the effectiveness of the leadership at all levels in creating the motivation to fight. All military leaders must have appropriate levels of professional mastery, which is the core of a fighting force. In air power terms this means that commanders from the tactical level upwards must have the ability to create precise effects through the effective and coordinated employment of assets that are at their disposal. This is critical in air power application mainly because of the scarcity of capable assets and restricted availability of resources needed to generate and sustain it. Commanders who are knowledgeable and possess moral courage to make even unpalatable decisions are the biggest assets to any force. In democratic nations, exercising moral courage also involves providing the civilian leadership with frank advice even at the cost of thwarting politically motivated decisions. This needs strength of character far beyond that needed in any other field of endeavour. It is on these qualities of its leaders that the reputation, strength and status of military forces are built in all nations.

*Air power systems require optimised man-machine interfaces
for capability generation*

*Good leadership and effective training are crucial for generating
and employing air power*

Professional mastery is a prerequisite for military leaders at all levels

Art



Strategic military doctrine, art, is the organisation of the force, chain of command, control, management of logistics, marshalling the force structure and control of military expenditure. This is based on the philosophy of the nation and the entire process must be flexible.

Operational art is based on the philosophical leaning of a particular culture and shapes the organisation, and the force structure of the military. A nation's philosophy regarding its national security requirements directly controls the expenditure of the State on the military, especially during times of comparative peace. The development processes of the art as well as the matured operational art itself, and through it the strategic military doctrine, must retain their flexibility at all times for effectiveness.

Strategic military doctrine is a product of the philosophy adopted by a nation at the grand strategic level of governance. This doctrine shapes the organisation and the force structure development of the military in a cascading manner. Effective doctrine is always dynamic and open to interpretation rather than rigid obedience, thereby making it flexible to adapt to the ever-changing threat and response scenario. Control of military expenditure, particularly in democratic nations, is a direct function of the government and will only match military capabilities to national security needs if it is done within the confines of the strategic military doctrine. This makes it imperative that the doctrine itself is placed well within the grand strategic guidelines of the nation and that the civilian leadership is aware of the direct consonance between the two.

The prevalent culture of a nation pervades its security perceptions much more than it is openly apparent. The cultural impact on the perception of national security cannot be denied and, since grand strategy is a direct flow-on from national security, cultural ethos has a direct impact on it. Grand strategic directives are the foundational inputs to the development of strategic military doctrine. This doctrine further provides the basis for the development of processes and methods that enable a military force to develop the infrastructure—personnel, equipment, concepts—that make it an operationally efficient

fighting force. In order to retain the flexibility of the force, it is therefore necessary to let doctrine dictate the processes.

Innovation is the key principle to retaining the needed flexibility in the entire framework of doctrine, processes and methods development. There are large numbers of potentially good innovations that will seem to fit the requirement; however, the innovations that are selected must remain consistent with the innate philosophy of the doctrine to be effective. The operational art and strategic doctrine must relate directly to the vision of the higher purpose that was shared with the general population in order to make sure that the nation is unified. The entire system must be founded on a long-term vision within the overall philosophy of the nation. Only such a system will be able to pursue the long-term grand strategic vision of the nation, in peace and in war.

For centuries the study of warfare and the formulation of appropriate doctrine and strategy have preoccupied military leaders and philosophers alike. It is demonstrative of the ephemeral nature of war that no doctrine has proved to be flawless, forcing innovative commanders to adapt and modify the available doctrine to suit emerging situations. The foundational strength of all good military doctrine has always been its inherent capacity to evolve as an entity.

Sanu Kainikara
A Fresh Look at Air Power Doctrine, 2008

It is obvious that a major factor to be considered is the impact of the nation's philosophy on the development of the organisational structure of its forces. Organisational structure, which in the case of military forces encompasses the force structure, command and control ethos, and operational deployment strategy, will be shaped by the prevalent philosophy. The influence of philosophy on force structure will be felt for a long period of time because altering the organisational structure is always a long-drawn process.

The military must be able to define its mission, carefully situating it within the larger security ambit of the nation. From this mission statement air power will be able to draw out its own mission and then flesh it out in terms of the required capabilities. The long-term security of the nation is so vital that the mission would have to be defined at its broadest and be relevant for a long period of time. Currently, technological sophistication places a long lead-time requirement on the air power capability development process making the defining of the long-term military mission an absolute necessity. Although the long-term mission has to be defined, the contemporary security environment is volatile making changes to the mission a distinct possibility. This emphasises the requirement for adequate built-in flexibility at all levels and throughout the mission relevancy time frame

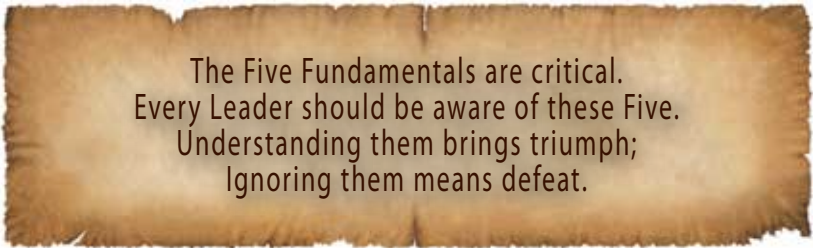
so that capabilities and concepts can be adapted and finetuned to ensure that they cater to emerging security scenarios.

The strategic military objectives and air campaign must be aligned with national security goals.

Military objectives must be defined broadly and in the long-term to facilitate the development of air power capabilities.

Capabilities and concepts must have built-in flexibility to adapt to changing security scenarios

Criticality



The Five Fundamentals are critical.
Every Leader should be aware of these Five.
Understanding them brings triumph;
Ignoring them means defeat.

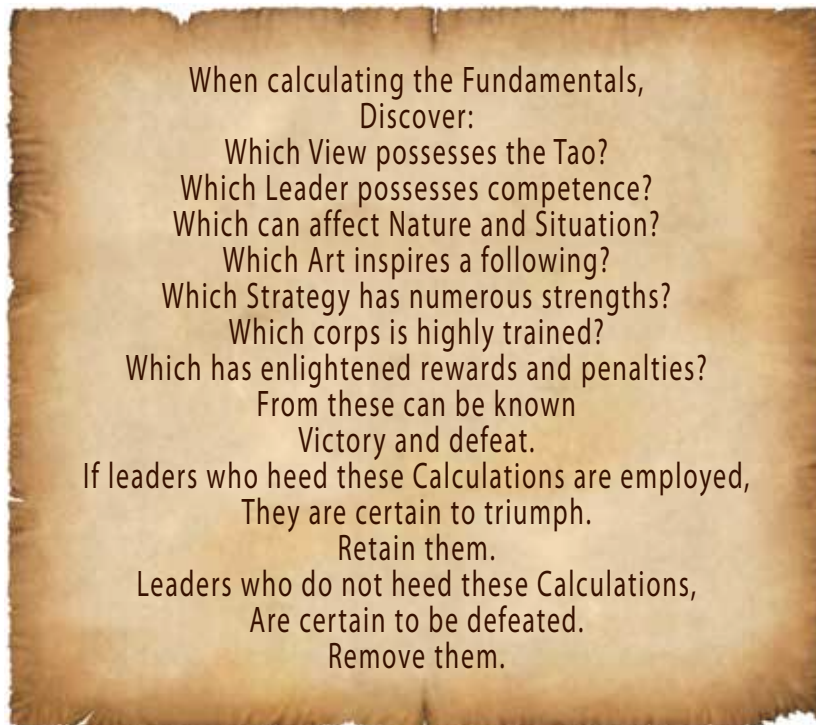
These five fundamentals should be familiar to every general but only those who master them with a deep understanding of the principles of adaptation will be victorious. Sun Tzu believed the fundamentals to be imperative for analysing and judging victory and defeat in a war.

Political and military leaders should pay close attention to the five factors since they are critical to building successfully strategy. In order to assure victory, the political philosophy should be clarified so that grand national strategy can be derived appropriately and military strategy correctly aligned, shifts in environmental and climatic conditions and trends of the times should be leveraged, geographic location and associated terrain should be understood and picked carefully, leaders with the right qualities should be cultivated, and strategic military doctrine should be able to form a flexible framework for the conduct of the mission.

If even one of the fundamentals is ignored in the planning and execution of campaigns and wars, it will not be possible to defeat the adversaries consistently. This would mean

that victory in the long term will be elusive. Any one of the five can prevent success—weak philosophy, poorly judged shifts in the environment, wrong battleground, incompetent leaders, rigid or inconsistent doctrine—and lead to defeat. Good strategy will account for all the five fundamental factors in a realistic manner. As a corollary none of the factors can be considered in isolation, the interaction between two or more of them being more important to the outcome of a conflict than any one of them individually in isolation. For example, the doctrine must suit the capability, the leadership should be able to assess the geographic location and the national philosophy must be appropriate to appreciate the changing trends.

Examining the Fundamentals



In laying down plans for an operation, these fundamentals must be examined closely. It is first necessary to compare the political leadership of nations at war—who can influence the population in attaining the philosophical aim of the conflict. Then the military leadership should be compared in terms of the necessary qualities and next the geographical factors that will affect the conduct of the conflict. Thereafter, assess the comparative merits of the military

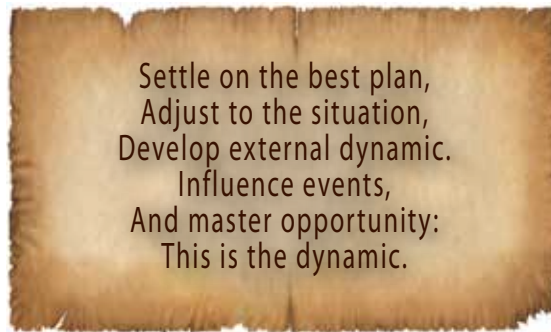
capability systems, discipline, training, operational art and the effectiveness of extant doctrine. A clear analysis of the five fundamentals will indicate who will be victorious in battle. A general who pays heed to this analysis will be successful and triumph.

Sun Tzu's method of strategic analysis is many layered and the examination of the five fundamental factors is the first step meant to indicate what should be clearly learned to understand the larger strategic picture. While the five fundamentals have pertinence in the modern context, an in-depth analysis as laid out by Sun Tzu may fall short of the necessary veracity because of the increased number of variables that interplay in contemporary conflict. Good strategy is based on superior decisions arrived at through the concise analysis of information. All circumstances are unique and, therefore, no assumptions can be made the root of all decisions. Irrespective of the situation, the first step to formulating strategy is to question available knowledge as the precursor to analysis and planning. The uniqueness of the circumstances also affects the national philosophy and the context of its application, leadership and the processes. This is a dynamic situation.

To create a winning strategy, Sun Tzu adopts the method of focusing on comparative or relative values. Especially from a military viewpoint, it is necessary to have a comparative understanding of one's own strengths and weaknesses in each key area vis-à-vis potential adversaries prior to planning a conflict. Such an analysis will permit appropriate allocation of resources to areas that need to be improved in relation to the adversary and help to put one's own capabilities in the correct perspective. A series of serious questions regarding the merits, vis-à-vis the (potential) adversary, of one's own philosophy, leadership, selection of battleground, morale of the population and deterrent capability will provide a clear indication of the outcome of any conflict. Success will be dependent on the leadership being dedicated to such an analysis, having the ability to view the situation objectively and possessing an in-depth understanding of strategy. Politics, economics, military capabilities, diplomacy and geography are the primary factors and the basis for any military appreciation or analysis. This is a universal truth, as relevant today as it was in Sun Tzu's time.

The heart of Sun Tzu's teaching, in this particular instance, is decision superiority. Leaders who ask the right questions and are objective in understanding their comparative strengths are successful over time. Decisions on the battlefield have to be made purely as a function of analysed information, within the bounds of formulated strategy. Air power contributes directly to ensuring that military leaders are provided with adequate and accurate information and further that their decisions are disseminated down to the appropriate levels without undue delay. This capability is at the foundation of success in conflict.

Decision superiority is critical to success in conflict
Air power contributes directly to availability of accurate
and adequate information
Information availability is foundational to winning a conflict



Having analysed the five fundamentals, the military leader must structure his forces according to an overarching plan and the strategy to be employed, while creating situations that can be accomplished, if necessary with outside assistance. The leader should assess the situation and act expediently in accordance with what is advantageous thereby influencing and controlling emerging events and thus the balance.

After carrying out an assessment it is necessary to create a favourable situation by extensive planning. The best plans are formulated only after comprehensive analysis of information that is made available. Only such an analysis will be able to identify the need and availability of external assistance. External assistance need not be physical, but could also be in obtaining a different perspective on one's own plans and strategy. In-depth analysis provides a greater understanding of the available opportunities and identifies even obscure areas where one could prevail with minimal effort. A good military leader will be flexible, able to change tactics based on the emerging situation while continuing to advance towards the strategic objective. Thus they are able to shape events to their advantage and make the best of opportunities that arise.

This stanza directly refers to the need to plan in advance within one's own resources and in accordance with the prevalent security environment. There is always a need to think in terms of alliances and coalitions in contemporary scenarios wherein the quantum of

capability resident in one military force may not be sufficient to ensure victory. The other requirement is to have situational awareness that keeps pace with dynamic changes taking place in the environment—from the strategic to the tactical. This situational awareness must not only be contextual, but also be aligned vertically from the highest to the lowest level. Even the slightest misalignment of situational awareness would lead to disastrous consequences for the larger campaign as tactical actions will not support operational objectives which in themselves may not be synchronised with the strategic goals.

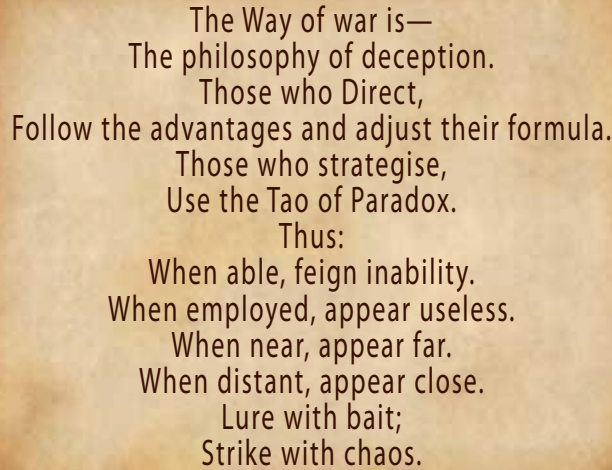
Air power contributes directly to ensuring adequacy of situational awareness across all levels of warfare. Airborne assets are the backbone of information gathering, analysis and dissemination, which is the key to creating dynamic situational awareness and from it, decision superiority. This is perhaps most important at the strategic level since the conduct of a war is directed at that level and planning at that level should have clarity and sufficient built-in leeway for the broader plan to survive minor tactical setbacks. A skilled commander using the basic tenet of air power—centralised control and decentralised execution—to direct intelligence, surveillance and reconnaissance (ISR) assets at all levels of the conflict can create a complete overall picture of the environment, thereby enhancing the situational awareness of the entire force.

Air power is a critical element in creating situational awareness

Decision superiority stems from adequate situational awareness

*Centralised control and decentralised execution in ISR
enhances situational awareness*

The Conduct of Armed Conflict — Paradoxes



The Way of war is—
The philosophy of deception.
Those who Direct,
Follow the advantages and adjust their formula.
Those who strategise,
Use the Tao of Paradox.
Thus:
When able, feign inability.
When employed, appear useless.
When near, appear far.
When distant, appear close.
Lure with bait;
Strike with chaos.

All warfare is based on deception. The duty of a commander is to enforce the nation's strategy for victory. Victory is achieved by controlling the perceptions of the adversaries. Perceptions are manipulated by feigning inability, deploying without the adversary noticing it, and through the use of unconventional means like deception, enticement and evasion. The adversary should be lured to take precipitous action and thus be weakened, while one should be able to mount decisive attack on enemy inferiorities at the most advantageous moment.

Every action that is initiated communicates something to the opponent. Therefore, it is possible to mislead the adversary by carrying out actions that could be perceived as meaning something that they do not. By doing this, one's own intentions can be kept hidden until it is too late for the adversary to counter them effectively. This is certain to bring success to the campaign. It is also necessary to understand that the adversary will also be attempting to influence one's own perceptions and, therefore, measures must be instituted to analyse all actions of the adversary. The environment thus becomes extremely dynamic.

A sudden inspiration then came to William [at the Battle of Hastings, 1066 AD], suggested by the disaster which had befallen the English right in the first conflict. He determined to try the expedient of a feigned flight, a stratagem not unknown to Bretons and Normans of earlier ages. By his orders a considerable portion of the assailants suddenly wheeled about and retired in seeming disorder. The English thought, with more excuse on this occasion than on the last, that the enemy was indeed routed, and for the second time a great body of them broke the line and rushed after the retreating squadrons. When they were well on their way down the slope, William repeated his former procedure. The intact portion of his host fell upon the flanks of the pursuers, while those who had simulated flight faced about and attacked them in front. The result was again a foregone conclusion: the disordered men of the fyrd were hewn to pieces, and few or none of them escaped back to their comrades on the height.

Sir Charles Oman

History of the Art of War in the Middle Ages, 1898

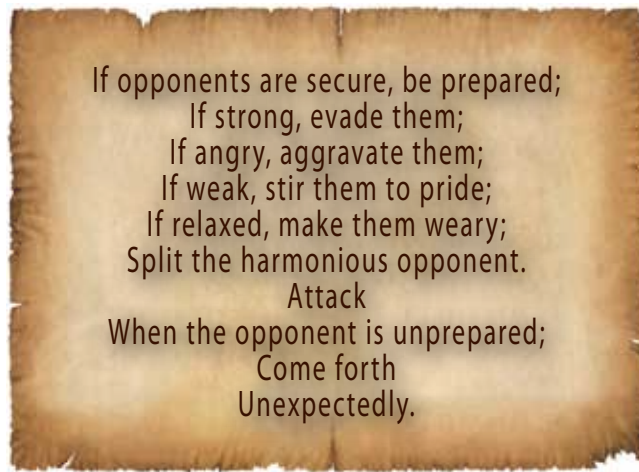
The concept of deception alludes to information operations in all its variations. Security of information and countermeasures to thwart adversary efforts to gain access to information is vital to the success of all campaigns. Plans have to be formulated in the utmost secrecy and information ‘leaked’ at the appropriate time to shape the adversary’s perceptions of how the campaign is likely to unfold. All campaigns are inherently dynamic in nature and information is a vital key to success. Strategically all actions must be oriented towards misdirecting the adversary as to one’s true abilities and intent. Providing misinformation is better than trying to keep own intentions secret, which is the minimum that is required. Secrecy alone will arouse curiosity; deception, when well carried out, mitigates the curiosity and misleads the adversary.

Successful information operations, including the use of deception, will lead to information superiority. This superiority should be established, first according to the strategic intent and then by adapting to the conflict situation. Air power is critical to ensuring information superiority of a nation at all times. The relationship of information and warfare does not start or stop with the commencement and end of a campaign. It is an ongoing process, conducted during peace and war, clandestinely and overtly, through the deployment of technical and human assets, and the accurate analysis and interpretation of available information. It is in the context of collecting information in times of peace that air power assets become extremely important. In the contemporary security scenario, information regarding adversary dispositions and movements has to be constantly updated by surveillance that can only be done from the air. Without such surveillance, a military force can become virtually blind and unable to carry out any meaningful operations. Deception—manipulation of the adversary’s belief system—is only one part of information operations.

*Information superiority must be established at the
commencement of a conflict*

*Information warfare is an ongoing process, conducted during
both war and peace*

Deception is an important part of information operations



Prepare against the enemy when he is secure at all points and avoid the enemy for the time being when he is stronger. If the adversary is prone to anger, aggravate the emotional turmoil and if weak, make them overconfident. If the enemy forces are well organised, wear them down by surprise attacks and if they are united, sow dissention amongst them. Attack when the adversary is least prepared and take them by surprise.

Sun Tzu believed that opportunities to be exploited for success have to be created dependent upon the adversary's situation. This concept is circumspect in that it is built on the belief that opportunities for one's own success have to be created by deft manipulation of the adversary. It emphasises that by deception and other means the adversary can be forced to err—in judgement and action—leading to the creation of openings that can then be optimally exploited. Accordingly, the advice is to prod the adversary into doing things by evading battle with a strong force, aggravating an already deteriorating situation, creating a sense of overconfidence, and creating disunity within the enemy force. Essentially it is about maintaining sufficient flexibility to adapt

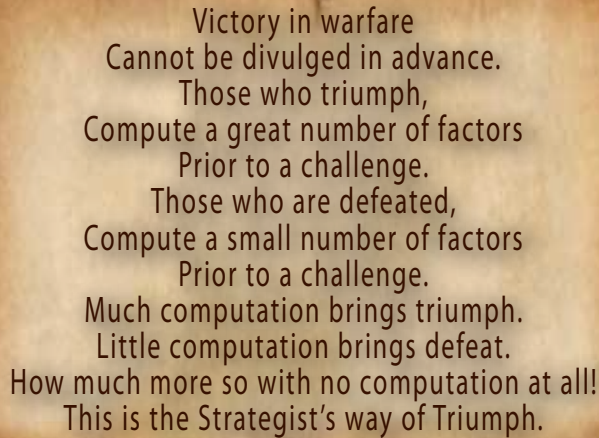
emerging situations to one's advantage. Sun Tzu also emphasises the use of surprise when on the attack to ensure victory.

A primary aspect of strategy is that it is the art of discovery—of recognising a winning situation when it presents itself, earlier than the adversary. By accepting that an opportunity can only be created by manipulation—shaping and forcing the adversary into error—it is acknowledged that the environment cannot be easily controlled. However, it is necessary to be in complete control of one's own position within the environment because only then can weaknesses in the adversary strategy be recognised and exploited. This skill in positioning oneself at the appropriate position requires patience and perseverance. Success cannot be planned at will, but is a function of recognising the opportunity, being able to follow it through and retaining the flexibility to reposition oneself as and when necessary within the larger strategic environment. Victory in military campaigns will not go to the side with the best laid, but rigid plans, but to the side that is capable of adapting its plans to take full advantage of emerging opportunities while constantly being on the lookout for better opportunities to exploit.

It is difficult to control the conflict environment

*Patience and perseverance are required to identify adversary's
weaknesses and exploit them*

Victory in conflict is dependent on flexibility in planning and strategy



Victory in warfare
Cannot be divulged in advance.
Those who triumph,
Compute a great number of factors
Prior to a challenge.
Those who are defeated,
Compute a small number of factors
Prior to a challenge.
Much computation brings triumph.
Little computation brings defeat.
How much more so with no computation at all!
This is the Strategist's way of Triumph.

Careful strategic calculations can lead to victory, although it is not possible to formulate them in complete detail beforehand. The success of strategy is reliant on prior calculations of a number of variables to ensure the promise of victory beforehand. Calculations of limited number of variable will lead to defeat. If this is the case, then defeat that follows no calculations at all will be debilitating. The most efficient strategy is the one that is unexpected; the best of plans is the one that is unknown.

Sun Tzu's thesis is one of mathematical understanding of the science of strategy, viewed as a systematic, organised process. The core of strategy is built on calculations regarding probabilities and responses and their efficacy. Although there is no sure way to ascertain whether one will be victorious in war or not, the factors that contribute to victory can be calculated in advance. Only campaigns that have a minimum pre-agreed assurance of success should be undertaken, while ambiguous campaigns that do not provide clear indications of victory must be avoided. The winning strategy is the one that is most unexpected for the adversary, carried forward by plans that are kept under wraps and revealed only when being put into action.

Strategic calculations are complex and involve the accounting of a number of factors that have varying influences on the final outcome. The primary input has to be the final goal or end-state that is sought in accordance with national security objectives. The analysis should take into account one's current position vis-à-vis the adversary, strengths and weaknesses of both and then calculate the benefits of the actions being contemplated. In contemporary terms this could be termed as a whole-of-nation approach to ensuring national security. Challenges that emerge in the course of strategic calculations can be mitigated before actual combat operations or alternative plans devised using other

elements of national power. In these calculations, alliances, coalitions and potential adversary capabilities should also be considered in the overall strategic appreciation.

It is the supreme duty of the military leadership to carry out the nation's strategy for victory. The achievement of victory is dependent on establishing superiority, weakening the adversary through unconventional means and carrying out decisive attacks. Superiority is established first in accordance with the highest strategic intent and then by adapting military actions to the emerging conflict situations; the adversary is weakened through deception—by hiding one's capability, method of military application and obfuscating the response time—through enticement, and the use of defence, evasion, and disunity. Decisive attacks are carried out by striking the adversary's centres of gravity—in the physical and cognitive domains—at the most opportune time.

Sun Tzu describes the five factors as the key to strategic triumph. These five fundamental factors form the basic framework for a realistic strategic appreciation of the emerging security environment and the formulation of a nation's grand strategy. Only those who develop strategy taking into account all the myriad variables that directly and indirectly impact the realistic planning, conduct and conclusion of a campaign will triumph.

*A good strategy will take into account all factors that
contribute to victory*

*Strategy must be formulated only after comparing one's own strengths and
weaknesses with those of the adversary*

*The supreme duty of military leadership is to lead the nation
to victory in conflict*

The Russo-Georgian Conflict, 2008

The lack of careful strategic calculations and analysis was clearly demonstrated in the five-day conflict between Russia and Georgia in August 2008.

Georgia initiated the conflict, blaming extreme provocation from the breakaway province of South Ossetia, in an effort to retake it. An analysis of the conflict brings out a combination of fundamental tactical errors

cont.

and serious strategic blunders in the Georgian campaign. The reasons for this debacle can be identified as two key flaws in the military planning: an overconfident self-assessment of its own combat capabilities and readiness, and total underestimation of the scale, scope, ferocity and bluntness of the Russian response.

The overestimation of its own capabilities was based on the US-run, US\$ 64 million dollars, Georgia Train and Equip Program (GTEP). The planners did not understand that the program was never aimed at providing the Georgian military with offensive capabilities, but provided training to a restricted number of troops to gain just sufficient counter-terrorism capabilities for them to be deployed to Iraq.

The underestimation of the Russian response was rooted in the wrong Georgian assessment of threat perception. Georgia's strategic assessment—based on its three grand strategic guiding plans, the National Security Concept, National Threat Assessment and National Military Strategy—disregarded any direct threat from Russia. They variously stated that there was 'little possibility of open military aggression against Georgia' and defined 'the probability of direct aggression' against Georgia as 'relatively low'.

The events speak for themselves, a clear demonstration of the dire consequences of not being able to carry out a realistic strategic assessment of the national security environment.

Conclusion

Throughout history it has been apparent that a nation that goes into a conflict without adequate considerations being given to all factors that impinge on the final outcome always comes out of the conflict second best. In terms of ensuring national security this obviously is not an acceptable situation. The first and foremost tenet of warfare is to understand that war is not a purely military enterprise but the realm of all elements of national power, applied in an optimised manner to achieve national objectives and protect national interests. The decision to commit the nation to war is the most important for a government to take and must not be considered lightly, even if the adversary is considerably weaker than one's own forces. At the national strategic level of leadership it must be appreciated unambiguously that every conflict is unique and needs careful analysis of all factors in a contextual manner. Therefore, it is necessary for grand strategic leaders of a nation to clearly understand the implications of going to war and ensure that the national interest is never compromised because of lack of preparation or resources.

Sun Tzu advocated a many-layered analysis of the strategic situation before committing the nation to war; an axiom that is still valid in the contemporary environment.

The end-state to be achieved in the war must not only be clearly enunciated, but must also align completely with the grand national security strategy of the nation. This is critical to ensuring that all elements of national power will operate jointly to assuring victory, i.e. the achievement of the desired end-state. The military strategy for the conflict is derived directly from the national security strategy and is normally the driving force behind the overall strategy for the conduct of the campaign. Military strategy is one of the five major factors that govern the conduct of war, the other four being political philosophy of the nation, environment and climatic conditions, geography of the area of operations and military leadership.

Within the military capabilities, air power is a major element of national power and provides the government with flexible options to address emerging national security issues. Particularly attractive is its rapid response capability—to provide both lethal and non-lethal solutions to threats—that can transcend restrictions of terrain, political borders and constraints of distance and even time in a relative manner. Air power is a coveted capability. In order to ensure that air power is applied optimally at all times, it is necessary for air commanders at all levels to be professional masters of their domain. In fact, professional mastery and good leadership are two sides of the same coin; one cannot exist without the other.

Air power can create strategic effects, even through its tactical actions, and therefore it is necessary that the decision to employ it, in any form, against a potential adversary must be taken at the highest level of a nation's politico-military leadership. Air power has all weather, day and night capabilities and, in the recent past, technology has enabled the amelioration of almost all its constraints. Further, its coercive capabilities can be very effective when a nation is in the process of applying its 'soft power' in diplomatic and economic initiatives. However, air power also requires a fairly long lead time to develop and operationalise, necessitating a clear vision of the future security environment in which the nation will have to function.

Information superiority is a foundational requirement for victory in conflict. Air power is a critical element in the collection, collation, analysis and dissemination of information and in ensuring its authenticity and accuracy. Only with information superiority can a commander be assured of adequate situational awareness regarding the theatre of operations and even beyond the theatre. Situational awareness is a war-winning factor and is critically dependent on air power assets for its veracity at all times. Air power capabilities, therefore, create a large protective umbrella over and beyond the immediate theatre of operations, both in conflict situations and in peace, for all elements of national power to operate at their optimum capacity.

The importance of military leadership in guiding the nation to victory cannot be overemphasised. However, it is particularly critical during the preparations for war

and the conduct of actual combat operations, the success of which is essential for the subsequent actions the nation must undertake to achieve the desired end-state. Military leadership is a complex and sophisticated endeavour that can at times completely subsume a human being. Therefore, it is necessary to ensure that the nation is led by competent and professional military commanders, who have the tenacity, intelligence, credibility, professionalism and courage—both moral and physical—to lead the nation and ensure victory.

The security of a nation flows from a well-formulated national security policy that permits all elements of national power to exercise their capabilities in a flexible and robust manner to achieve objectives that are clearly delineated and understood. Sun Tzu lays the foundation for success in any conflict as the strategic assessment of prevalent conditions and analysis of all factors that are likely to affect the conduct and outcome of the conflict.



2

The Challenge

The Cost of Victory

While the first chapter dwells on the fundamentals of strategy, the second chapter of the *Art of War* focuses on the economics—human, material and financial resources—of conducting a war. In his analysis of economics, Sun Tzu encompasses the time required for victory and the emotional impact of a conflict on a people. It provides a broad outline for the understanding of the predicted as well as the unforeseen consequences of the strategic decisions that take a nation to war.

Sun Tzu deals not with the abstract, but with real-life situations, wherein the application of strategy always carries with it an inherent risk. The need is to minimise and control the risks and assure success inside a set limit of resources and opportunities while being able to stay within the bounds of fundamental strategy. The first step in this is to understand the costs of initiating a set of actions. Even the wealthiest nation cannot afford an indefinite drain on its resources and, therefore, it

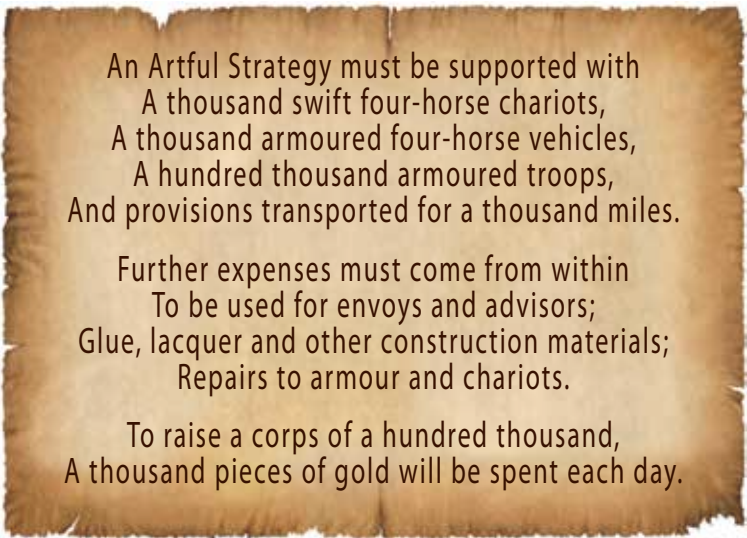
is of paramount importance to minimise the costs of war. Further, the economic and emotional support to a conflict is almost completely dependent on the will of the people, at least in democratic nations, and cannot be taken for granted.

The treatise emphasises the need to achieve rapid victory and therefore the need to formulate strategies that would assure such an outcome. From a military perspective, this aspect of the planning and execution of campaigns has gained prominence in contemporary conflict situations, especially since the end-state desired at the grand strategic or political level is becoming increasingly complex and ill-defined. Irrespective of the final objective in a conflict—more commonly now a combination of military and political aims—the military phase of the conflict must be brought to a successful closure rapidly to avoid a long-term drain on a nation's resources.

Sun Tzu also suggested that a winning strategy must take into account the ways and means by which the adversary's resources can be used in support of one's own actions. A well thought through strategy will ensure that the adversary's support system and resource base are not damaged beyond a level that permits their being reutilised with minimal effort to repair them. By doing so the total capability of the entire system—a combination of one's own and that of the adversary's—is not diminished.

This chapter deals with the considerations in formulating strategy and the major factors that must be complied with when conducting campaigns. In formulating strategy, deliberations must be carried out regarding the very high logistical costs of conducting a successful campaign, the hazards that a nation will face if a campaign does not go according to plan and the methods that could be adopted to eliminate the disadvantages that come with prolonged campaigns that move in unforeseen directions. In conducting the campaign, the leader must know the inevitable financial and resources hardship that the nation will face to be able to anticipate and eliminate the possible pitfalls during the campaign and obtain assured victory.

Knowing the Costs



An Artful Strategy must be supported with
A thousand swift four-horse chariots,
A thousand armoured four-horse vehicles,
A hundred thousand armoured troops,
And provisions transported for a thousand miles.

Further expenses must come from within
To be used for envoys and advisors;
Glue, lacquer and other construction materials;
Repairs to armour and chariots.

To raise a corps of a hundred thousand,
A thousand pieces of gold will be spent each day.

The best laid strategy will only be successful if the necessary resources are made available and the forces adequately supported. Therefore, the heavy logistical cost of conducting a campaign is a critical factor that must be considered while devising the strategy. Ideally, plans must be established first and then the necessary equipment prepared. War is like a fire—if it is not carefully controlled, it will consume all the resources of a nation before burning itself out.

The success of a strategy is critically dependent on resource availability and, therefore, the costs of implementing the strategy is one of the most important factors to be considered in its formulation. Strategy does not necessarily mean having to go to battle or war, but essentially it requires focus on improving one's own position in relation to that of the adversary. As in any other human endeavour, success in war also is a product of analysis, planning, investment and perseverance. War is, however, a resource intensive undertaking and needs to be controlled carefully to ensure that national resources are not completely exhausted in pursuing victory.

In designing the strategy, the heavy logistical and resource requirements to sustain the force at the required level should be considered. Lasting success is not easy to achieve and therefore plans should allow for long-drawn conflicts and calculate the resource requirements to sustain the conflict. The cost of victory accumulates with each battle fought and must be realistically ascertained in planning the total cost of the campaign. All campaigns, however carefully planned, expand over their execution phase in the quest

to achieve the strategic goal with the attendant escalation in resource expenditure. Once in conflict there can be no accurate prediction of the cost of victory, but neither can the conflict be abandoned at will. A narrow strategic view and attempts to limit the cost will only exacerbate the situation. The only way that such expenses can be justified is to assure victory, which is dependent on detailed analysis and planning.

Sun Tzu teaches a systematic process to calculate the cost of waging war and to cater for long-term initiatives. The resources available to every nation are limited and governments have to choose priorities for their allocation. This is much more evident in democratic nations, wherein the demand for scarce resources is always competitive and at times controversial. Essentially, there will always be conflicting demands and allocation in one sector will be at the cost of reduction in another, considering that the national resource base is always finite. Under these circumstances, expenditure on the conduct of warfare will have to be carefully explained to the population and must have their tacit approval.

Of all military capabilities, air power is the most cost intensive to develop, acquire and operate. This places an added responsibility on air force leaders to select and maintain the appropriate air power capabilities that will provide the necessary level of security to the nation. The situation is further complicated by the long lead time required to establish air power capabilities of the right calibre. In combination, the onus of responsibility on the air force leadership is ominous. On the other side of the coin, it has also to be emphasised that air power is critical to success in all contemporary conflicts and is, therefore, a crucial element in the overall warfighting capability of a military force.

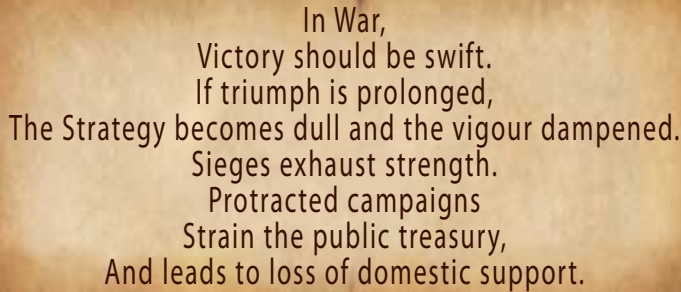
Another aspect of the cost of developing air power capabilities is the quantum of resources that need to be expended to create a cadre of professionals who clearly understand all aspects of the professional application of air power. This is once again a drawnout process and cannot be put in place at short notice or in an *ad hoc* manner. Time and experience are of the essence here, perhaps even more than the need for financial resources. The resource intensiveness of the physical assets and the need to invest wisely in long-term developmental requirements—both in hardware and human capabilities—makes air power a unique capability. This also makes it a complex capability to sustain at the necessary level of competence.

Air power is cost intensive

*Air power capabilities require a long lead time to
develop and employ effectively*

*Time and experience are essential to create a cadre
of air power professionals*

Swift Strategies



In War,
Victory should be swift.
If triumph is prolonged,
The Strategy becomes dull and the vigour dampened.
Sieges exhaust strength.
Protracted campaigns
Strain the public treasury,
And leads to loss of domestic support.

Victory is the main object in war and should be achieved swiftly. Once military operations have been launched, if victory is long in coming, the combat edge of the forces will be blunted by mounting casualties and battle fatigue. Laying siege to a fortified area will lower morale and exhaust the force. Prolonged operations in the field will strain the nation's economy and cause the force to lose support from home.

It is very clear that conducting a campaign is expensive and the cost of a campaign is directly proportional to its duration. Therefore, it is necessary to aim for the swiftest possible victories when planning campaigns. After a campaign has been launched, if a victorious conclusion is not achieved and the conflict becomes prolonged, it is certain to blunt the combat edge of the force. In war, total victory is important; and prolonged operations, like laying siege to a well-fortified adversary camp, are unlikely to achieve such a victory. Further, prolonged operations will have undesired effects both on the fielded forces and the population of the nation—the morale of the force will tend to gradually be eroded and it will become exhausted, while the general support at home for the campaign will tend to falter in the wake of the increased economic and physical turmoil that will usually result.

Air battle is not decided in a few great clashes but over a long period of time when attrition and discouragement eventually cause one side to avoid the invading air force.

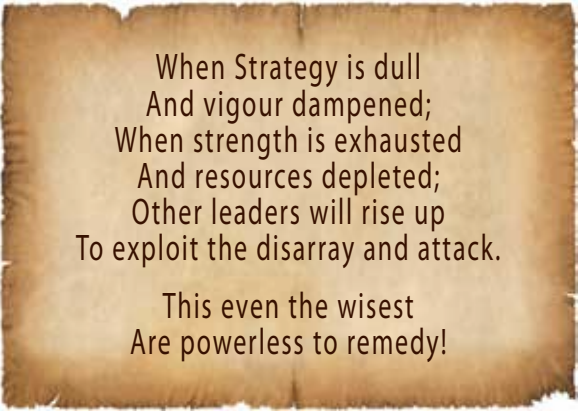
Dale O. Smith

Prolonged operations will also create detrimental effects on the overall national strength that will transcend the military sphere. Since the resource requirement to continue a campaign is very high, resources from other areas of national enterprise will have to be diverted to sustain the military effort. In the long term this situation will prove to be unviable. The end-state that is desired must be seen by the entire nation as being worth the effort and expenditure in terms of resources and personnel for it to accept the necessity to enter into a conflict. This is a paramount requirement to ensure that support for the campaign does not flag at any time. The longer a conflict lasts, the more uncertain the outcome is likely to become.

From an air power perspective, the duration of the campaign will be limited by the force's ability to sustain the required operational tempo and the ready availability of adequate resources. These two factors are critical for smaller air forces for two reasons. First, all air forces have a certain operational tempo imposed on them, even in times of relative peace. Actual operations, therefore, tend to increase this tempo and if not appropriately managed can become unsustainable for any length of time in smaller forces in terms of capabilities and personnel. Second, smaller forces are almost always functioning at or just above the critical mass. This means that when operations are undertaken their capacity for force generation are reduced. If the campaign is long-drawn, the situation might reach a stage when it will not be possible to regenerate the force-in-being at a rate that will ensure sustainability. These two factors are particularly applicable to air power because of its resource-intensive nature and the long lead times required to generate the necessary capabilities. Under these circumstances, the need to plan and achieve rapid victory in combat operations assumes critical importance.

*Availability of resources and the ability to sustain the required
operational tempo are limiting factors in air forces*

*Even in times of peace air forces maintain a certain operational tempo
Smaller air forces normally function at or just above their critical mass*



When Strategy is dull
And vigour dampened;
When strength is exhausted
And resources depleted;
Other leaders will rise up
To exploit the disarray and attack.

This even the wisest
Are powerless to remedy!

If military action does not proceed as planned and becomes protracted, it can damage the nation's overall capacity and strength, leading to unacceptable depletion of resources. When a major portion of the nation's resources are already being spent on military operations and such operations become protracted, it is more than likely that the budget will be insufficient to cover the expenses of the campaign. This situation could lead to factional challenges or civil war with alternative leadership vying for control. In extreme cases this could also lead to an attempt by another country to mount an opportunistic challenge. Even the cleverest of leaders will not be able to remedy the consequences of such a situation.

The main cause of a campaign becoming long-drawn is the unsuitability of the strategy that was adopted in the first place. Sun Tzu lists the drawbacks of a protracted campaign as the lowering of the overall efficiency of the force, the slow deterioration of the strengths that make a force invincible to a level of compromise that would ultimately deny it victory, and the drain on national resources to an extent wherein the continuation of the conflict becomes impossible. The consequence of such a situation is most likely to be a leadership struggle that could eventuate in a civil war. Further, a weakened nation with minimal resource availability is prone to being challenged or threatened by other nations that have unresolved bilateral issues with it. The need for detailed and realistic planning, particularly in relation to probable duration vis-à-vis the resource requirements for the entire campaign, is apparent in the consequences that emerge as a result of an unresolved conflict.

Seizing and retaining the initiative and never letting the adversary challenge it are the basic requirements in ensuring a short military campaign. If the initiative is lost, one is forced to fight defensive battles, which have never won a campaign. Long-term success is completely dependent on retaining the initiative throughout a campaign. Underestimation of the adversary's strengths is a major contributing factor for the loss of the initiative in any campaign, battle or mission. In this instance, strength has to be considered in its broadest sense—numbers, capability, sustainability, plans, will, morale,

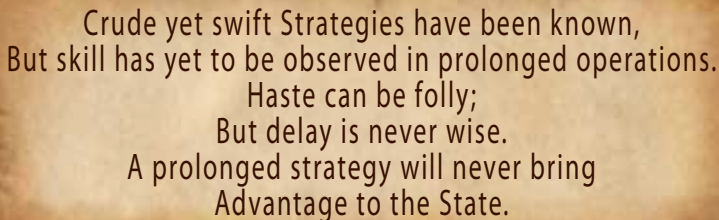
everything that makes a military force 'strong'. Careful analysis of adversary strength and weaknesses is essential to avoid underestimating their capabilities. Their strengths also become the centres of gravity of an adversary. Having the initiative, and the adversary not being able to challenge it effectively, has the added advantage of affecting the morale of both sides—one's own positively and the adversary's negatively.

Air power has the capability to neutralise identified centres of gravity in a time-critical and responsive manner. Such actions, if fully integrated with other whole-of-government initiatives, can considerably reduce the duration of a conflict and bring the adversary to the negotiating table. The characteristics of speed, reach, responsiveness, precision and lethality of air power can be carefully tailored to create the necessary effect to the desired degree to achieve strategic objectives with minimal destruction and collateral damage. While the allocation of adequate resources to ensure that the required quantum of these capabilities is resident in the force may be considered extraordinarily high, in long-term calculations it would not be anywhere as resource intensive as conducting a protracted campaign. Even small air forces must build their force structure to be able to provide grand strategic planners with this option or face gradual irrelevance.

Air power can provide time-critical responses

*Air power's inherent speed, reach, responsiveness, precision
and lethality can create the necessary effect*

*These effects can be tailored to achieve strategic objectives
with minimal collateral damage*



Crude yet swift Strategies have been known,
But skill has yet to be observed in prolonged operations.
Haste can be folly;
But delay is never wise.
A prolonged strategy will never bring
Advantage to the State.

Through history there have been instances of short and swift wars, normally supported by simple strategies; however, there have been no instances of a successful campaign based on sophisticated and skilful strategy that was

prolonged. There are no instances of a country having benefited from a protracted war. Success lies in being swift as the thunder that peals before you have a chance to cover your ears; fast as the lightning that flashes before you can blink your eyes.

Sun Tzu does not advocate being hasty in formulating the strategy, but demands that action after the strategy has been identified must be swift and decisive. In order to eliminate the hazards of a prolonged conflict, planning must be meticulous and take into account all possible risks. The execution of the actual military operations by itself must be effective and brief. Speed of action reduces the chances of a strong opposition and ensures that the initiative rests with one's own forces. There are no recorded instances of a nation having benefited from a prolonged conflict even if it was finally victorious. War must bring some benefit—economic, diplomatic, or even temporal—to the nation, which is more probable when the conflict has been brief and victory achieved with minimal expenditure of resources. The benefits that accrue with victory reduce proportionately with the length of the campaign. Further, dependent on a number of extraneous factors, conflicts of extended duration could also lead to unforeseen defeat in some cases.

The fundamental factor around which all good strategies are developed remains the overall benefit of the nation. A hastily put together strategy might be successful, especially in situations wherein elements such as surprise and overwhelming numerical and qualitative superiority of the force become deciding factors in the conflict. However, the chances of a clear victory reduce as the conflict becomes prolonged. It is of cardinal importance to align the planning of a campaign to national strategic objectives, a direct relationship that must never be allowed to become misaligned. Only by ensuring this alignment can a military campaign assure that victory will have overall benefit for the nation.

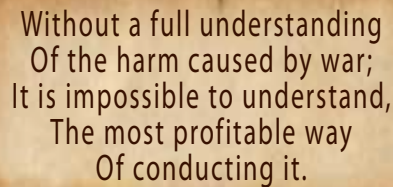
There is always a psychological dimension to the command and conduct of war with the military leadership always being under pressure to achieve swift victory. This could lead to a dilution of the steadfastness required to achieve the laid down national strategic objectives, especially if the campaign becomes even slightly longer than initially perceived. The situation can deteriorate to a state wherein the aim of the conflict is reduced purely to winning it with no consideration towards achieving beneficial objectives for the nation. Sun Tzu cautions that such campaigns are highly destructive to every nation involved. A simple way to ascertain whether a conflict is worth getting into is to analyse whether or not the nation will be stronger and in a better position after obtaining victory. This would obviously be a function of the length of the campaign, the resource availability of the nation and its willingness to sustain the campaign even if it becomes long-drawn.

In air power terms careful planning is required to ensure that sustainable air power can be brought to bear responsively to enhance the possibility of unsettling the adversary. Delay may cede the initiative. Immediate response to an emergent threat has the added advantage of initiating action while one's own resolve is still fresh. A prolonged campaign is difficult to sustain in air power terms, even for large air forces that operate under few resource restrictions. For smaller air forces this will be almost impossible. The onus of ensuring that the nation's economy is not brought under undue pressure in sustaining a campaign means that it must be planned in such a way as to restrict the need for resource intensive use of air power to the bare minimum. Control of the air must be obtained at the earliest and thereafter air power must be employed optimally without waste. At the operational level, campaign planning must take into account factors that could minimise attrition and loss. Force conservation considerations must become a standard input into all planning activities from the overall strategic plan down to the tactical level mission planning.

Rapid response has its own advantages

Smaller air forces are not able to sustain protracted campaigns

*Campaign planning must incorporate all factors that will minimise
attrition or loss and force conservation considerations*



Without a full understanding
Of the harm caused by war;
It is impossible to understand,
The most profitable way
Of conducting it.

No unfounded assumption must be made of the dangers of using military force. However, only a complete understanding of these dangers of going to war will allow the leadership to use force in the most advantageous manner to ensure victory. This will permit deriving the maximum benefit from conducting a war.

War is an undertaking full of potential pitfalls. Therefore, the risks and the costs involved in the conduct of even successful campaigns must be clearly understood and analysed

before commencing any operation. Only a clear understanding of the possibility of failure and its consequences will galvanise the force to decisive and speedy action. Every move in the conduct of a campaign involves evaluating and accepting a certain amount of calculated risk. While the future is always uncertain, deliberate planning and realistic assessment of the risks involved will almost always create a favourable situation in the field. The variables that make victory uncertain can also be made to contribute towards success in the campaign, if those variables are identified and manipulated to one's own advantage. This depends on the capability of the leadership and the force to assess and take risks that can be ameliorated before they can disrupt the course of action that has been initiated.

The strategy of war should not only be about winning the conflict, but also about ensuring that the victory benefits the nation. It is possible to win a war at such an exorbitant expense—in terms of material resources and personnel—that the nation is so weakened after victory to become incapable of any further progress. Although it is not possible to accurately predict the costs or the benefits of going to war, a realistic estimate must be carried out prior to committing a nation to war. A long-term strategy carefully developed at the strategic level of command will also alleviate and balance uncertainty at the operational level. This would be an optimum strategy of war. By enforcing the appropriate strategy it will be possible to absorb minor setbacks and prevail in the long term, thus bringing overall benefit to the nation. This can only be done when there is an appreciable understanding, at the highest levels of military and civilian leadership, of the dangers of taking a nation to war.

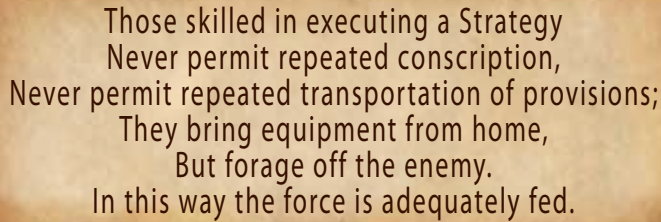
Strategic air attacks, carried out with precision and proportionality, are aimed at neutralising the adversary's centres of gravity with minimal collateral damage. The planning of the air campaign must take into account the negative repercussions of attacking incorrectly identified centres of gravity and also the impact of collateral damage on the overall moral aspects of the conflict. Such a risk assessment of actions being conceived will only be realistic if a holistic analysis of the effects being created is carried out. This in turn is dependent on an in-depth understanding of the damage that every weapon system can cause and their further cascading secondary and tertiary effects. Of all military capabilities, air power is the most complex to understand and, therefore, the one that should be most carefully analysed before being employed. Effective air campaign planning will have to encompass all these variables.

Strategic air attacks can neutralise centres of gravity with precision

Collateral damage always has a moral dimension to it

Air power is the most complex form of military power

Using the Opponent's Strength



Those skilled in executing a Strategy
Never permit repeated conscription,
Never permit repeated transportation of provisions;
They bring equipment from home,
But forage off the enemy.
In this way the force is adequately fed.

Those sophisticated at employing military force neither draft additional conscripts nor requisition provisions repeatedly. In the conduct of a campaign, armaments are taken from the homeland and provisions from the enemy. Before planning to mobilise forces to embark on a campaign, it must be determined whether the enemy can be successfully attacked, whether one is capable of victorious battle, and only then should troops be raised.

War puts a great deal of burden on the State and this should be lightened by shifting as much of it as possible to the adversary. Planning must be oriented towards deciding what strategy has the greatest chance of success in the long term and adapting that strategy to suit the requirements of the campaign. One of the major considerations would be the economic factor—to keep the requirement within the capacity of the nation and to ensure that ongoing expenses are kept to the barest minimum. Sun Tzu advocated ‘making use of war’ to benefit the nation by strategic thinking, rapid action and ensuring that any challenge by the adversary would be untenable in economic terms.

Limitations are troublesome, but they are effective. If we live economically in normal times, we are prepared for the times of want. To be sparing saves us from humiliation. Limitations are also indispensable in the regulation of world conditions. In nature there are fixed limits for summer and winter, day and night, and these limits give the year its meaning. In the same way, economy, by setting fixed limits upon expenditures, acts to preserve property and prevent injury to the people.

The I Ching
China, 8th century BC

The strategy that is being advocated is one of adequacy of resources without overburdening the State. It is not necessary to build up large inventories and stockpile expensive weapon systems, if proper strategies can be formulated and the resources optimally employed. Critical requirements should be calculated in terms of the battles, campaigns and wars that are to be fought, and procured without getting the nation embroiled in economic problems. In the contemporary security environment, military forces should have expeditionary capabilities and should not have unnecessarily heavy equipment to transport. However, there is still a need to have adequate transportation capability to ensure that deployed forces are logistically sustained. This would ensure that they are capable of providing a fast response to emerging situations and new challenges.

The capability to wage war with the minimum effort and least strain on the nation's resource base is dependent on planning the campaign and ensuring that proper strategy is being employed. This is a complex joint campaign issue with special importance to air power. Airlift capabilities are always at a premium and, therefore, it is of paramount importance that utilisation of available airlift is fully aligned with the campaign requirements of the deployed force. Care must be exercised to ensure that airlift requirements are not unnecessarily exaggerated and that available effort is not underutilised. While provisions may be obtainable locally in the theatre of operations, it will be necessary to carry the warfighting equipment from home base. The reach and responsiveness of air power, not only in providing combat power but also in ensuring the adequacy of the logistics chain, can be successfully leveraged to ensure that forces are in theatre with sufficient equipment much faster than if they were to be deployed by land or sea. Logistics planning and ensuring that airlift requirements are fully met are critical to the success of all military operations and particularly critical for expeditionary operations.

C-17s in Iraq

There have been reports that a large number of C-17 aircraft bringing logistic support to the conflict in Iraq (the aftermath of the US-led invasion of Iraq in 2003) from continental United States have been only half full. This is a clear case of inadequate logistic planning and control of airlift assets, unwarranted increase in airlift demand and ignorance of the waste involved. The fact that this has been reported only after so many years of conflict itself should be of concern to the strategic planners of the operations. The situation may be sustainable for a force as large as the US Air Force, but the colossal waste involved and the acceptance of it at all levels of command for it to have carried on for so long is indicative of a systemic failure of the force as a whole to appreciate the importance of airlift, and perhaps the fortunate position that the US forces have as a result of ready availability and access to it. Irrespective of the size of the transport fleet, lackadaisical use of the assets will finally exhaust the resource and bring the force to a situation wherein airlift availability could become precarious.

*Utilisation of airlift assets should be aligned with the
campaign requirements*

*Air power's reach and responsiveness ensure adequacy
of the logistic chain*

*Logistic and airlift planning is critical for success of
all military operations*

A nation drains the public coffers
And impoverishes the people
Supplying the force at a distance;
Where the force is close at hand
Prices rise,
High prices exhaust the wealth of the people,
And taxes and levies are not paid.
As the nation's wealth is depleted,
Its strength is compromised;
War leaves households destitute.

Sixty percent of public coffers are spent on
Broken chariots and worn-out horses;
Armour, arrows and crossbows;
Spears, shields and mantelets;
Draft animals and heavy wagons.

Therefore,
Clever leaders feed the force off the enemy.
One container of enemy provisions
Is worth twenty carried from home;
One unit of fodder
Is the same as twenty units from home.

*A country will be impoverished by distant battles that require provisions to
be transported long distances and there will be inevitable financial hardships.
Even when the force is closer to home, there will be an increase in domestic
prices which can drain the wealth of the local population who may not then be*

able to pay taxes and levies. This, in turn, will affect the public coffers, exhaust a nation's resources and compromise its strength. War can consume the entire wealth of a nation and impoverish it completely. Therefore, wise commanders will actively consume the enemy's provisions—benefiting their own forces and setting the enemy back.

The capacity to overcome the costs incurred in transportation because of the geographic distance of the theatre of operation from one's own home base is crucial to success because of the inescapable need to sustain the deployed forces. In these circumstances, prior positioning, if possible, becomes a critical advantage. The degree of difficulty in transportation of personnel and material and maintaining communications is directly proportional to the distance involved. This automatically means that, in case the chosen operation is at a distance, sufficient preparation to sustain it for the required duration must be made. Distance is the most basic barrier to effective entry into a theatre of operations and even a small opposing force, when operating close to its support base, can bring to bear disproportionate pressure on a much larger and capable force entering a distant theatre. Conducting a campaign far away from one's own nation is expensive and can turn into a debilitating drain on the nation's economy. Further, the presence of the forces in a distant nation, while bringing money into one's own domestic economy, also tends to inflict inflationary pressure on it. Under all circumstances it is best to operate in a theatre sufficiently close to home base, but far enough outside one's own country to avoid direct attack on the homeland.

The concern here is of the broader economy of the nation and the hardships that an extended campaign brings on it. As a corollary, local conflicts can be easily influenced by minimal movement of troops and the disadvantage of distance will be felt by the opposition. In approaching a conflict at a distance it may be more prudent to assess the costs by punitive expeditions rather than by committing fully to the proposed campaign. Even when the punitive campaign is a success, a cost-benefit analysis must be undertaken before any further larger commitment is made. The costs of a small campaign are more easily absorbed, even if it has resulted in failure. However, it has also to be borne in mind that the cost of losing a conflict is always higher than winning it and, therefore, once committed, withdrawing from a conflict before achieving complete victory is not a viable option.

From an economic perspective, there is a tendency to assume that if sufficient resources are employed in a campaign, success is certain. However, Sun Tzu cautions that success is never certain and, therefore, the tenet that success should ensure economic viability for the victor should be analysed carefully. 'Feeding off the enemy' actually refers to ensuring that all successes must be able to better the economic conditions of the nation. This can be achieved by winning over the adversary's support base and allies. The most valuable resources are the ones that have been taken from the adversary. Sun Tzu advocates that success should not only sustain the troops in battle, but also enhance the national economy when the conflict is viewed holistically.

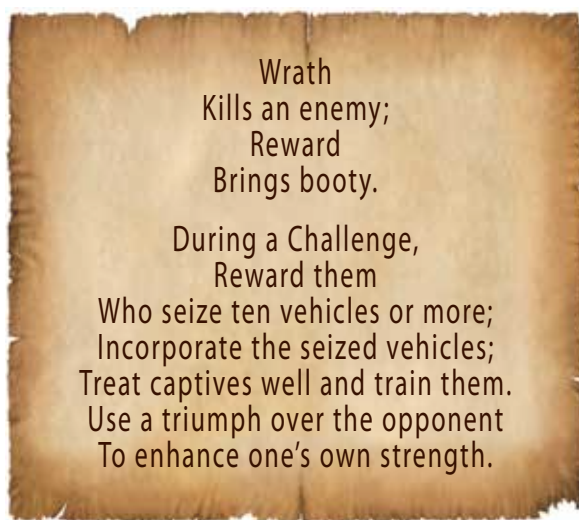
In this stanza Sun Tzu provides various calculations regarding the expenditure involved in procuring replacement equipment and for repair of worn-out weaponry. He also provides an approximation of the high value of provisions and animal fodder captured from the adversary in expeditionary operations. However, these calculations are only indicative of the resource base necessary to wage a distant campaign and should be taken as an exhortation to undertake similar calculations for contemporary conflicts, as part of the detailed campaign planning process.

A major campaign conducted at great distance from home base can stretch even the largest airlift capability. The strain of keeping forces supplied increases with the duration of the conflict and the capability of the adversary. Further, the airlift assets themselves can become the centres of gravity and the adversary can turn the tide of the conflict by targeting them in a focused manner. All military campaigns consume the economic resources of a nation at a very high rate, but a campaign sustained by airlift alone can rapidly become an untenable burden even for very large and robust economies. Under these circumstances, the chances of victory in the conflict recede with the passage of time. In contemporary conflict the concept of 'living off the land' is not viable for a number of reasons. The need, therefore, is to diminish the support base of the adversary by diplomatic, economic and if necessary military means sufficiently to make any viable opposition improbable. In other words, the battlespace must be shaped to diminish adversary capability and enhance one's own advantages.

Distance can stretch even large airlift capabilities

*In expeditionary operations, airlift assets themselves can
become centres of gravity*

*Shaping the battlespace through national power elements will
enhance the chances of victory*



An aggressive force can kill the enemy and rewards for capturing the enemy's valuable goods will make the force snatch the advantage. During conflict forces must be motivated with high morale and promise of rewards. By using the captured enemy's warfighting material, one's own strength is increased. Captured soldiers should be treated with magnanimity so that they are prone to change sides. This is gaining strength through victory.

The argument here is that a force can either be destroyed by actually killing them or by starving the adversary of resources. Highly motivated troops are aggressive in battle and difficult to defeat. They can bring victory by annihilating the adversary. There are two ways to defeating an adversary and increasing one's own resources—by cutting off adversary supply and thereby achieving a comparative advantage or by capturing the adversary's resources and thereby having double the advantage. An added impact of capturing the resources is that the adversary is weakened and is unlikely to become a future opponent, at least in the near term. Although the larger aim of the campaign is ultimate victory, the focus in this stanza is on getting resources from the adversary. Sun Tzu advocates rewarding personnel who capture adversary assets and using the assets as one's own resources after appropriately incorporating them into own forces.

The efficiency of the campaign for resources is one of the factors that impact the eventual success of a conflict. Positioning and dominance are critical in Sun Tzu's system of strategy. Both are heavily dependent on the success of the resource campaign. The supply lines and sources of food and water as well as any other resources that contribute directly to the adversary's ability to continue the conflict should be the primary target at the initial phases of the campaign. In turn, these become the places or areas that the adversary must defend. Identification of the source and concentration of adversary

resources is critical to the success of all attempts to disrupt or neutralise them. Sun Tzu advises a cycle of identification, planning after determining the weakest target, attacking with overwhelming force and rewarding those who have performed creditably after victory. Such triumphs must be adequately advertised and made public to weaken the psychological strength of the adversary.

In contemporary air power application this process would involve identifying the centres of gravity, planning and then carrying out attacks using proportionate and discriminate force, and assessing the effect that has been created. At the operational level, the identification of the centres of gravity and the prioritisation required to neutralise them would be akin to the famous Warden's Five Rings theory. Although Warden identified the adversary command and control elements as the first priority for targeting, in terms of a campaign waged to deny the adversary sufficient resources to continue the conflict, the identification of supply chains, supporting industry and food storage facilities as centres of gravity in Sun Tzu's theory is directly reflected in Warden's rings. Essentially Sun Tzu advocates not purely identifying the centres of gravity, but the analysis of target systems to determine the weakest link in them and the need to prioritise the targets for attack taking into account their relevance to the campaign. This process is still the overarching methodology of target selection in the conduct of efficient air campaigns.

Centres of gravity should be identified and analysed for targeting

*Lethal force must be employed proportionately
and with discrimination*

Target selection will depend on the strategic objectives of the campaign

The Essence

In War
Prize victory;
Among Strategies,
The best triumph is a swift one.

The leader who understands Strategy
Presides over the destiny of the people;
And guarantees the nation's security.

What is valued in war is a swift victory, not protracted conflict. Persistence is not profitable. Therefore, the general who understands war is the arbiter of the fate of the people and the destiny and security of the nation.

Swift victory must be the essential outcome of a war. From the standpoint of strategy, employment of forces to ensure a short and effective campaign is the optimum. The commander who understands this reality will always ensure the wellbeing of the people and the security of the nation. In the conduct of operations it is necessary for the force to realise the commander's intent accurately and act in accordance. Wartime leadership is fraught with the danger of becoming autocratic and, therefore, it is necessary to commence the war effort with a strong economy capable of meeting the commander's demands. The key to winning campaigns at affordable costs lies in the knowledge of the commanders and their skill in applying it in the effective employment of troops.

Warfare is like hunting. Wild animals are taken by scouting, by nets, by lying in wait, by stalking, by circling around, and by other such stratagems rather than by sheer force. In waging war we should proceed the same way, whether the enemy be many or few. To try simply to overpower the enemy in the open, hand to hand and face to face, even though you might appear to win, is an enterprise which is very risky and can result in serious harm. Apart from extreme emergency, it is ridiculous to try to gain a victory which is so costly and brings only empty glory....

Byzantine Emperor Maurikios 539—602 AD

This stanza distils the central theme of the chapter. In a cyclical manner it describes the need to make victory profitable, rather than just winning the battle or campaign; this is achieved by an accurate cost-benefit analysis and control of own expenditure; to ensure cost-effectiveness the campaign must be swift and short but victorious, for in defeat there is no gain. Sun Tzu repeatedly emphasises the centrality of knowledge as the key resource for a successful commander. This knowledge is an overarching understanding of available resources and the adversary's centres of gravity, and the optimum manner in which they can be neutralised. The campaign has to be managed at the appropriate economic level to ensure that the nation and, by extension, the people do not suffer.

Victory and swiftness in achieving it with minimal expenses are the two critical factors to be considered in the planning and execution of all campaigns. This is even more important in the case of air campaigns because the assets and resources available will be extremely expensive and almost always in short supply. In the employment of air power, proportionality and discrimination are two of the most important considerations in contemporary conflict—especially when lethal force is being applied. Ensuring these two factors are not compromised needs accurate and timely intelligence regarding the targets and their defensive systems. Even under circumstances wherein the lethal force emanates from sources other than air power, intelligence gathering, analysis and dissemination is one of the more basic and ubiquitous roles of air power. Intelligence, surveillance and reconnaissance (ISR) is normally most effective when carried out from the air. Sun Tzu lays a great deal of emphasis on the knowledge and skill of the commander in the conduct of the campaign. In a contemporary air campaign scenario it translates to professional mastery of air power resident in the commander and his ability to employ air power capabilities in the most efficient manner to achieve campaign objectives.

Air campaign planning and execution must be aimed at a swift victory

*Air power is extremely resource intensive and its
employment must be well crafted*

*Airborne ISR capabilities provide commanders with the necessary level
of 'knowledge' in the conduct of the air campaign*

Conclusion

This chapter is primarily concerned with the cost of winning a war and perhaps air power is particularly impacted in this calculation. Sun Tzu very clearly states that merely winning the war is of no use, unless the nation has benefited for that victory in some form or the other. The first step towards achieving this aim is to win a swift victory, meaning the expenditure of resources is minimised, thereby increasing the ratio of benefits. Although not explicitly spelt out, such benefits need not always be in terms of resources or finances, but could also have an underpinning of strategic advantages that accrue from victory, which are non-quantifiable.

Air power—its acquisition, development and sustainment at the required level—is a complex capability for three primary reasons. First, it needs a long lead time to develop because of the technological sophistication inherent in its assets and it also requires a highly developed technical support base to sustain it at the desired level of competency. Second, it is expensive to acquire and extremely resource intensive to maintain and employ effectively. Third, even after the necessary hardware/platforms/assets have been acquired, they are only as effective as the personnel operating them. Building a dedicated cadre of professionally competent personnel, in an air power scenario, is a hard and costly road that takes a great deal of time and experience to bring to a reasonable level of performance.

Air power contributes directly to the objectives of a joint campaign, vis-à-vis the cost effectiveness of the operations, in a number of ways; three of them stand out more prominently than the others. First, is limiting collateral damage. In contemporary conflict there is an unbreakable rule to limit collateral damage while applying lethal force. Air power has the capability to carry out precision attack on designated targets with sufficient proportionality and discrimination to almost always avoid even limited collateral damage. Second is provision of knowledge dominance. The conduct of a campaign is dependent on the commander's knowledge level—a synthesis of information, analysis, experience and intuition—which is ably supported by airborne capabilities. Such knowledge also leads to the third element that is correctness of target selection. Once again, this is a function of information and correctness of intelligence combined with its alignment with the strategic objectives of the campaign.

Air power, when employed optimally, can in the long term be a resource-efficient force that provides the task force commander with a greater number of options to address challenges. The combination of its speed, reach and responsiveness provide the capability to carry out time-critical precision strikes on fleeting targets of opportunity. In the contemporary conflict scenario this is a coveted capability that could potentially reduce the total expenditure if the target that is neutralised is of sufficiently high strategic importance to the adversary. In expeditionary operations, which are becoming more common amongst the forces of the developed world, airlift capabilities are critical to

success. While expenditure per unit load of warfighting materiel and provisions may be high in airlift as compared to surface transportation, the speed, reach and penetration capabilities of airlift that will sustain a surface force far away from home base cannot be quantified in dollar terms. Overall, expeditionary operations are better served by airlift than being supported by surface-based lines of supply for reasons of security and a much higher degree of assurance.

Even though air power can be carefully tailored to be cost-effective in the long term, there are two important factors that must be crafted into the campaign plan to ensure that its employment is optimised. First, while it can be cost-effective in the long term, air power is resource-intensive to maintain and, therefore, it is necessary at the strategic level of planning to be cognisant of the finite quantum of air power that would normally be available. This would also have a salutary effect on the ability of the force to sustain the operations at the required level of operational tempo for desired timeframe. Miscalculations in this area can have disastrous consequences for the entire campaign. Second, all air forces maintain a certain operational tempo at all times, irrespective of the state of security of the nation and therefore actual combat operations will impose a further increase in tempo on the force. Under these circumstances, smaller air forces might be operating at their critical mass, meaning that they would not have any reserve capability to increase the tempo when necessary. This is a factor that must be carefully considered in the overall campaign plan so that there are no untenable premises made in it regarding air power capability to control the tempo of operations at will.

It is agreed that air power is resource-intensive, but skilful employment of this coveted capability—leveraging its positive characteristics to overcome the slightly weaker areas—can reduce the cost of war by ensuring a swift victory.

In the utilisation of a theatre of war, as in everything else, strategy calls for economy of strength. The less one can manage with, the better; but manage one must, and here, as in commerce, there is more to it than mere stinginess.

Carl von Clausewitz 1780—1831



3

Developing Strategy

An Effects Based Approach

Sun Tzu believed that lasting victory could only be achieved by the employment of a highly developed and nuanced strategy, one that acted on the cognitive domain of the adversary. Many years later, Carl von Clausewitz voiced the same opinion in his book *On War*, in which he defined war as 'an act of violence intended to compel our opponent to fulfil our will'. The essence of war, therefore, is clearly seen as altering the will of the adversary to align with one's own. Sun Tzu explains that brilliant leaders will be able to achieve this without having to resort to conflict.

Strategy, when planned and executed with great sophistication, ensures that victory is clearly obvious at the very outset of the conflict and is demonstrably inevitable. Such a strategy can only be conceived with the complete understanding of one's own capabilities and realistic evaluation of the adversary. Such a comparative analysis will always ensure that precipitous

actions are not initiated, even at the tactical level, for such actions carry the inherent risk of leading the force to overall defeat.

This chapter discusses the issues that must be considered during the campaign planning process. In bringing together the relationship between the military and national leadership, national unity of purpose and security focus, Sun Tzu enunciates the contemporary concept of a whole-of-nation approach to national security. The central theme of the chapter is that of holistic unity and focus within a nation, in the absence of which even very large and outwardly powerful nations are realistically in a weakened state. A nation must be able to create the necessary effects—in the physical and/or cognitive domain—on the adversary, as required, in order to triumph in conflict.

While size does matter in military terms, cohesion within the force is more important to victory. The combination of the right strategy, cohesion or unity within the force as well as within the nation, and focus on achieving the strategic objectives, is almost unbeatable in conflict. Sun Tzu has described the various strategies that could be adopted in relation to the size and capability of the adversary, very clearly emphasising the need for a realistic assessment of comparative strengths. It is necessary to identify beforehand the conflicts that can be won and the ones that cannot be, and therefore, should not be undertaken.

The development of appropriate strategy and efforts to bend the will of the adversary, by creating effects without conflict, if possible, are contributory factors in the broader deterrence security stance of a nation. However, national security demands that the military be capable of offensive actions when required. Sun Tzu defines offensive actions as moving into adversary territory but cautions that, although the ultimate aim of the resulting conflict should be total victory, it should be obtained while ensuring minimal conflict. The need to achieve victory without conflict and to restrict to the minimum the duration and intensity of conflict if they have to be fought is a recurring theme in the treatise.

One part of the chapter deals with forms of attack at the operational and tactical level, in terms of their probability of success, and discusses the concept of asymmetry that can be directly translated to the contemporary conflict scenario. A number of other factors that are listed also have direct relevance to the irregular wars currently being fought in different parts of the world. The environment within which the conflict will be conducted must be studied in depth and correlated with the assessment of the comparative strengths of the antagonists to formulate the strategy that is most likely to succeed.

Leadership at the highest levels also has a significant impact on the development of strategy. The most effective leader will be the one that can triumph over the adversary with minimal disturbances to the nation's stability, economy and resource base. In order to achieve this it is necessary for the leader to have complete awareness of the overarching resource requirement to achieve victory. Further, once a campaign has been launched, there must be no political interference in its conduct at the tactical, operational or even strategic levels. The inference here is that the civil-military relationship is sound, broadly

based on mutual trust and cooperation and, therefore, satisfactory pre-conflict discussions would have already been undertaken.

In democratic nations all wars must have bipartisan support from the government and the opposition. Politicising a conflict, due to domestic compulsions, will undermine the national support for the war and can lead to unforeseen results, both within the nation and outside. It might also create the opportunity for an adversary to exploit the political schism further to divide the military and civilian leadership with disastrous consequences for the nation. Sun Tzu cautions against any division in the leadership of a nation at the highest level at all times, especially when contemplating or conducting military campaigns.

Strategy is more than a science: it is the application of knowledge to practical life, the development of thought capable of modifying the original guiding idea in the light of ever-changing situations; it is the art of acting under the pressure of the most difficult conditions.

Helmuth von Moltke, 1800—1891

Engaging the Entire System

In the execution of an Artful Strategy—
Capturing the enemy country intact is ideal;
Destroying it is inferior.
Capturing an army, a regiment,
A company or a squad intact is ideal;
Destroying them is inferior.

Generally in war the best strategy is to capture a state intact rather than destroy it. Similarly, the army or parts of it should also be captured intact, whenever possible. The best policy is to use strategy, influence and the trend of events to cause the adversary to submit willingly. The primary deliberation in strategy should be based on the understanding that destruction is an inferior option to capturing an asset intact.

Sun Tzu starts the chapter by emphasising the importance of strategy and redefines the concept of strength. Size and strength are not synonymous and large forces can be defeated by numerically smaller forces by adopting the correct strategy. The primary aim of strategy should be to establish the best and safest option to attain victory. In war it is best to keep the adversary nation—which includes the geographical entity as well as all the resources—intact so that after capture the resources can be utilised to one's own advantage at the opportune moment. Destroying the enemy nation will not bring any advantage but, on the contrary, provoke partisan reprisals from the defeated forces. There is a further danger that such actions, in turn, could degenerate into a fully-fledged irregular war, especially if the adversary nation has external support. Similarly, Sun Tzu goes down the chain in terms of importance to say that to capture an army, regiment, company or squad intact is always better than to destroy them. This is the highest level of an effects-based campaign. However, by accepting that destruction is an inferior option, Sun Tzu is also accepting that in situations where destruction is the only way to obtain victory, there is no other option but to choose it as the optimum course of action.

The best victory is, through overall planning and sophisticated strategy, to cause the adversary's fielded forces to surrender that would lead to the submission of the state itself. Although scale—that is differences in the size of the two forces, especially if they are large—can become a factor of importance and requires careful study while formulating strategy, it should not be the fundamental focus of strategy development. Sun Tzu indicates that the winning strategy is a balanced combination of unity of purpose, concepts of operations and strength of the people oriented towards the capture of adversary assets, which is always a better option than destroying them.

From a military perspective, the opportunity to use enemy capability makes immense sense. In Sun Tzu's time it was normal practice to absorb enemy troops and resources into one's own force and thereafter to employ them, as compared to the contemporary scenario. This does not automatically mean that destruction of adversary resources is the optimum way to conduct a war in the currently prevailing conditions. Further, it must be borne in mind that irrespective of the strength of the adversary force in comparison to one's own, combat operations will always inflict a certain amount of destruction on one's own forces as well—however miniscule. In the past few decades, a changed context in the conduct of war has created new imperatives to avoid destruction. Other considerations—the onus of rebuilding the destroyed nation and the unacceptability of non-combatant casualties, to list two major factors—preclude the implementation of any strategy that leans, even a little bit, towards the destruction of adversary assets. The ability of air power to create the necessary effect, both by lethal as well as nonlethal means in the application of force, is an important capability under these circumstances. Strategic air strikes, carried out with accuracy and discrimination that create proportional damage to vital areas, can force the adversary to reconsider their belligerence and be persuasive enough to edge them along towards submission. In addition to this, a strategic strike will also be

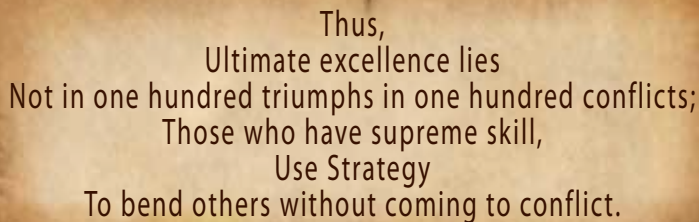
a 'sheathed sword', a demonstrated deterrent capability indicative of the destruction that could be brought to bear if necessary.

A certain person said the following. There are two kinds of dispositions, inward and outward, and a person who is lacking in one or the other is worthless. It is, for example, like the blade of a sword, which one should sharpen well and then put in its scabbard, periodically taking it out and knitting one's eyebrows as in an attack, wiping off the blade, and then placing it in its scabbard again. If a person has his sword out all the time, he is habitually swinging a naked blade; people will not approach him and he will have no allies. If a sword is always sheathed, it will become rusty, the blade will dull, and people will think as much of its owner.

Yamamoto Tsunetomo 1659—1720
Hagakure: The Book of the Samurai

Air power can create effects through both lethal and nonlethal means

*Air power also contributes significantly to the
deterrence strategy of a nation*



Thus,
Ultimate excellence lies
Not in one hundred triumphs in one hundred conflicts;
Those who have supreme skill,
Use Strategy
To bend others without coming to conflict.

*Those who win every battle they fight do not demonstrate the acme of skill.
Supreme excellence lies in the employment of strategy to compel the enemy to
change their will to our preference without fighting.*

This stanza is an idealistic desideratum. In practical terms, where conflict has already been joined and the adversary is as aggressive as one's own forces, this would be an extremely simplistic, not to say impractical, suggestion. If practised indiscriminately, it could even bring on catastrophic defeat. Therefore, the concept of not joining combat at all but using nonlethal means at the disposal of the state and commander to change the will of the adversary may not always be the best policy and have to be practised contextually. The concept is more complex and nuanced than the words indicate. Sun Tzu's aim is to undermine the natural proclivity of a nation to exercise its military power in conflict in the pursuance of national security. It is implied that conflict indicates the failure of the nation's security strategy at the highest level. Further, it is very clear that long-term triumph and lasting stability do not come with battlefield victories, however easily won. This is as true in the contemporary security environment as it was in Sun Tzu's time. Conflict is destructive for all parties involved and every participant emerges from a conflict—irrespective of the final outcome—diminished in all aspects compared to when they commenced.

Sun Tzu is advancing the concept that, while the military capability required to win battles and campaigns must not be compromised, the highest skill in exercising the art of strategy will be to use all elements of national power to create an effect that will thwart potential adversaries from initiating conflict. This is the fundamental principle of deterrence—situating one's own national strategy in such a way as to discourage others from contesting one's position. Taken further, the concept not only discourages adversaries from challenging one's own position, but also encourages them to surrender the position that one desires, even if it means that the adversaries have to make unsavoury adjustments to their strategy and position. Such a situation can be achieved if it can be clearly demonstrated to the potential adversary that the cost of conflict will be far more than the advantages that they would gain from competing in or even winning the conflict. The essence of this stanza, as idealistic as the concept may be, is to establish the importance of deterrence. In contemporary terms this means the pursuit of national security objectives through diplomatic and economic initiatives, and the exercise of other national power elements, while maintaining a credible military capability with a demonstrated will to employ it decisively if and when necessary.

The strategy of deterrence is not new and neither has it lost its significance in state-on-state relationships. However, the contemporary conflict scenario does question the relevance of the concept, especially when an increasing number of combatants owe allegiance to non-state entities. Even under these conditions, deterrence can be made to work if the consequences of any action initiated against a nation can be demonstrated to be overwhelmingly disadvantageous to the perpetrator. The reaction could be diplomatic, economic or military but must be applied within a well thought through national strategy based on creating the necessary effects, developed with complete understanding of the adversary. In recent times, there has been a marked tendency within democratic nations to employ their military forces as the first choice option in pursuing a deterrent

strategy. However, for it to be fully effective as a deterrent capability, military power should only be employed as the last resort, and that too only after all other avenues of deterrence have visibly failed.

In contemporary security scenarios it may be necessary to demonstrate higher strategic intent by punitive tactical actions rather than the actual employment of lethal force. Air power is well suited to carry out such 'show of force' missions with great effect. Air power can also carry out strikes in a time sensitive manner with accuracy and deny the adversary—especially when they are diffused in their cadre with no fixed bases or assets—the asymmetry that they use to increase the odds in claiming victory in battle. Although such actions cannot be strictly measured for their effectiveness, and it can be debated whether or not such missions are really non-combat activities, in the contemporary security environment this is as close to staying away from conflict as can be achieved. There are a number of factors that influence such situations—the adversary is stateless and not well defined; they do not adhere to time honoured rules of combat; the omnipresent media always tends to bias arguments against the state, even for imagined transgressions; the repercussions of losing the battle, campaign and war is far too high for the democratic nations of the world to bear; and in the current socio-political and economic scenario a nonlethal show of force is often assumed to demonstrate a nation's weakness and/or its inability and reluctance to take a strong stand. Punitive air strikes—of great accuracy and with devastating results—therefore, assume great importance and are critical to achieving Sun Tzu's goal of bending the will of the adversary without having to enter conflict.

Colonial Air Control – The RAF in Somaliland

Following victory in World War I, Britain had to incorporate and administer the mandated territories of the defeated German and Ottoman Empires into its own expanding Empire. However, Britain had also been weakened by the years of war and had to look at fresh economically viable options, other than the use of surface forces, to 'police' the new territories. The concept of employing aircraft to do this role evolved from this necessity.

The use of RAF aircraft in these duties spawned three new air power terms. The first, *Air Control*, referred to those operations undertaken to defend a particular region of the Empire. *Air Policing* was the employment of the RAF aircraft to provide internal security for a particular region and the last, *Air Substitution*, was the use of aircraft to replace other types of military forces in the role of imperial defence.

cont.

Although RAF aircraft were used in the Third Afghan War (1919—1920) in the Indo-Afghan border to control unrest, it was in Somaliland that it was conclusively proved that aircraft could independently and effectively defeat native rebellions. The operation against the 'Mad Mullah' provided the blueprint for subsequent air control campaigns in Iraq and elsewhere.

Mohammad bin Abdullah Hassan (named 'Mad Mullah' by the British) had been leading his Dervishes in rebellion against the British colonial authority in the Horn of Africa since early 1890s. In 1918 he captured a coastal fort and the Colonial Governor decided that it was time to do something, asking the Colonial Office for assistance. Britain at that time was under budgetary, social and political constraints and, therefore, a proposal by the Chief of the Air Staff, Hugh Trenchard, supported by Winston Churchill, at that time the Minister for War and Air, to use aircraft at a much lesser cost to accomplish the task was approved.

An RAF unit, named 'Z Unit' was deployed to Berbera in December 1919 and, starting 21 January 1920, proceeded to bomb, attack and pursue the rebels across the country and into the borderlands where the 'Mad Mullah' died, ending the rebellion in a few weeks. This success in Somaliland was seen as indisputable proof that aircraft were more economical than ground forces. This set the stage for the RAF to take on the mission of 'policing' the Empire.

The use of aircraft, to control a rebellious population without having to endanger ground forces is neither new nor impractical.

Air power can carryout nonlethal 'show of force' missions with great effect

***By carrying out time sensitive strikes, air power can neutralise
the asymmetry of irregular forces***

***Accurate and devastating punitive air attacks can create the necessary
effects for the adversary to withdraw from a conflict***

The highest form of warfare
Is to strike while schemes are being laid.
The next best—to thwart Alliances.
The next best—to attack armies.
The lowest form of warfare
Is to attack Fortified Areas.
Siege warfare
Is an Art of the last resort.

In a siege:
Three months are needed to assemble
Armoured vehicles, siege weapons, tools and talent;
Three months more to position a gate in the wall.
Furious leaders will not triumph,
But will order forces to swarm, ant-like,
Sending one in three to their death —
And still the Fortification will not be uprooted.
This is the catastrophe of siege warfare.

In military operations foiling the opponent's plan and attacking their intent is the ideal strategy. It is easiest to strike successfully when the opponent is still in the process of initiating war plans. This is winning by intelligence. The next best is to attack and disrupt the adversary's alliances while ensuring one's own alliances are strong—isolating the enemy while increasing one's own strength. This is winning by intimidation. The next best is to attack the enemy's fielded forces, clearly understanding that battle means attrition to both sides. This is winning by fighting. Attacking a fortified area, that is the strongest line of adversary defence, is a last resort. In such an attack preparation time is high and one-third of the force is likely to be casualties. Yet the area will not be captured. There is no victory.

In war, a pre-emptive strike results in a disproportionately high level of damage caused to the adversary, both physically and in terms of disrupting enemy plans of attack. Surprise will enhance the effectiveness of such strikes. There is also the possibility of being inside the adversary's decision-cycle if the attacks are carried out before their plans are matured. Pre-emptive strikes need not always be physical and can be mounted by using the softer elements of national power to target the enemy intent in order to try and change it without actual battle. In combination with Sun Tzu's injunctions in the previous stanzas, this line of action would be the ideal strategy to be employed. The next best option is

indirect and, once again utilising all elements of national power, aimed at isolating the adversary from its allies. This targets the strength that comes from unity and focuses on diluting the effectiveness of alliances and coalitions by both overt and covert means. Overt means are attacks, or threats of attack, on potential allies and collaborators of the adversary to intimidate them. Covert means are the use of diplomatic and other means to stop assistance—direct or indirect—being provided to the adversary. In pursuing this course of action, particular attention must be paid to maintaining one's own alliances and coalitions in good order, inviolate from adversary attempts at disruption.

During this survey one impression became increasingly strong—that, throughout the ages, effective results in war have rarely been attained unless the approach has had such indirectness as to ensure the opponent's unreadiness to meet it. The indirectness has usually been physical, and always psychological. In strategy, the longest way round is often the shortest way home.

More and more clearly has the lesson emerged that a direct approach to one's mental object, or physical objective, along the 'line of natural expectation' for the opponent, tends to produce negative results. The reason has been expressed vividly in Napoleon's dictum that 'the moral is to the physical as three to one'. It may be expressed scientifically by saying that, while the strength of an opposing force or country lies outwardly in its numbers and resources, these are fundamentally dependent upon stability of control, morale and supply.

To move along the line of natural expectation consolidates the opponent's balance and thus increases his resisting power. In war, as in wrestling, the attempt to throw the opponent without loosening his foothold and upsetting his balance results in self-exhaustion, increasing in disproportionate ratio to the effective strain put upon him. Success in such a method only becomes possible through an immense margin of superior strength in some form—and, even so, tends to lose decisiveness.

In most campaigns the dislocation of the enemy's psychological and physical balance has been the vital prelude to a successful attempt at his overthrow.

B. H. Liddell Hart
Strategy, 1954.

The next available option is to enter conflict in earnest. This would mean not only being fully prepared to employ lethal force to obtain victory, but also being prepared to accept the attrition to one's own forces that comes with conflict and yet retain the capacity to continue the conflict to its logical conclusion—one's own victory. Triumph in conflict through battlefield victories is normally costly and could prove to be a devastating drain on the nation. Careful planning has to be a cornerstone in employing this strategy. Only as a last option should the strong defensive line of the adversary be attacked. What Sun

Tzu terms fortified areas, in contemporary terms, could be the fully defended centres of gravity of the adversary, an attack on which would result in almost equal casualties and damage to one's own forces as compared to the adversary. Attacks on well-entrenched strongholds have the added disadvantage of the certainty of creating collateral damage to lives and property and, therefore, should only be carried out as a last resort solution to dire threats to national security that have to be eliminated. Under such circumstances, when national sovereignty itself is threatened in contemporary conflicts, the use of 'catastrophic force' cannot be ruled out.

Sun Tzu suggests four basic centres of gravity that should be targeted in order of priority when confronting an adversary in a conflict situation. The first is the strategic intent of the adversary that needs to be correctly identified and then targeted utilising all elements of national power through a whole-of-government approach. The second is the support network and systems of the adversary—allies, supply chains, diplomatic supporters—that should be disrupted, as subtly as possible. Third is the war-making potential of the adversary that can only be neutralised by the employment of one's own military forces optimally. Fourth—and only as an unavoidable last resort—when no other centre of gravity presents itself for opportune attack, should the adversary's strongest line of defence be targeted. While engaged in any conflict it should be borne in mind that rigid planning and inflexible execution is a combination that normally fails. In this stanza Sun Tzu advocates the conduct of a conflict employing a judicious mix of mental, physical and material power at one's disposal to assure victory.

The centres of gravity that Sun Tzu lists in order of priority can be superimposed on Warden's Rings as targets. The strategic intent of the adversary is effectively the command and control facilities; support network will mean, in part, the manufacturing and supply chain; war-making potential would in the short term be the fielded forces; and the strongest line of defence would be the defended core and systems that comprise their military capabilities. This is a fairly simplistic way of depicting the attack strategy that should be adopted, but it explains the manner in which the ISR, electronic warfare and strike capabilities of air power can be utilised to identify and target the centres of gravity. Command and control structures and the support network of the adversary will need greater ISR effort to be identified and then neutralised by kinetic or non-kinetic means. The engagement and destruction of the war-making potential or combat capability of the adversary would be more reliant on air attacks—strategic strikes, interdiction and tactical actions—than on nonlethal actions. The need for accurate and timely intelligence and analysis is emphasised in this stanza, in terms of putting in place the strategy to utilise national power optimally.

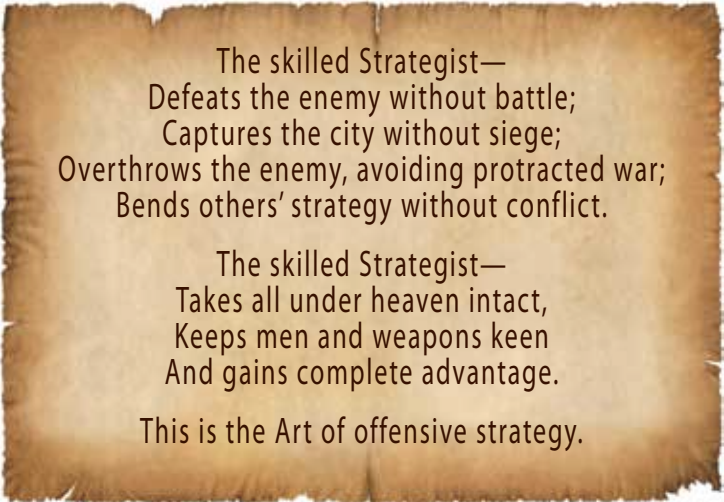
In the next stanza, Sun Tzu elaborates on the difficulties of attacking the adversary's fortified areas, in terms of time required and possible casualties, and explains that a direct attack on such positions will almost certainly end in disaster. The time, materiel and human resource requirement and the cost of mounting such an attack is prohibitive. Most such challenges fail. Sun Tzu views such direct attacks as emanating from a lack of vision and initiative at the strategic command level. In contemporary air power terms,

this injunction indicates the clear chances of suffering unacceptable attrition when attacking targets that are very heavily defended. Therefore, before attempting any such direct attack, the need to neutralise such a target and the attrition one is willing to accept in doing so must be determined, and agreed at the strategic level of politico-military leadership. This process is extremely important in the case of smaller air forces with limited assets and restrictions on capability growth, which might not be able to replace attrition thereby becoming unable to sustain the required effort. In all cases these strikes will be extremely resource intensive.

*Sun Tzu's target sets can be superimposed on Warden's Rings
for contemporary conflict*

*Air power's ISR, electronic warfare and strike capabilities are
vital to prosecuting targets correctly*

*Attrition replacement capability is a critical factor to ensure the
viability of small air forces*



The skilled Strategist—
Defeats the enemy without battle;
Captures the city without siege;
Overthrows the enemy, avoiding protracted war;
Bends others' strategy without conflict.

The skilled Strategist—
Takes all under heaven intact,
Keeps men and weapons keen
And gains complete advantage.

This is the Art of offensive strategy.

The Art of offensive strategy requires the skilful leader to subdue the enemy without fighting, captures fortified areas without siege and overthrows the enemy in a swift campaign, overwhelming their strategy without conflict. The skilled leader captures enemy resources intact and thereby conserves the strength of own forces and gains full advantage. Complete victory is achieved by strategic calculations.

This stanza draws out the conclusion from the preceding ones in this section and describes a strategic security philosophy ideally suited for an effects-based whole-of-government approach, even when taking the offensive in a military campaign. Optimally, such a strategy will have the breadth and depth to avoid a destructive military campaign or, in circumstances when military action becomes unavoidable, it will combine the elements of national power to act in concert in limiting physical damage.

Sun Tzu constantly emphasises the need to win conflicts without having to resort to physical battles. This is also a solution to the problem of overcoming the adversary when their strong defences are difficult to neutralise in a cost-effective manner. Although the strategy proposed does not focus directly on engaging in battle, Sun Tzu does not completely negate combat operations; in fact his views are quite the contrary. As the strategy is laid out, it is obvious that Sun Tzu accepts the need for military confrontation and combat in certain situations, but explains the importance of initiating these actions from a position of strength to ensure victory. Efforts must also be made to capture the adversary's resources with minimal destruction and to ensure that one's own forces are not unnecessarily expended. Essentially, a skilled commander will be able to pick the time, place, nature and tempo of the confrontation to suit one's own strategy.

The basic need is to build up one's own position—strengths and resources—to a level where the adversary would hesitate to get into a direct confrontation. Even then, unless direct confrontations are demonstrably won, the potential adversary will not be able to gauge the real strength resident in one's own forces. Under these conditions it will be necessary to choose the initial battles with great care to ensure that there is not even the slightest chance of a setback. After one's own infallibility has been clearly demonstrated, it will be possible to become more flexible in the application of force since the element of deterrence would already have been introduced into the equation.

The underlying theme of the stanza is that one must be fully dedicated to the defeat of all opposition, even if it means having to use all the capabilities of the military forces. Sun Tzu has very clearly prioritised even the methodology to achieve this. The first is to avoid direct conflict until one is ready to demonstrate overwhelming military capability vis-à-vis the adversary and the second is to conserve one's own warfighting capabilities at all times while continuously undermining that of the adversary. Actual confrontations must be concluded swiftly in triumph and the commander must always be searching to identify opportunities in order to expand the utilisation of resources without putting them at unnecessary risk. The strategy being advocated is not necessarily risk-averse, but it is one of patience and discretion in the employment of resources, one that is formulated after careful risk assessment.

In the contemporary environment this is clearly a top-down look at ensuring national security when conflict is becoming increasingly difficult to avoid. Even then the advice is to explore all possible avenues to avoid conflict—starting with a whole-of-government approach using diplomatic initiatives, economic pressures and military deterrence capabilities—before actually committing to the use of force. Starting from the grand

strategic whole-of-government appreciation of the security situation, the next step is to employ the military forces; initially through punitive actions to demonstrate both intent and capability and thereafter in full employment to effect rapid victories. Sun Tzu brings out the need for commanders to conserve one's own strength, to exercise patience when dealing with intractable adversaries, to constantly strive to recognise and exploit opportunities and the need to retain the initiative to choose the context, time, place, tempo and mode of conflict. The overarching tenet that strings the different national security campaigns together is the tenaciousness required to pursue and attain the set strategic objective.

Military forces play a critical role across the full spread of this continuum of conflict. Pre-conflict whole-of-government manipulations to avoid war will, of necessity, have to be bolstered by very real military power to be effective. In these negotiations air power can be a decisive factor by demonstrating intent through positive surveillance, forward deployment of offensive assets and the pre-positioning of troops and other resources into or close to the potential theatre of operations, without actually committing any acts of war. It is also ideally suited for the role of carrying out punitive strikes at the outbreak of hostilities and is crucial in escalating or de-escalating the conflict as required. Air power is a potent tool that can be efficiently used to control the tempo of a conflict, provided control of the air has been obtained prior to it. It is also a cost-effective way to pursue limited objectives and can limit the use of the other elements of the military, thereby conserving resources and ensuring that the conflict does escalate.

Appeasement of Germany in the 1930s

After being defeated in World War I and forced to accept humiliating conditions (at least in German eyes) of surrender, by 1934 Germany had started to rearm and occupied the Rhineland in flagrant breach of the Versailles Treaty. It was clear that Hitler posed a threat to peace in Europe and although in 1934 Germany was militarily weaker than France and very much weaker than France and Britain combined, no firm action was initiated to stop Hitler. Instead the political leaders adopted the strategy of appeasement, mainly because the mood of the people was deeply opposed to war. This anti-war feeling was bolstered by the fear of aerial bombing that was predicted to lay waste to London itself.

In 1938, Hitler forced France and Britain to accept his demands to persuade Czechoslovakia to cede territory and population to Germany and on 29 September 1939 an agreement was signed by France and Britain with Germany and Italy, virtually giving Czechoslovakia to Germany with no representation from the Czechs themselves! Although this agreement was touted as 'peace in our time' by British Prime Minister Chamberlain, it did no such thing. Instead Hitler attacked Poland on 1 September 1939 and on 3 September Britain and France declared war on Germany: World War II had begun.

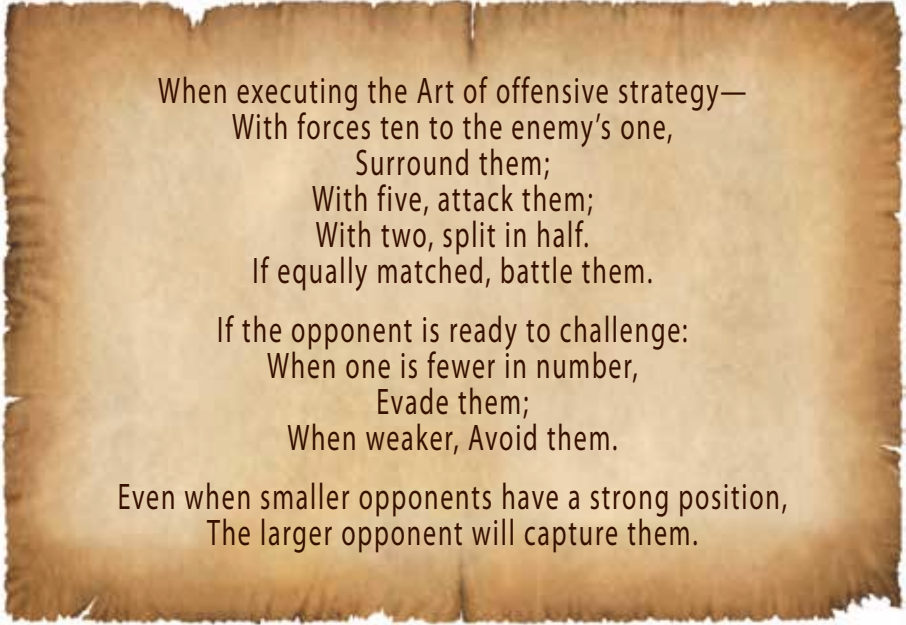
Appeasement—agreeing to even unreasonable demands of the adversary in order to maintain a tenuous peace—will not work when the adversary perceives this as an act of capitulation by a militarily inferior nation.

*Air power is an effective deterrent capability, even without
having to commit any acts of war*

*Air power's strike capabilities are crucial to
containing or escalating a conflict*

Air power can be an effective tool to control the tempo of a conflict

The Rule of Numbers



When executing the Art of offensive strategy—
With forces ten to the enemy's one,
Surround them;
With five, attack them;
With two, split in half.
If equally matched, battle them.

If the opponent is ready to challenge:
When one is fewer in number,
Evade them;
When weaker, Avoid them.

Even when smaller opponents have a strong position,
The larger opponent will capture them.

Comparative numerical position is a significant factor in the successful conduct of a campaign. Consequently, the rule in war is—if own forces are ten to the enemy's one, to surround them; if five to one to attack them; if twice as numerous to divide one's own forces into two; and if equal to offer battle. If numerically inferior, evade the enemy and if unequal in capability, the enemy should be avoided. Even a competent small force will be captured by a numerically superior force in the long term.

Sun Tzu's offensive strategy is primarily aimed at winning the conflict—if possible without having to use force—and capturing intact as much of the enemy resources as possible. This stanza provides generic 'rules' regarding the conduct of offensive campaigns in relation to force numbers. The numbers and the actions suggested in particular cases are obviously indicative of the mode of warfare in ancient times and have to be suitably adapted for relevance in modern times. In fact it is not possible in contemporary conflict to lay down exact numbers or rigid courses of action that should be followed when a particular numerical comparison exists with the adversary in the battlespace. This is mainly because in modern military forces numerical calculations alone do not provide a clear-cut analysis of comparative capability between the opponents. A number of other equally important factors—some not directly applicable to the battlespace—influence the overall capability of a force. A numerically superior force is not always assured of victory. Further, retaining maximum flexibility in the employment of forces at all times is a fundamental requirement in contemporary conflict, which detracts from laying down even guideline figures, much less actual numbers as Sun Tzu has done. Therefore, the stanza should be interpreted in a holistic manner and not literally.

The essence of this stanza is the employment concept of forces of different comparative numerical strength—size—that could be broadly divided into larger, equivalent or smaller in size than the adversary. By using the term 'size', the intention is to indicate that it is not only the numerical strength that is being analysed but also the capacity and calibre of the forces involved so that a holistic appraisal is possible. The understanding of the relative size of the adversary provides the basis for calculating the resource requirements and formulating the optimum strategy to be victorious. With careful planning and innovative use of own strengths even larger adversaries can be defeated.

There is also an element of context in contemporary conflict and, therefore, numerical superiority can be situational. By adopting the principle of concentration of force to a carefully analysed situation, a smaller force can become the dominant force within the required time and defined area of operation and thereby prevail in conflict. However, such actions will not be sustainable in the long term and should only be resorted to after follow-on actions that will eventually culminate in superiority in size have been considered and planned at the strategic level. It is also necessary to understand that in contemporary conflict, wherein the theatres of operation could be at great distances from home bases, maintaining long-term numerical superiority through concentration of force could burden the logistic supply chain beyond its capacity, making the situation untenable.

The analysis of numbers and size should also take into account the impact of asymmetry on combat situations. Asymmetry has become a common theme in contemporary conflict, although the concept is age-old. In contemporary conflict—mainly against irregular adversaries—in the majority of times the use of asymmetry is aimed against the conventional forces of the democratic world. It is necessary to change the situation and leverage off the asymmetry that conventional forces themselves possess—the technological

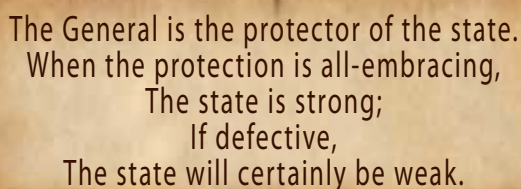
superiority, internationally accepted legality of actions, adherence to human rights norms that indicate the true 'size' of the force—to turn the tables on the adversary.

Size has both strengths and weaknesses. Large forces have enormous resources at their disposal but by the same token are also resource-intensive to maintain and ponderous in manoeuvre. Smaller forces are normally agile and can counter the power of the larger force by adopting strategies based on swiftness of manoeuvre. For the long term, smaller forces would be a preferred option as the requirement for resources is much less in a smaller force and it is also faster to assemble and easier to maintain. However, considerations of resource requirement alone cannot be the determining factor in deciding the size of the standing force of a nation. The size must be determined after taking into consideration a host of disparate factors—threat perception, socio-cultural make up of the nation, perceived role of the nation in the international community and others.

Numerical deficiency, which could translate to inadequacy in the quantum of capability available, can be largely offset in the contemporary warfighting scenario by the use of force multipliers. As a force projection capability, modern air power is well suited to improving its broader capacity by employing force multipliers. It is also more reliant on technology-enabled force multipliers, as compared to other military capabilities, for the efficient application of its full capabilities. The increase in capabilities brought about by the optimum employment of force multipliers is particularly important for smaller air forces. Most of these forces operate under budgetary constraints that at times do not even permit the retention of critical mass. Force multipliers mitigate this issue to a great extent and provide smaller air forces with the capability to provide a credible air power contribution to national security. Sun Tzu's caution regarding the impact of numerical comparison in the final outcome of a campaign is relevant even today. However, technological innovations—force multipliers—provide contemporary smaller forces with the 'size' to have a modicum of parity with a larger force, for a defined period of time. Strategic planning must always be cognisant of the depth inherent in a larger force and the rapidity with which a smaller force can be reduced in 'size' when the conflict is going against them.

Air power capabilities can be enhanced by the use of force multipliers
Force-multipliers are critical to sustain capabilities in smaller air forces
Smaller air forces can rapidly reduce in 'size' under adverse conditions

Leaders—Military and Civilian



The General is the protector of the state.
When the protection is all-embracing,
The state is strong;
If defective,
The state will certainly be weak.

Grand strategic military commanders are the fundamental supporting pillars of the state. When they are complete—meaning having both ability and intelligence—then the nation is safe and strong. Even if there is the slightest gap in capabilities, the opponents can take aggressive advantage of it, weakening the nation.

Defeat is bitter. Bitter to the common soldier, but trebly bitter to his general. The soldier may comfort himself with the thought that, whatever the result, he has done his duty faithfully and steadfastly, but the commander has failed in his duty if he has not won victory—for that is his duty ... He will remember the soldiers whom he sent into the attack that failed and who did not come back. He will recall the look in the eyes of men who trusted him. 'I have failed them,' he will say to himself, 'and failed my country!'

General Sir William Slim 1897—1970
Defeat into Victory

Sun Tzu lived in a completely feudal era and his writings are based on the societal norms of that time. National security was almost completely based on the military prowess of the nation, which was largely a product of the ability of the commanders. However, the dependence on the proficiency of strategic commanders of the forces for success in conflict is still relevant. Then as now, generals must be proficient in the art and science of warfare before they can plan, command, assess and succeed in conducting a campaign. The only difference is that in ancient times, military commanders normally also enjoyed considerable civilian power, status and influence even if they were not directly connected to the executive part of the government, as compared to the almost watertight compartment from which they operate in modern democratic nations.

The power of commanders in times of conflict is a direct function of the support of the people, making the nation almost inviolable when the people and the military work in unison to ensure the security of the state. When a nation is at war, the commander is the decision-maker and success is assured only when there is complete and unanimous support for the decisions. Debate and discussion of ideas must stop as soon as a decision is made and action must be immediately initiated. The obvious need for a commander to be capable of assimilating large quantities of information, considering the myriad variables in battle and then making a superior decision that will lead to success is clearly evident.

Decisions can never be perfect, and there will not be consensus on all decisions. As a corollary, neither does consensus make a decision infallible. The timeliness of a decision and the speed with which it is implemented contribute, in no small measure, directly to its value and success. Failure to execute the decisions of the commander, for whatever reason, weakens the military and indirectly exposes the nation to security challenges. The strength of any organisation—including the military—is primarily derived from unity. Unity, in a very broad sense, is a product of strategic leadership and cohesive action emanating from the execution of command decisions. Trust and confidence in the capability of the commander would almost automatically elicit support for the decisions made, making it easier for those to be enacted efficiently.

Professional mastery of the individual environment and clear understanding of the joint construct of all campaigns is a prerequisite for a strategic commander to be able to make successful decisions. Decision superiority is a war-winning quality that must be carefully husbanded in the development of leaders throughout the continuum of training. Professional mastery of military commanders and the ability of the force to ensure organisational decision superiority are two of the cardinal pillars on which the security of the nation is dependent. The first is a product of the selection, training and education process within the forces and the second is a synthesis of individual capabilities and situational awareness, which is a function of adequate information availability and flow.

Air power plays a crucial role in the information gathering, analysis and timely dissemination process. Air power assets are critical to the efficacy of the entire process and cannot be replaced by assets operating in other environments. The link between this nonlethal air power capability at the tactical level and the state of the nation's security at the grand strategic level, although very long, is very visible and direct. For certain, national security is not assured by the military forces alone in modern times; however, they still form the critical foundation from which other elements of national power are exercised to secure the nation. It can therefore be surmised that the strength of the military forces is a tangible measure of the ability of a nation to protect itself even in the current, very ambiguous security environment.

Professional mastery is a prerequisite for effective command

***Decision superiority, based on adequacy of information,
is a war-winning quality***

***Nonlethal air power capabilities are critical to ensuring the
uninterrupted availability of relevant and accurate
information to commanders***

A Ruler can bring adversity to the Force in three ways—

Calling for an advance,
Or a retreat,

While ignorant of the fact that
The Force is unable to do so;
Is called hobbling the Force.

Ignorant interference in the Force's decisions
And aligning the Force politically;
Confuse the officers and men.

Ignorant interference in the Force's appointments
Filling the Force with appointed officials;
Result in distrust and scepticism.

When the Entire Force is confused and perplexed,
Other leaders will cause serious problems.

This creates disorder in a Force and kills victory.

There are three ways in which the civilian leadership can create untenable situations for the military and put it into difficulties. First, when the military is ordered into or out of battle by civilian leadership without full knowledge of the prevailing circumstances, leading to the force being tied down; second, when civilian leadership, while ignorant of military matters, exercises authority over the administration and decision-making within the military forces, leading to confusion; and third, when civilian leadership, while ignorant of the military

chain of command interferes in the appointment of commanders, leading to distrust and scepticism in the field. A confused force is open to external interference and leads to the opponent's victory.

Political interference in the functioning of the military forces can have disastrous consequences to the forces' efficacy. In democratic nations, the high command of the military is always subservient to the elected civilian political leadership and, therefore, the chances of such intervention are greatly increased. There is a requirement for an in-depth understanding on the part of both the civilian and military leadership regarding the functioning of the other part so that the civilian-military interaction at the grand strategic level can be correctly balanced. This will also assist in keeping the civilian control of the military campaign at the appropriate level, that is at the national grand strategic level, without unnecessary intervention that would invariably lead to a detrimental situation. There are three major issues that can arise as a result of unwarranted and inopportune political interference in military matters.

First, there is always a tendency for the civilian leaders to want to oversee the functioning of the military, especially if the nation is preparing for or is already committed to war. This can lead to the military being tasked to carry out missions and campaigns that could well be outside their capacity to undertake successfully. Second, political intervention can lead to military decisions that are not based on the actual prevailing situation in the area of operations and at times not aligned with the overall strategy, but aimed at meeting some tactical political objective. This will dilute the focus of the force on the final outcome at all levels of war and lead to confusion in the ranks vis-à-vis the campaign objectives. While it is accepted that the end-state to be achieved in any conflict is political in nature, the decisions in conflict have to be completely devoid of political bias. Third, interference in the appointment of senior military commanders to politicise the force without giving sufficient weightage to seniority and due consideration for professional competence can lead to the undermining of the chain of command. There could perhaps be no other action that would undermine morale and have greater impact on the functioning of a fighting force than to have incompetent commanders foisted on it for political considerations. Politically appointed commanders will bring distrust and a sense of cynicism to the entire force and blunt its fighting edge.

United States in Vietnam

For the United States of America, the Vietnam War of the 1960s and 1970s was not only a physical conflict but also a virtual political war. The US military was deployed into the war without a clearly delineated end-state that they were to achieve, by political leaders who themselves were vague regarding the position that the nation was advancing. Political considerations—themselves never clearly thought through—forced the military to engage in a war that from the outset was clearly not winnable. Further, politicians went on to constrain the military's freedom of action at the strategic, operational and tactical levels by laying down very restrictive rules of engagement. Interference, even at the tactical level in terms of target selection and approval for bombing raids, from the highest civilian leadership who did not have any understanding of the military strategy being employed or the actual situation on the battlefield created a completely untenable position for the military. The military leadership, subservient at best to the civilian leaders, did not project the unfolding disaster to the political level thereby misleading them in an indirect manner. The final outcome was a resounding defeat on all fronts.

Political/civilian interference in the conduct of a military campaign is tantamount to mistrust of the military leadership. Second-guessing the military, especially when far removed from the actual combat zone, undermines the unity of purpose of the force. Sun Tzu very clearly enunciates the pitfalls of disrupting the chain of command of a force—subordinate officers will try to put in practice their own ideas and there will not be a unified command structure to concentrate the effort towards achieving strategic objectives. Political authorities can damage the cohesion of the force by hindering manoeuvres, creating confusion in the decision-making cycle and undermining the morale and trust of the force.

The result of such interference in the long term is that the entire force is weakened and operates in a state of confusion. Such a force is easily defeated when a flexible adversary is able to take advantage of the disruption within the force. A disjointed force will not be able to fathom the tempo and pace of the conflict, thereby relinquishing the initiative to the adversary. A confused force, facing an adversary who has the advantage of holding the initiative, is truly on its way to disorderly defeat. Only strong, united and focused leadership, well supported by the civilian government—and, by extension, the nation's population—will be able to bring vital success to military operations in line with the grand strategic requirements of the state.

This stanza is essentially about the civil-military relationship and has great significance in the functioning of democratic nations. Sun Tzu has indicated three major areas where political interference can create debilitating trouble for the military—the actual conduct of the campaign, operational decision-making and internal promotions and appointments. These are still extremely sensitive areas in contemporary military forces

and the civil-military relationship should be cognisant of them. The question of political interference in the conduct of a military campaign is a vexed issue in the current politico-security environment. It is very clear that today the military campaign is only one part of the larger national security agenda, varying in its importance and amount of contribution in a contextual manner. In the contemporary security environment, viable national security can only be achieved by cleverly implementing a whole-of-government approach based on creating the effects—physical and psychological—required to deter or defeat potential adversaries. Civilian oversight of national security objectives is therefore a natural progression and cannot be denied.

The way forward for military forces under these circumstances is to be able to conduct the military campaign in an expeditious manner and provide the civilian leadership with the maximum number of options to choose from in formulating and pursuing the national security strategy. In order to avoid unnecessary political interference in the conduct of the military campaign, senior military leaders must not only be competent professional masters in the profession of arms, but strategic statesmen on the national stage. They must be able to influence all aspects of the government's decision-making process in relation to national security at all times, even when the nation is not at war. This is a two-way process of building trust—military trust of the civilian establishment to support them and civilian trust of the military to be able to defend the nation in an honourable manner. Only demonstrated capability of the military to do so will prevent the civilian leadership from wanting to oversee the conduct of military campaigns, at least from the strategic perspective.

*Political interference can disrupt the smooth and
victorious conduct of a campaign*

*Demonstrated professional mastery of strategic military commanders can
build trust and ameliorate friction with the civilian leadership*

*Senior military leaders must grow into strategic statesmen to ensure that
military contribution to national security is appropriate
and contextual at all times*

The Essentials of Triumph

There are five essentials to triumph in war—

Know when to challenge
And when not to challenge;
Understand how to use the numerous and the few;
Have the high and low rank share a single will;
Is prepared and yet awaits the opportunity;
Capable leaders operating
Unhampered by the Ruler.

These Five, point the way to victory.

There are five essentials to triumph in war—knowing when to fight and when not to, understanding the employment of both large and small numbers, having unity of purpose and unity of command, being prepared yet waiting patiently for the right opportunity, and having competent leadership without political interference. A force displaying these five characteristics will be victorious.

In this stanza, Sun Tzu lists the basic ideas that were expounded in the chapter, although not in the same order. This listing is perhaps the order of priority that he placed on them in terms of the importance of each of the factors to victory—when to attack, employment of forces, unity of purpose, exploiting opportunities and not undermining the authority of the commander. These five factors are critical to the success of a military force. In contemporary military context these five principles translate to exercising correct judgement, flexible and efficient employment of forces, ensuring the cohesiveness of the entire force, retaining the initiative with surprise actions and the absence of political interference.

The common thread that connects all the factors is the need to assess the capability of the opponent in comparison to one's own and then employ the forces optimally. Exercising correct judgement is the culmination of detailed analysis of the five fundamental factors that encompass the conduct of war as enumerated in Chapter 1. Study of the numerical strength and 'size' of the adversary in relation to one's own will determine the strategy to be adopted in attacking the adversary or countering their moves against one's own positions. Such strategy should always be oriented towards ultimate victory and can only be achieved by being adept at flexible employment of available forces in such a way as

to mitigate one's own weaknesses. Military conquest is a matter of coordination, not of masses. Decisions made at the highest levels of command need to be communicated clearly all the way down to the tactical level, so that the force as a whole has an unambiguous understanding of the commander's intent. This is the only way to ensure cohesiveness of the force throughout the campaign.

Military forces must be at a certain level of preparedness even during times of peace. However, the opportunity to seize the initiative must be carefully judged and is heavily influenced by the adversary's level of preparedness. It is therefore necessary to exercise patience before joining battle so that victory is assured. A commander is able to function at the highest efficiency when not encumbered by political interference. Political directions must therefore be given at the beginning of a campaign planning process itself and thereafter the commander should be allowed to formulate the military strategy and implement it in an optimum manner. This is of paramount importance to obtaining military victory.

The warrior and the statesman, like the skilful gambler, do not make their luck but prepare for it, attract it, and seem almost to determine their luck. Not only are they, unlike the fool and the coward, adept at making use of opportunities when these occur; they know furthermore how to take advantage, by means of precautions and wise measures, of such and such an opportunity, or of several at once. If one thing happens, they win; if another, they are still the winners; the same circumstances often make them win in a variety of ways. These prudent men may be praised for their good fortune as well as for their good management, and rewarded for their luck as well as for their merits.

Jean De La Bruyere 1645 – 1696
Characters

The five factors have common application to all arms of the military in contemporary circumstances. Exercising correct judgement means that the force must be designed to achieve decision superiority at all levels of command. The employment concepts of large and small forces are very different and, therefore, the commander has to be mindful of the complexity of comparing the sizes of the opposing forces. It is also necessary for commanders at all levels to be well versed in the strategy of attack while being aware of the disadvantages inherent in the offensive employment of both large and small sized forces. At the tactical level, the use of air power to carry out 'surgical' strikes that have strategic impact on the outcome of the campaign is a clear example of the flexibility required in employing forces. Commander's intent, enunciated at the highest level, should be the basis for drawing out strategic, operational and tactical aims throughout the campaign, operations and battles. Such a process will align all actions within the

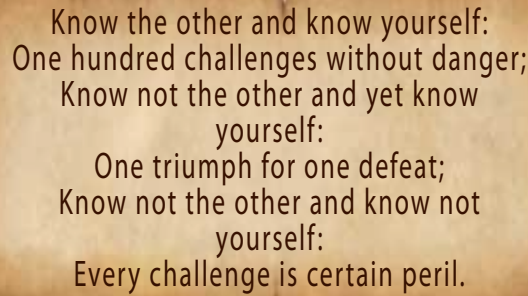
campaign which in turn should be conclusively aligned with the end-state required. This will also ensure that the force operates as a coherent entity, which is essential to optimising its employment towards achieving victory.

The requirement for preparedness and the need to assess the correct opportunity, in terms of the adversary preparedness, to capitalise on it are critical to conserving own resources and minimising the possibility of suffering a reverse, even temporarily. In contemporary military operational scenarios, political intervention at the highest levels of command is becoming more common, brought on by a number of politically compelling reasons. Therefore, it is all the more important to de-link the conduct of the actual campaign from tactical political oversight to ensure that military aims can be met with minimal casualties and collateral damage. The commander's intent has to be distilled from the political objectives laid down as imperatives to national security. Since the military campaign objectives are derived from the commander's intent, alignment between the grand strategic political objective and the military objectives is assured. Political interference at the operational and tactical levels or even at the strategic level after the campaign has been initiated can only bring confusion and dilution of the effectiveness of military forces.

Military forces should be designed to achieve decision superiority

*Tactical air strikes can have strategic impact on the campaign,
but require flexibility in the application of force*

*Grand strategic objectives, commander's intent and operational and
tactical level military objectives must always be aligned*



Know the other and know yourself:
One hundred challenges without danger;
Know not the other and yet know
yourself:
One triumph for one defeat;
Know not the other and know not
yourself:
Every challenge is certain peril.

Knowledge of the enemy as well as one's own capabilities will always bring victory. If knowledge of the enemy is lacking, then the chances of victory and defeat are equal. If battle is joined without knowledge of the adversary or own capabilities, it is certain to bring defeat.

This chapter is about developing the correct strategy and explains the employment of forces, nature of command, unity of command and purpose in a force, and the political dimension of warfighting. Sun Tzu, however, introduces the concept of knowledge as an essential part of leadership requirements in the last stanza, indicating its close relationship to the factors that are essential to achieve victory. Picking the winning strategy is almost completely dependent on the knowledge of the adversary intent and capabilities, the comparative size of the forces, information regarding the physical terrain of the theatre of operations as well as the virtual environment prevalent in the battlespace. Knowledge and understanding of political directions and the desired end-state to be achieved is essential to formulating military strategy and defining strategic objectives for the overall campaign. Sun Tzu emphasises that, while not knowing the adversary can be costly, not being aware of one's own capabilities, strengths and weaknesses can lead to catastrophic failure.

Knowledge of the adversary capability, strength, size and intent is dependent on intelligence. Gathering of information and its realistic analysis is of cardinal importance to the conduct of a campaign. Comparison of one's own government, military leadership, logistics and the geo-strategic situation to that of the enemy will give a clear idea of superiorities and inferiorities, weaknesses and strengths, and enable the enactment of the best strategy to prevail every time in military operations. It influences the choice of strategy, the *modus operandi* of the forces, the relationship between the civilian and military leadership, and the support that the nation provides to the forces in conflict.

Reports gathered and presented by the General Staff, on the one hand, and by the Statistical Bureau, on the other, thus constituted the most important sources of information at Napoleon's disposal. Climbing through the chain of command, however, such reports tend to become less and less specific; the more numerous the stages through which they pass and the more standardized the form in which they are presented, the greater the danger that they will become so heavily profiled (and possibly sugar-coated or merely distorted by the many summaries) as to become almost meaningless. To guard against this danger and to keep the subordinates on their toes, a commander needs to have in addition a kind of directed telescope—the metaphor is an apt one—which he can direct, at will, at any part of the enemy's forces, the terrain, or his own army in order to bring in information that is not only less structured than that passed on by the normal channels but also tailored to meet his momentary (and specific) needs. Ideally, the regular reporting system should tell the commander which questions to ask, and the directed telescope should enable him to answer those questions. It was the two systems together, cutting across each other and wielded by Napoleon's masterful hand, which made the revolution in command possible.

Martin van Creveld
Command in War, 1985

Air power plays a critical part in the collection of information and its further analysis, as well as its dissemination to relevant agencies and command levels. Knowledge superiority is the key to planning and conducting successful operations. Adequate knowledge of adversary capabilities and dispositions, understood throughout the force, enables the conduct of a comprehensive campaign that can be won at minimal cost. Not having adequate knowledge or acting on false impressions can lead to defeat. Air power also plays an important part in reconfirming intelligence that has been gathered by other sources, thereby eliminating the chances of initiating wrong actions based on incorrect or incomplete intelligence. The ISR capabilities resident in air power are critical in developing appropriate strategy for the optimum employment of military forces in the pursuit of national security. In contemporary situations, wherein the security threats could emanate from very far afield, the range, responsiveness and high loiter capability of airborne ISR assets—manned and unmanned—become crucial factors in ascertaining the emergence and seriousness of threats. The probability of success is underpinned by the adequacy of available knowledge.

Knowledge is an intrinsic part of leadership requirements

*A holistic comparison of own and adversary capabilities is necessary
for the development of the best strategy*

*Air power is critical to information operations, that in itself is
the mainstay for knowledge dominance*

Conclusion

A nation must have very clear security objectives and grand strategies to ensure its sovereignty at all times. In modern democratic nations this can only be achieved by ensuring the robustness of civil-military relationship that is built on mutual trust. The strength of the relationship, which has a direct bearing on the security of the nation, is dependent more on the professional mastery of the military commanders than on the civilian leadership's knowledge of military matters. Therefore, it is of the utmost importance that senior military leaders evolve into strategic statesmen, capable of credibly advising the government not only on military matters, but on all matters of state security, for national security is no more the exclusive responsibility of the military forces. Further, professional mastery is a prerequisite for effective command within the military itself.

National security should be based on a grand strategic security plan that provides adequate, but sufficiently broad guidelines for the formulation of individual plans for each element of national power. The strategic military objectives, commander's intent and operational and tactical level objectives must all align clearly with each other and holistically with the national strategic objectives. In order to achieve this, the military forces must be designed to achieve decision superiority even in the most trying of circumstances.

Within the military arena, air power is critical to information superiority and also has crucial roles in other aspects of national security. However, air power is a versatile capability and can be employed in a number of different ways and different areas to ensure national security. Carefully employed air power can contribute heavily towards a strategy of deterrence through punitive strikes and even without the use of lethal force. It can apply lethal force with proportionality, discrimination and accuracy to neutralise adversary centres of gravity swiftly and at great distances. In irregular warfare, air power

has the capability to neutralise the asymmetry that a diffused adversary brings to bear on conventional forces. Astute application of air power can escalate or contain a situation at will and can effectively control the tempo of an operation.

The virtues of air power that have been described within this chapter must also be put in context. Smaller air forces will always have limitations on where and how much of air power they are capable of applying and will almost always struggle to maintain an acceptable level of attrition replacement capacity. Although force-multipliers do provide a certain amount of relief to the stretched resources, these air forces operate under the constant risk of rapid reduction in 'size' during operations. This is a criterion that planners must factor into all strategic, operational and tactical level plans.

In applying an effects-based strategy towards national security, air power is a non-replaceable capability. For a nation that puts its security as the fundamental requirement for its further progress, it will be prudent to consider the quantum and quality of its available air power. Sun Tzu's axioms point very clearly in this direction.



4

Planning and Leadership

The Essence of Victory

Sun Tzu described the need for pre-planning as a prerequisite for success. Skillful strategists place their forces beyond the capacity of the adversary to attack, thereby ensuring that they will not be defeated. From this position of strength they then plan their own attack after gathering sufficient intelligence and analysing it in relation to one's own objectives. This analysis should also be focused on determining the vulnerabilities of the adversary so that planning can take into account the centres of gravity that would yield the maximum effect when neutralised.

This chapter describes the constant adaptations required in planning a complete conflict to ensure that strategic advantage is always maintained. This process is dynamic and continuous, since changes to one's own plans will invite a corresponding change in the adversary's plans in response to which further adjustments to own plans are made and so on. The chapter also describes the imponderables of conflict

and emphasises that the degree of control of the environment is never complete because of the various factors that affect it, some of which are outside one's influence. What can be controlled comprehensively is one's own reaction to environmental changes, which could be cultivated in a focused manner to ensure that they remain beyond the scope of external influences.

Anyone can plan a campaign, but few are capable of waging war, because only a true military genius can handle the developments and circumstances.

Napoleon Bonaparte, 1769–1821

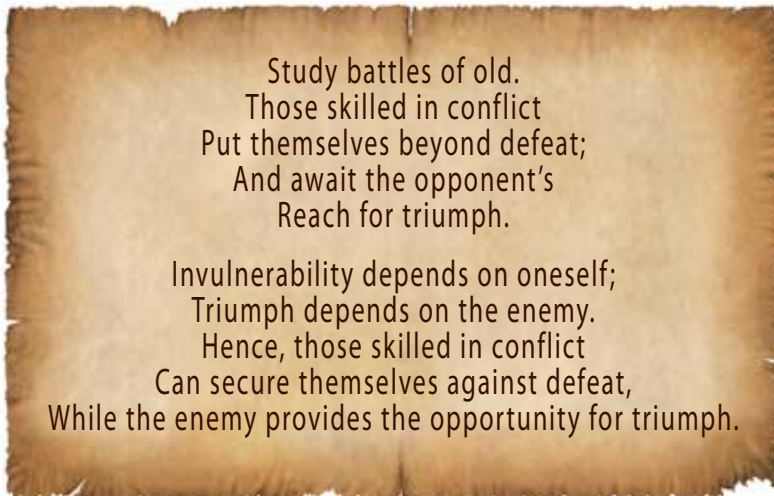
The underlying philosophy of strategic national security requires that one should always strive to improve the nation's security posture—effectively retaining an offensive posture at all times and resorting to defensive positions only when it is unavoidable. Sun Tzu very clearly states that security of the nation cannot be assured by adopting static defensive strategies. Only the demonstrated offensive capability of a nation, which is inherently dynamic in nature, can create credible long-term security strategies. As a corollary, this philosophy assumes that retreats of all kinds—defensive manoeuvres—will be viewed as weakness in planning and/or execution of strategies and, therefore, will be the precursors to more attacks by the adversary. In any conflict, there can only be two possible outcomes—either one's own security status is improved and moves forward, or the adversary advances their security situation. This paradigm must underpin the planning of all campaigns.

The Maginot Line

The Maginot Line was constructed by France along its borders with Germany in the wake of World War I. The fortifications were based on the perceived success of the static, defensive combat practised throughout World War I and the line was meant to deter any future attack on France. However, the Germans were able to neutralise the Maginot Line by avoiding a direct assault on it and isolating the line from the rest of France by bypassing it. This proved conclusively that static defensive postures will at best have a very short effectiveness span in defending the sovereignty of a nation. The Maginot Line is considered one of the great failures in military history, having been built at great expense and then proving ineffective against superior strategy and application of warfighting capabilities.

Sun Tzu propagated a three-pronged strategy to overcome adversaries in conflict—first, study the opponent and the emerging patterns of conflict; second, position own forces in such a way as to be protected while the adversary is exposed; and third, initiate action only after an opportunity for triumph has been clearly identified vis-à-vis the opponent's manoeuvres. Only methodical planning and the ability to position forces correctly will result in lasting triumph. These are two fundamentals to victory, and effective leadership is the essence that binds them together. The ideal triumph is one obtained through strategic positioning obtained through meticulous planning and executed by sophisticated commanders.

The Power of Defence



Learn from the history of successful battles and campaigns. The first action of a commander is to ensure that the forces are positioned in such a way as to avoid defeat under all circumstances while also analysing the adversary actions in trying to obtain victory. It is possible to ensure that one is not defeated; by the same token victory is dependent on the enemy providing opportunities. Successful commanders can ensure that they are not defeated and should be able to identify and exploit opportunities that the enemy provides to attain victory. Opportunity for victory can be envisaged but not created.

Sun Tzu believed that analysing campaigns from history usually provided a realistic indicator of the concepts and strategies that would be successful and those that would

not. This is true of all aspects of warfare. Through the ages, those sophisticated in strategy have first created situations where they would not be defeated and only then planned for victory. In facing a challenge, the first requirement is to defend oneself from being defeated and only thereafter commence actions to remediate the situation. While not being defeated is within one's control, victory is dependent on the adversary's potential and, therefore, outside one's own ambit of control. Even the best strategist will not be able to fully guarantee victory, although they will be able to ensure with complete assurance that they will not be defeated. In planning, victory can be assumed by the analysis of comparative capabilities but the opportunity to be victorious is dependent on the ability to identify the adversary's vulnerabilities and exploit them to one's own advantage.

This stanza explains the nature of victory. Victory is directly influenced by three factors—in preparedness and the ability to grasp opportunities, the capability to fathom the extent of the adversary's weaknesses, and the understanding that victory can never be determined by one side alone in a conflict. Therefore, victory can be perceived but not created. After making sure that one's own forces are invulnerable, the adversary weaknesses must be examined and explored to discover the opportunity to destroy them. While this analysis is being done, it must also be ensured that one's own position is not compromised. Opportunities—strategic centres of gravity of the adversary—cannot be created, but once they are recognised, they can be exploited to ensure victory. Ideally, the progression of a conflict should be initially to prevent the adversary's victory while preserving the capability within one's own force to retain flexible options and then to exercise the ability to choose and execute the relevant course of action that would lead to victory. Although fighting to prevent defeat does not automatically confer victory, prevention of defeat is dependent on the resident defensive capabilities of the force. Once defeat has been averted, the weakness of an adversary must be established and subsequently exploited to gain victory. This requires offensive fighting ability. Victory is obtained by preparedness, the ability to discern the opportunity and seize the initiative and exploiting the enemy's vulnerability.

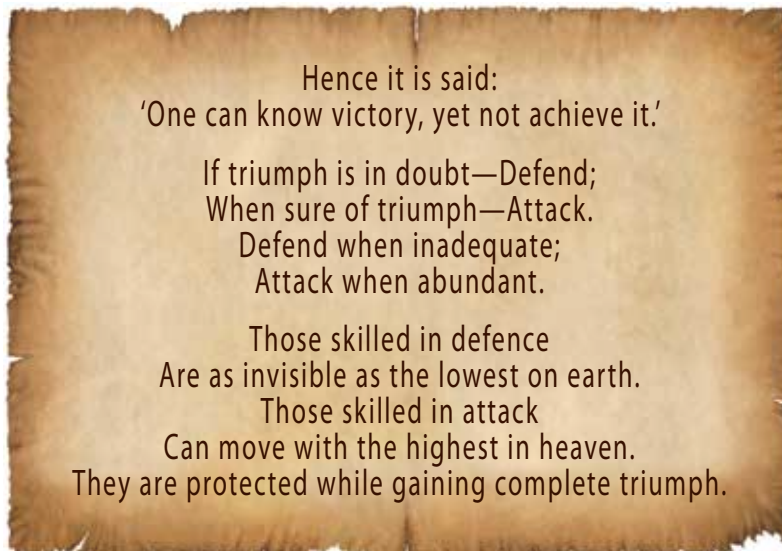
In the currently prevailing security scenario most nations have adopted a perennial defensive posture with their security apparatus at some level of readiness at all times. From this state it is possible to implement more dynamic defensive strategies to ensure that the nation is secure in the short term, as a response to unforeseen events or challenges. Air forces will, under these circumstances, be tasked to carry out defensive counter air measures, such as combat air patrol, defensive fighter sweeps, and other defensive ground measures. There are two major advantages of air power carrying out such actions—it prevents a slide into the possibility of defeat under pre-emptive attacks and acts as a deterrent to offensive action by potential adversaries. Preventing defeat can be achieved by action and also by demonstration of intent—'action' in terms of the use of lethal air power capabilities to defeat any offensive action against the nation, and 'demonstration of intent' in terms of show of force and pre-positioning of combat assets

at critical points. Air power capabilities also can be powerful elements in identifying and analysing the adversary's weaknesses and determining their strategic centres of gravity. Further, air power capabilities are ideally suited to exploit or neutralise these centres of gravity with the application of lethal, proportionate and discriminatory force. While air power alone—or for that matter the military forces on their own—cannot assure national victory at the grand strategic level, without its ubiquitous capabilities complete victory will not be achieved. The nature of victory in conflict is multifaceted. However, in every iteration of victory in contemporary conflict, the participation and contribution of overarching military power—and the critical part played by air power—is apparent.

*The employment of air power in a defensive strategy prevents
the possibility of defeat*

*Air power is a crucial element in determining and exploiting
adversary centres of gravity*

Air power is critical to victory in all conflicts



It is simple to perceive victory, but difficult to achieve it. When the enemy seems invincible, adopt a defensive posture; when sure of victory, launch an attack. When there is inadequate resident capability it is prudent to be defensive and an attack should be launched when resources are abundant—battle should not

be initiated unless there is certainty of victory. A commander skilled in defence is normally at a lower profile whereas one skilled in the offensive is seen to be flamboyant. The conduct of defence or offence is determined by the comparative strengths of the commander. A skilled commander is protected while achieving total victory.

In a conflict there are only two clear alternatives that can be adopted—either to defend or to take the initiative and be on the offensive. The choice of either option depends almost entirely on the prevailing circumstances and how certain one is of victory. The support infrastructure available, the opponent's sagacity and strength, and prevailing conditions will affect the chances of achieving victory. Careful analysis of all contributory factors—to both success and failure—individually and collectively is a primary requisite to ascertain the end-state that a particular course of action will create. A course of action should only be adopted after this process has clearly indicated that it will bring victory. If there is even the slightest doubt regarding the possibility of achieving victory, that course of action should be discarded. Under such circumstances, adopting a defensive posture will be the best option. An offensive campaign should not be launched unless the abundance of resources and other factors clearly indicate victory.

Defensive action maintains the status quo and denies victory to the adversary. This also provides the delay and slows the tempo of operations necessary to create an invulnerable position for one's own forces. Skilled defence is built on existing strengths and by leveraging them in a nuanced manner, to target the weaknesses of the adversary. However, in the long term, purely defensive manoeuvring will not assure the security of the state. A nation can only be assured of complete security after achieving victory over the adversary. Here the term victory is used to indicate the achievement of the grand strategic objectives. It is necessary to transform from the defensive to the offensive in order to achieve victory and thereby secure the nation. A commander therefore needs to be skilled in defence and capable of transitioning at the appropriate time from the defensive to adopt and execute an offensive strategy that will ensure certain victory. This is the acme of command in war.

The immediate reaction to a threat is always defensive. It is necessary to consolidate the defensive position to one of invulnerability wherein the adversary is denied any advantage and only then start to pursue offensive strategies. An offensive should only be launched from a dominant defensive position. A comprehensive offensive strategy—demonstrated to potential adversaries in no uncertain manner—is the foundation for long-term security. It is always advantageous to carry the battle to the adversary rather than be reactive to their initiatives in the defensive mould. Therefore, even a defensive strategy should incorporate the concept of initial counteroffensive action, followed by the implementation of a fully offensive strategy. The offensive would obviously be a long-term strategy as opposed to the counteroffensive being the secondary reaction to an immediate threat or enemy offensive that has been thwarted. The key to understanding and designing strategies for both

defence and offence is impenetrability. The implementation of either is determined by the comparative balance of strengths between the opposing forces. Only a commander who clearly understands this combination of impenetrability and balance of strengths will be able to conserve the resources and employ them at the opportune moment optimally. A skilled commander will be able to distinguish the limits of what can be achieved through effective control and skilfully tailor expectations dependent on the context.

In contemporary conflict situations, this stanza indicates the requirement for realistic analysis of own resources, alliances and force preparedness vis-à-vis those of the adversary. There is a clearly discernible undercurrent of deterrence in Sun Tzu's evaluation of when to adopt defensive or offensive strategies. Air power is inherently an offensive capability, even when employed within a broader defensive strategy. This is a cardinal principle in the effective employment of air power that should not be lost sight of under any circumstances. The offensive nature of air power must percolate into the operational and tactical planning processes to optimise its effectiveness. Air power is ideally suited to carrying out limited counteroffensive manoeuvres even when the nation is pursuing a defensive strategy at the start of an adversary-initiated conflict.

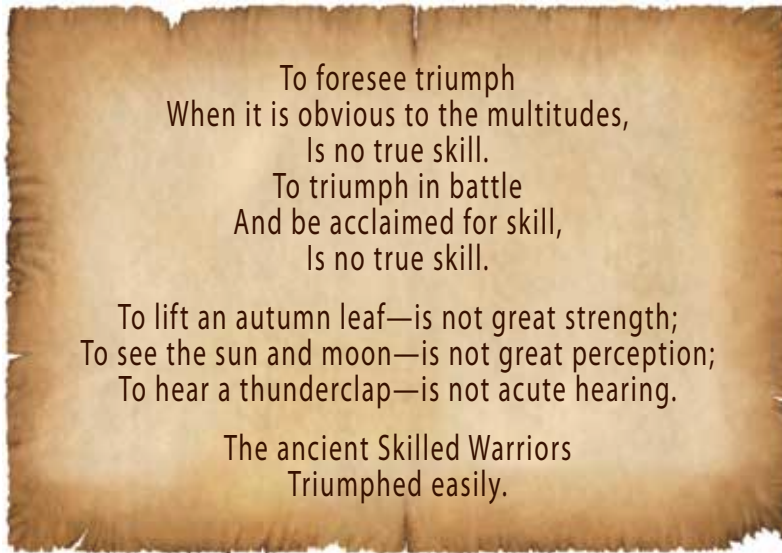
The air power characteristics of reach, penetration, lethality, precision and proportionality are extremely valuable in transitioning from the defensive and thereafter pursuing an offensive strategy in a campaign. In this stanza Sun Tzu grades the requirements for national security implicitly as starting from deterrence, and explicitly from effective defence transitioning to offensive action aimed at victory, all the while emphasising the need for skill at the command level. Efficient and demonstrated air power capability is a deterrent force, it is effective when employed correctly within a defensive strategy and is the capability that is easiest to transition to the offensive when required. The optimum employment of air power—including rapid transition from the defensive to offensive when required—is underpinned by the professional mastery of commanders at all levels and the technical mastery of the operators at the tactical level. Only a force with adequate resources, carefully employed by professionally competent commanders, will have the capabilities necessary to create the effects needed to achieve victory. There can be no substitute for this combination.

*Air power's inherent offensive nature must percolate the
planning process at all levels*

*Air power's characteristics of reach, penetration, lethality, precision and
proportionality are ideally suited to pursue an offensive strategy*

*Effectiveness in the application of air power is underpinned by
the professional mastery of commanders*

Effortless Triumph – Operational Control



To foresee a victory which an ordinary man can foresee is not the acme of excellence. Neither is it to triumph in battle, for to lift an autumn leaf requires no great strength, to distinguish between the sun and the moon is no test of perception, and to hear the thunderclap is no indication of acute hearing. Those sophisticated at strategy vanquish those who are easily vanquished, achieving easy triumph.

There are various skills that must be mastered by the commander in order to retain the force's competitive edge. Sun Tzu implicitly indicated that truly skilled commanders will stand out from the ordinary because of their true strength, superior perception of events and heightened senses that jointly provide them with the ability to see the more difficult and obscure situations in conflict, which is a critical factor in formulating good strategy. This stanza directly delineates three skills required in successful commanders—strength, perception and knowledge. The skilled leader will be able to judge the comparative strengths of own and adversary forces and perceive opportunities that may not be apparent to a normal person to identify and exploit the weaknesses of the enemy. Even a mediocre commander will be able to prevail in battle if abundant resources are made available against an adversary operating under constraints of resources and with limited capabilities. As a corollary, such a commander may attain victory against a more robust

adversary but at great cost to own forces. Neither of these victories can be considered as having been achieved utilising the sophisticated skills necessary in commanders. Such commanders will only be able to identify the most obvious opportunities and may not be able to take advantage of even those. Success requires intuitive and decisive action. According to Sun Tzu, heroic action against great odds is not the pinnacle of success as a commander, but a sign of immaturity in the formulation of strategy. A master of strategy is someone who can calculate the odds accurately and then take appropriate action with the assurance of success. It is obvious that even though battles can be won through the skilled use of resources, picking wrong battles will lead to defeat in the long term. He gives the example of some everyday occurrences in nature to illustrate the difference between a skilled and sophisticated commander and one who is not.

Situations that provide easy victory are at times so obvious that they tend to be overlooked. The study of strategy provides a commander with the capability to recognise emerging opportunities and the skill to exploit them to one's advantage. Sun Tzu also cautions against the human tendency to perceive patterns and movements where none exist, because it can lead to imaginary situations that can be dangerous when one is looking for opportunities. In other words, too much vision or perception can be as limiting as having too little of both. Strategy requires that situations must be created that have the odds heavily in one's own favour and battles must be picked and fought in such a manner as to use minimal force for victory. Complex plans and ideas must be kept to the bare minimum and identification of opportunities that will lead to easy victory must take precedence over engaging in a battle of attrition. Sun Tzu explained victory as always having an element of chance attached to it and that the most skilled strategist is the one that can identify a foe that is easily vanquished, making victory partly a function of a weak adversary.

This entire stanza is all about leadership and command. Command in conflict is a complex and intangible undertaking. A commander who achieves victory that can be perceived even by the common soldier is really not displaying any evolved leadership skills; neither does the commander who achieves victory at heavy cost to own forces and resources. At the tactical level a contested battle victory might involve a great deal of gallantry but, in the final count, the cost will not be commensurate with the achievement. Therefore, effective commanders have to be people with a highly developed sense of strategy who would not succumb to the common aspiration to pursue victory in battle irrespective of the cost.

In air power terms this requires professional mastery at the highest level for three primary reasons. First, the commander has to understand the enemy and identify their weak areas and strategic centres of gravity. This is an involved process and has to take into account not only the military capabilities, but also the political, economic, social and cultural situation within which the adversary is functioning. Second, the commander should be able to influence grand strategy at its formulation stage—requiring a clear understanding of the national security imperatives and other elements of national power—to ensure

that the employment of air power is appropriate and carried out within its basic tenets. This also requires the moral courage necessary to provide frank and considered advice to the political leadership. Third, at the military strategic level the commander should have professional competence to evolve air power application optimally with no wastage of resources. Air power is a resource and technology intensive capability and can become an unsustainable drain on a nation's limited economy if used without due consideration of all the factors involved. It is also necessary for the commander to be able to apply air power in such a way that it produces the necessary strategic effects while creating minimal collateral damage and the cascading adverse effects that it generates. This could be crucial to achieving final victory. Only a very high level of professional mastery will permit the commander to excel in performing these intertwined and complex responsibilities that ensure victory over even determined adversaries.

The first quality of a General-in-Chief is to have a cool head which receives exact impression of things, which never gets heated, which never allows itself to be dazzled, or intoxicated, by good or bad news. The successive simultaneous sensations which he receives in the course of a day must be classified, and must occupy the correct places they merit to fill, because common sense and reason are the results of the comparison of a number of sensations each equally well considered.

Napoleon Bonaparte, 1769-1821

Commanders need a highly developed sense of strategy

Commanders have to be professional masters to be able to:

- identify adversary strategic centres of gravity,***
 - influence the development of grand strategy, and***
 - apply airpower optimally with minimal wastage***
-

The victories of Skilled Warriors
Are not honoured for cleverness;
Bringing neither fame for wisdom,
Nor credit for valour.

Skilled Warriors triumph in conflict by making no errors;
Those who have made no errors
Triumph inevitably;
Vanquishing an already defeated enemy.

Skilled Warriors
Establish a Situation that cannot be defeated,
Win a war by assuring victory,
And miss no opportunity to defeat their opponents.

Victory gained before the situation has crystallised is one where there will be no fame attached to it or credit given for valour. Making no mistakes is what establishes the certainty of victory, for it means inevitable victory and vanquishing an enemy that is already defeated. Victory of good warriors is not a matter of chance because they consciously position themselves where they will surely win. They identify and exploit the opponent's weaknesses to defeat them.

Victory must be won comparatively easily for it to be counted as successful. Brilliance and physical courage are essential qualities in a leader; however, victory cannot be predicated upon these qualities alone at all times. Real victories are won with limited reliance on these two intangible qualities and with emphasis placed on planning and appropriate execution. The requirement is to pick the battles that can be won and to avoid the ones that will need the exercising of superior intelligence and valour to ensure victory. History provides sufficient examples of wars that were lost even though there were brilliant victories that were won in hard-fought battles. The dangers of meeting the challenges of an adversary must be carefully calculated and conflicts in which winning will cost too much avoided because even though victorious this will weaken one's own position in the long term. The long-term objective of all strategy must be to enhance the position of the nation to a level where it is unassailable, while always being able to meet challenges that arise during the process. Therefore, sophisticated strategists will create a position of dominance before meeting any challenge. This will ensure not only one's own safety, but also assure victory. Good strategy assures victory, won at a reasonable cost that in turn increases one's own strength.

Sun Tzu believed that the first step in winning was to avoid defeat. By this he meant that given sufficient time and by observing and waiting patiently it is always possible to identify the correct opportunity and only then to take appropriate action that would guarantee victory. While it is true that time will bring opportunity, it is also true that the scope of the opportunity is likely to differ with time and its form may not always be readily recognisable. Therefore, it is important to be positioned in such a way as to be able to readily recognise and seize the opportunity as it arises, especially since opportunities can at times be fleeting. This is inherently a dynamic process. In ensuring the security and survival of the nation, time is an enduring challenge.

Victory is not gained by chance, but the result of careful planning that permits one to assume a position of superiority. Victory and defeat are unique to each conflict and therefore the optimum strategy must be developed, tailored to the particular context, and must be able to outmanoeuvre the adversary successfully even before the battle is joined. There are two parts to this strategy—one is passive in which defeat is avoided and the other is active wherein steps are initiated and pursued to assure victory. Sun Tzu explains this as ensuring that one does not lose in a confrontation, which will over a period of time translate to victory, provided the openings and opportunities that an adversary presents are exploited correctly.

This stanza is about conducting operations—by controlling victory and conflict—to win the war. There are three elements to controlling victory—first, the plan and realisation of victory must go beyond common understanding, which means that chance will always be an element in victory; second, victory is, at least partially, dependent on the weakness or incompetence of the adversary; and third, careful planning is a precondition for victory. The control of conflict is dominated by two major factors—first, since every conflict is unique, how to defeat the adversary under the prevailing conditions should be clearly discerned beforehand; and second, victory is almost always determined before, not during or after, the battle.

In terms of the application of air power there are four major points that can be gleaned from this stanza; three at the strategic level and one at the operational level of conflict. At the strategic level, the first is the need to use resources effectively in the pursuit of victory. Achieving one tactical victory after the other at great cost to one's own air forces can be devastating in the long term. At the end of such a conflict, one's own air force will be weakened to an extent wherein another adversary could easily eliminate it and threaten the security of the nation. Calculating and accepting possible attrition to one's own air power capabilities and the moral courage to make decisions that may lead to casualties therefore are the most important factors in planning for a conflict. Second is the need to have the capability to observe the adversary actions in order to be able to identify their centres of gravity and recognise opportunities to neutralise them. This will come from adequate ISR assets and the ability to employ them without interference on a constant basis for the required duration. Third, is the ability to obtain and maintain control of the air, which is the only position of superiority from which all other operations can

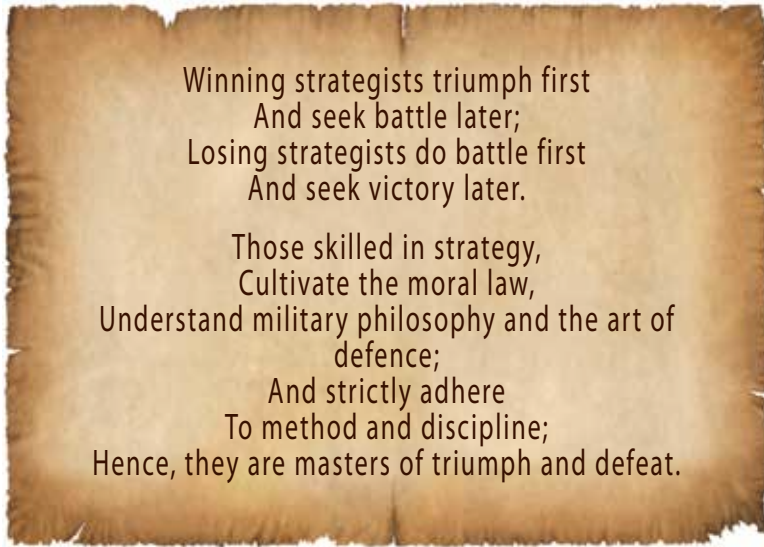
be launched without fear of adversary interference. In a joint campaign, air superiority alone does not assure victory; however, without air superiority victory can become an unachievable dream in a majority of conflicts, especially if the adversary possesses even limited air power capabilities. Although control of the air has been discussed here as the third point, it is the primary requirement in conducting successful operations and a key planning consideration in all campaigns.

From an operational perspective, air power is ideally suited to exploit time sensitive opportunities that present themselves and is recognised for its ability to provide the demanding ISR such operations need. Air power's ability to strike and neutralise such time sensitive targets—based on its reach, responsiveness, penetration and precision—with minimal collateral damage cannot be replicated by any other military capability. The advantage of this capability is that it can be used to strike high-value targets like adversary leadership that may only provide fleeting opportunities but could be tide turning in the strategic context of the conflict.

Control of the air is a prerequisite for all operations and a key planning consideration in all joint campaigns

Calculating the acceptable attrition rate to one's own air power assets is critical to planning for victory

The combination of air power's ISR and lethal, long-range, precision strike capabilities can carry out time sensitive targeting that could have long-term strategic effects



In warfare, plans which will ensure victory must be first formulated and accepted, and only then battle joined. Every conflict has unique contexts for victory and defeat, which should be discerned and determined beforehand. Good strategists act morally, understand the philosophy of military application and are well versed in the art of defence. Efficient leadership and adherence to well-founded rules are the foundations for victory and should never be underestimated. Such commanders will always be able to assure triumph.

What stronger breastplate than a heart untainted!
Thrice is he arm'd that hath his quarrel just,
And he but naked, though lock'd up in steel,
Whose conscience with injustice is corrupted.

William Shakespeare, 1564–1616
King Henry V

A good strategist will carry out detailed planning, covering all possible contingencies, before joining battle with an adversary. By doing so, the assurance of victory is greatly increased, mainly because the dynamic nature of conflict is mostly covered by the preparations for contingencies. In the absence of such planning, the force is likely to be surprised by unforeseen circumstances, thereby reducing the chances of success in the conflict. Every conflict starts with the protagonists at different and unique positions.

Victory or defeat thereafter depends on the success or failure of the leadership to optimally employ the forces at their disposal.

Clear understanding of military philosophy creates the strategy that will unite and focus the war efforts of a force and, through it, that of a nation. This is buttressed by a nation being able to assume the moral 'high ground' by the correctness of its actions in all aspects of the conduct of war. When the philosophy is well grounded it clearly highlights the strategic objective, ensuring that the position of the nation is easily defensible. A disciplined force is the creation of a commander who understands the methodology of its employment and who plans for victory realistically. A clear understanding of the rules and regulations that bind the force together as an entity—throughout the force, from the highest commander to the lowest soldier—is a foundational requirement for victory. Commanders who have in-depth appreciation of these fundamentals will always be victorious; essentially because they will be able to predict and control the movement of a conflict and, therefore, control it to their advantage.

[Colonel John] Boyd paid particular attention to the moral dimension and the effort to attack an adversary morally by showing the disjuncture between professed beliefs and deeds. The name of the game for a moral design for grand strategy is to use moral leverage to amplify one's spirit and strength while exposing the flaws of competing adversary systems. In the process, one should influence the uncommitted, potential adversaries and current adversaries so that they are drawn toward one's philosophy and are empathetic towards one's success.

Grant T. Hammond,
The Mind of War: John Boyd and American Security, 2001

The crux of the stanza is about skilled leadership and decision-making, which is the basis of victory or defeat. The decisions are products of the basic philosophy, understanding of strategy and the willingness to act within laid down regulations in a disciplined manner. A commander controls only these three conditions and not the openings that can be exploited to become opportunities to be seized for victory. However, these conditions are the foundations on which victory can be built. Good leadership based on sound judgement paves the way for decision superiority and victory. Therefore, this quality should never be underestimated.

So Grant was alone; his most trusted subordinates besought him to change his plans, while his superiors were astounded at his temerity and strove to interfere. Soldiers of reputation and civilians in high places condemned, in advance, a campaign that seemed to them as hopeless as it was unprecedented. If he failed, the country would concur with the Government and the Generals. Grant knew all this, and appreciated his danger, but was as invulnerable to the apprehensions of ambition as to the entreaties of friendship, or the anxieties even of patriotism. That quiet confidence in himself which never forsook him, and which amounted indeed almost to a feeling of fate, was uninterrupted. Having once determined in a matter that required irreversible decision, he never reversed, nor even misgave, but was steadily loyal to himself and his plans. This absolute and implicit faith was, however, as far as possible from conceit or enthusiasm; it was simply a consciousness or conviction, rather, which brought the very strength it believed in; which was itself strength, and which inspired others with a trust in him, because he was able thus to trust himself.

Adam Badeau

Military History of Ulysses S. Grant, 1868

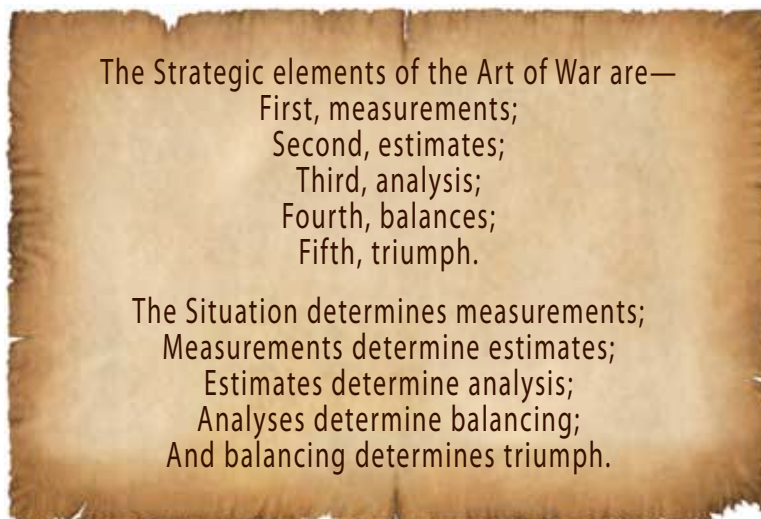
This stanza is about the quality of leadership and the necessity to have professional masters of their domain in command of forces. This is an age-old requirement, without which a force will not be able to achieve victory. Professional development of commanders must encompass the understanding of the moral implications of their actions, adherence to national rules of engagement, the ability to develop and implement military strategy within the national ethos, and the capacity to combine these into qualities that will ensure superior decision-making. This stanza reinforces the need for commanders at all levels to be professional masters of their individual environments to the degree required to triumph in conflict. Air commanders require air power mastery to control the direction and tempo of operations that, in turn, ensures that one is able to gain and maintain the initiative at all times. At the operational level, only professional masters will be able to identify and neutralise targets that are purely military centres of gravity for the adversary. Dual-use or civilian targets—that could be the nation's centres of gravity—will have to be identified at the grand strategic politico-military level, and the military input for their selection, as well as the decision to neutralise them, will have to be from the highest level of command. Irrespective of the national ethos and constraints placed on the application of force, commanders must be able to make superior decisions, one of the fundamental requirements to prevail and be victorious in conflict.

Professional mastery of the individual environment is a prerequisite for effective command at all levels

Air commanders must be able to control the direction and tempo of operations at all times

The decision to neutralise the adversary nation's centres of gravity must be taken at the highest politico-military level of command

Five Strategic Arts to Control Triumph



There are five elements of the art of war through which commanders may control victory; measurement of battlespace or area of operations, estimation of quantities, analysis or comparisons, calculations of numbers and chances of victory. Assessment of the context of operations includes distances and type of terrain. Such assessments will lead to the estimation of the degree of difficulty in traversing the enemy's land and further to the calculation of the number, quantity of equipment and morale of enemy troops. Only after analysing whether the enemy can be attacked with sufficient chance of victory should mobilisation of troops commence. Comparison of the merits and demerits of the adversary with one's own will provide an indication of the chances of victory.

There are five elements of the art of war which are the principal factors through which commanders control victory in conflict. The ultimate basis for determining the success or failure of a particular strategy will be the effort involved in achieving victory through the implementation of that strategy. This is one of the more important stanzas in Sun Tzu's treatise and provides direction on how to decide the application of a strategy. In the battlefield, the current position of own forces will determine the distance and difficulty in moving to a more dominant position, which in turn will determine the resources required to achieve this. When considered at the strategic level, an assessment of the adversary capabilities and the resources required to overcome them as well as the difficulty in doing so, in comparison to one's own capabilities, will provide a clear indication of the chances of success. The decision to adopt a particular strategy should only be taken after a comparative analysis of a number of strategies with regard to their chances of success, potential advantages to be gained and the resource implications.

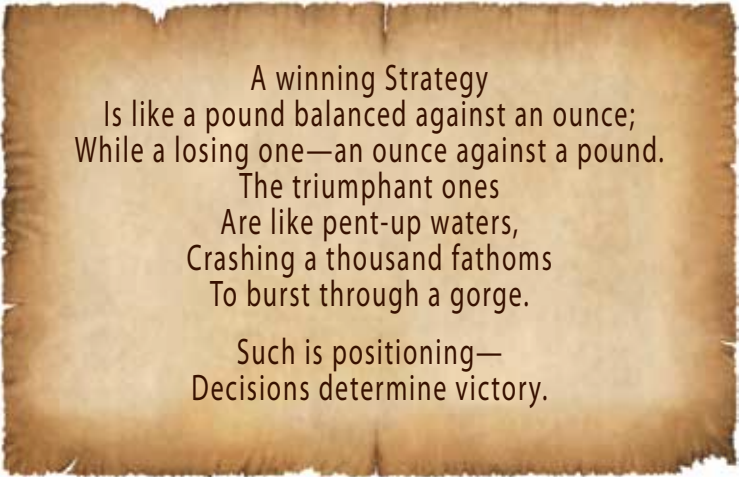
In this stanza Sun Tzu clearly lays down the sequence of planning to achieve victory and then provides the methodology to arrive at a decision regarding the viability or otherwise of a strategy. Such planning must commence from a position of strength for easy victory. It is noteworthy that here Sun Tzu does not consider the concept of 'not being defeated' as a strategy by itself (mentioned in detail at the beginning of the chapter) but emphasises the need to plan for the offensive in a cost-effective manner. The calculations for victory will have to be tempered with the cost that a nation is willing to bear as the price of success in battle and the analysis whether or not the cost will be worthwhile incurring vis-à-vis the benefit that will accrue from victory.

In contemporary conflict, the strategic planning process must be conducted for the entire theatre of operations, primarily based on the probability of initiating offensive action at the earliest opportunity. Detailed operational planning must also be jointly undertaken, with the need to obtain and maintain the necessary level of control of the air being considered a primary factor in the planning process. In implementing such a strategy, the offensive capabilities of air power can be optimised at the operational level of conflict. Such an action comes with an added advantage that air power can, under certain circumstances, become an effective asymmetric capability that can be applied in concert with other military capabilities as needed. After careful consideration of the adversary's capabilities, air power can be applied in such a way as to neutralise any advantage that they may have and, further, to turn an equally matched situation to one's own advantage. Fundamental to this will be a planning process that takes into account the dynamic nature of contemporary conflict and the manner in which air power's flexibility will be able to balance and respond to the issues that arise from constantly changing circumstances. This process is the first step towards victory in conflict.

Strategic planning must cover the entire theatre of operations

Control of the air is a primary factor in the joint planning process

Air power is an effective asymmetric capability that can balance and respond to issues that arise in a dynamic joint battlespace



A winning Strategy
Is like a pound balanced against an ounce;
While a losing one—an ounce against a pound.
The triumphant ones
Are like pent-up waters,
Crashing a thousand fathoms
To burst through a gorge.

Such is positioning—
Decisions determine victory.

A winning strategy is like a kilogram compared to a gram. The onrush of a conquering force is like the bursting of pent-up waters which, when suddenly released, plunge down with irresistible force to burst through challenges. A skilled commander will be able to decide on the positioning of the force and know how to apply it against the enemy's weakest point at the opportune moment.

Victory results from the application of one's own superior capabilities directed against the adversary's inferior capabilities within carefully orchestrated strategies. Essentially, this results from examining competitive mismatches between the two forces and identifying the areas wherein one's own strengths outweigh those of the adversary. The emphasis in this stanza is on the comparative nature of capabilities. A certain quantum of capability may be greater when compared to one and yet lesser when compared to another. A wrong appreciation of this could lead to defeat. Therefore, realistic assessment of one's own position and capabilities vis-à-vis those of the adversary is an essential part of the planning process. Sun Tzu advocated the positioning of one's own troops in a situation of overwhelming advantage, not one with only a slight advantage, since conflict

joined from a slight advantage can be difficult to win if the adversary is clever, whereas commencement from a position of overwhelming advantage makes the force irresistible.

The formulation of strategy for victory starts with the calculation of distances and analysis, but is finally completed with the interaction of people. Strategy is a purely human endeavour—conceived, enacted and analysed by people. Its formulation and the chances of its success are therefore dependent on clear understanding of the prevailing conditions and the factors that affect the conduct of a campaign. This chapter delineates the progression—from the paradigm that situations cannot be controlled, to the initial understanding that astute observation can help identify the opportunity which could be exploited and, finally, to the need for offensive action to assure victory. It also emphasises the need to be ‘positioned’ correctly, that is to manoeuvre into a situation where advantages are predominantly with one’s own forces and from where it is possible to dictate terms when conflict finally erupts. The wisdom of a commander lies in being able to position forces in such a dominant manner that the adversary will not have any opportunity to even aspire to victory. Sun Tzu equated victory with the human capacity for decision-making at the correct level, tempo and time.

In the context of air power, formulation and application of a winning strategy is dependent on three major factors. The first and the most obvious is the question of comparative capability inferiority, parity or superiority irrespective of the numerical balance between the two competing forces. Only superior capability in a holistic manner will assure victory in conflict. The second is the ability, through well-conducted surveillance operations, to identify the centres of gravity of the adversary and the capability, through lethal application of force, to neutralise them effectively at the appropriate time. Third, a commander should be able to conserve air power resources and then employ them in a concentrated manner against the weak areas—identified contemporarily as the centres of gravity—of the adversary to maximum effect. This requires the ability, buttressed by accurate and valid information that creates adequate situational awareness, to be able to decide and implement the strategy that would automatically provide the force with the necessary superiority in the battlefield. This is the acme of leadership and assures victory in conflict.

Superior capability in a force is not always the same as numerical superiority

*Air power has the capability to identify and neutralise centres
of gravity of the adversary*

*A skilled air commander must be able to conserve air power and apply
it in a concentrated manner when required*

Conclusion

Planning a conflict in its entirety is as complex as conducting it with panache and flair. Adequate and detailed planning that covers a range of possible contingencies is also an absolute prerequisite for victory. In the case of an air campaign, this has special significance for two reasons; one, that air power is always constrained in the availability of resources and assets and, two, because of the high dynamism in an air campaign that makes it extremely difficult to predict its progress and direction. The planning process must always be joint in nature and at the strategic level cover the entire theatre of operations. It is also necessary to ensure that the need to obtain and maintain the necessary level of control of the air throughout the campaign is considered a primary factor in the planning process.

Sun Tzu believed that victory is dependent as much on the adversary as on one's own capabilities, in that unless the adversary displays areas of weakness, it will not be possible to identify and exploit them towards victory. The strategic centres of gravity, that when neutralised will make an adversary capitulate, can only be identified, not created by one's own actions. Further, adversary's actions and their effects, both direct and cascading, will also have a salutary impact on one or the other force being successful. This is one of the contexts in which air power can be crucial to success. Air power has the capability to identify and exploit or neutralise the centres of gravity of the adversary at all levels of conflict, from the strategic to the tactical without creating too many secondary effects.

While planning is a foundational requirement for victory, the role of the commander in planning cannot be underestimated. A commander should have a highly developed sense of strategy and must possess professional mastery at the appropriate level of command. At the strategic level, the commander should be able to influence the development of grand strategy, as well as be part of the politico-military decision-making body at the highest level. At the operational level of an air campaign, the air commander should be able to conserve air power capabilities and assets, while also maintaining adequate control of the air, to be able to concentrate force at the time and place required, for the necessary duration. In circumstances of limited resource availability, this requires exceptional skills in the planning and execution of an air campaign.

Air power is offensive in nature and is best employed in its offensive state. When employed in a sophisticated manner by professional masters, even tactical actions undertaken by air power can create long-term strategic effects—a unique capability that is not readily understood or often employed. Contemporary battlespace is inherently dynamic in nature and is likely to bring up issues that may have the capacity to overwhelm an unprepared force. By virtue of its flexibility, air power is capable of mitigating most of these vexing issues, provided the issues are identified correctly and air

power is employed within the accepted strategy. In planning and executing a conflict, air power is critical to victory.

Air power will play the leading role in our response to the security challenges of the uncharted future. It will in some circumstances be the only engaging form of military power and in others the form upon which successful surface operations depend.

Lt Gen Charles G. Boyd, USAF, 1991



5

Combat Power

The Strategy of Surprise and Momentum

This chapter focuses on the commander's ability to maximise the potential of military power resident in the force by developing innovative strategy that is applied through conventional and unconventional methods. The necessity to employ a judicious mix of conventional and unconventional methods—the Straightforward and the Surprising—to achieve victory is one of the key concepts in Sun Tzu's treatise. He analyses the interplay between the application of military power and victory in detail, and brings out the cardinal point that combat power alone is not always sufficient to create victory. In an indirect manner Sun Tzu combines pure military force and the element of surprise to define combat power very broadly and advocates that this power be applied in various combinations and at the opportune moment to orchestrate victory. The skill and acumen of the commander lies in identifying the appropriate variations and ensuring the timeliness of

their application. Victory therefore is achieved by a combination of surprise and the creation of momentum by optimal employment of combat power, brought together by a sophisticated commander.

Sun Tzu was pragmatic enough to advocate advancing one's position without direct confrontation as a viable strategy, while accepting that sometimes direct conflicts are unavoidable. However, even in conflict, he advises the use of circumspection and avoidance of battle as far as possible, employing deterrence and surprise to limit the actual duration of the physical confrontation. When combat power has to be applied, then it should be done in such a manner that the force's forward motion is unstoppable and events follow in the sequence that is intended. This chapter also advocates the use of surprise as a potent tool and studies the nature and effect that its sophisticated use brings to the larger strategy. Along with the inexorable movement forward of the force in its direct employment, the use of surprise is expected to completely overwhelm the enemy.

The element of surprise is dealt with as an entity that straddles the entire range of operations, from the grand strategic to the tactical level. At the grand strategic level, nuanced diplomatic manoeuvrings can become unforeseen surprises for the adversary and bring on speedy results in one's favour. Developing and employing new concepts of operations at the strategic and operational level that enhance the performance envelopes of the force's equipment that in turn improves the force's warfighting capability as a whole, will also create surprise and cause disruption in the adversary's operational ethos. Exploiting this confusion effectively will bring about speedy victory. Technological breakthroughs that create improved or asymmetric capabilities will be very effective in creating battlefield imbalance even if the forces are numerically evenly matched.

Stealth in the 1991 Gulf War

One of the principal observations from the 1991 Gulf War is the role played by low-observable or 'stealth' technology. Stealth was developed by the United States in 1983 and even now there is no equivalent to it in other nations' arsenals. The F-117A was the stealth aircraft used extensively in attacks against enemy air defences. Their success was such that it was conclusively demonstrated that, if aircraft with stealthy capabilities are in the inventory and undermine adversary air defences, even non-stealthy attack aircraft can be effectively employed with minimum attrition probability.

The second factor that emerged was that stealth proved to be a cost-effective strike capability in comparison to non-stealthy attack aircraft. The F-117A was able to carry out missions successfully with minimal external assistance, whereas force packages of up to 38 aircraft were required to ensure the safety of six strike aircraft.

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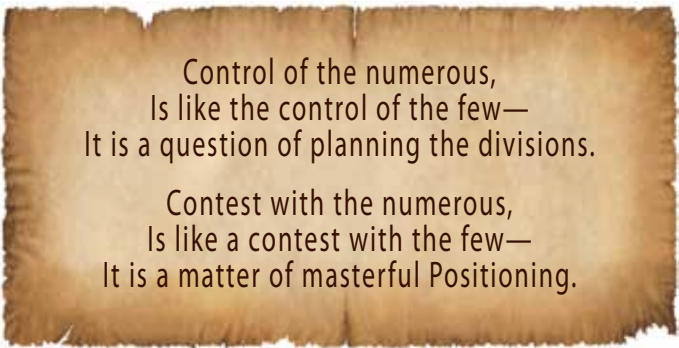
Use of stealth, a technological break through, greatly increased the efficacy of the air campaign in the 1991 Gulf War while reducing attrition probability of friendly strike aircraft.

(Ref: Gary Waters, *Gulf Lesson One – The Value of Air Power: Doctrinal lessons for Australia*, Air Power Studies Centre, Canberra, 1992, pp. 271–273)

Sun Tzu lived in an era where scientific knowledge, in comparison to the contemporary level of technological development, could be considered rudimentary. However, it is certain that innovation, even at that period, was as good as it is today, and therefore it is not surprising that he was far-visioned enough to have explained surprise as being achieved by potential innovations that would question the contemporary assumption of the accepted norm. When such assumptions are effectively challenged, it creates uncertainty not only about the prevailing situation, but also about the future progression of the battle, campaign or war. The use of innovation to create surprise brings about a far greater impact on the outcome of the conflict than it does on the improvement in performance of a particular asset or the capability of the force as such. The primary effect of innovation is to create an element of surprise. This is the most important factor to be borne in mind regarding the relationship between innovation—either in concepts or capabilities—and surprise.

The ideal strategy in conflict is to compel the adversary to be reactive to one's own manoeuvres, which is a skill that gifted and creative commanders possess. Effectiveness of this approach will be dependent on the strategic timing of the manoeuvres. The influence that needs to be brought to bear on the adversary force can be achieved by combat power and surprise. The use of only combat power will lead to battle—the result of which could be uncertain—whereas a judicious combination of combat power and surprise, applied by clever commanders, will lead to victory.

The Positioned Strategy



Control of the numerous,
Is like the control of the few—
It is a question of planning the divisions.

Contest with the numerous,
Is like a contest with the few—
It is a matter of masterful Positioning.

The principle of command and control of a large force is the same as that for the smallest numerical unit. This is achieved through establishing formations that are then subdivided into manageable units with competent organisation and training. The concept of operations to conduct a battle against a numerically large foe is the same as the one to be employed against a smaller force and requires the establishment of effective command systems and implementation of good strategy.

The primary prerequisites for the effective employment of combat power are competent organisation, comprehensive training, effective command structure and skilfully crafted strategy. The basic principles that underlie command and control are the same, irrespective of the size of the force or the scale of operations. Victory is achieved by exercising these principles evenly throughout the force, from the smallest tactical unit to the highest strategic level of command. Even though the organisational, administrative and operational communication requirements for command and control of large forces would be much greater in terms of the needed capacity, they should be exercised within the same principles as employed in the command and control of small and cohesive units. The requirement is to be able to break up the large force into smaller groups that have unity of purpose and are therefore easier to control. The complexity of command and control increases as the size of the force increases and starts to encompass units with disparate capabilities and tasking.

The stanza also points to the way to tackle the adversary in smaller and manageable numbers by positioning one's own forces at an advantage, both in terms of potential and size. By ensuring that the adversary never has numerical superiority, the astute commander neutralises for good one of the factors that contribute to victory and defeat. The efficient conduct of operations is the product of the implementation of a masterful strategy and well-established command and control procedures that have been refined through training and exercise. Constant practice in the exercise of command and the implementation of strategy and concept is essential for military leaders to perform their functions well under

the stress of actual combat. This competency translates not only to positioning forces to one's own advantage but also to gaining the initiative and retaining it throughout the conflict. These two factors will almost always pave the way for victory at minimum cost. Appropriate command and control and correct strategy are the basic factors that lead to victory and both of these are dependent completely on the efficiency and efficacy of the organisation and astuteness of the commander.

A contemporary force needs to be organised in a task-based manner so that the command chain is clearly apparent. Transparency of the command chain will avoid dual control of smaller units, which is contrary to the basic principles of command and control. A force founded on task-based groups and units will also ensure that units at the tactical level are homogeneous in terms of their composition, making them more efficient in the achievement of their core tasking. Command and control of air elements is more complex than exercising command and control of either land or maritime assets. This emanates from the fact that air elements can deploy rapidly and take decisive action at great range while simultaneously being involved in operations that require time-critical judgments to be made.

The basic command and control tenet under which air forces operate is that of centralised control and decentralised execution. Centralised control is necessary for two reasons—air power assets are almost always scarce and extremely cost-intensive in their operations, requiring allocation of assets at a higher level of command to avoid dissipation of the force; and the need to ensure concentration of force is directed at an appropriate strategic centre of gravity of the adversary within the theatre of operations. These decisions must be made at the highest practical level, by professionally competent senior commanders with adequate strategic understanding of the campaign objectives. Decentralised execution allows the inherent flexibility of air power to be exploited fully in the completion of missions. This tenet is followed all the way from the strategic level of the air force down to the level of a basic unit, the squadron, wherein individual mission commanders are given almost complete autonomy at the tactical level of engagement. Air forces have to inculcate this command ethos across the entire force for them to be successful in conflict. Adequate communications capability is a critical element in the success of all command arrangements. This is especially important in the air force context since air power is applied across the entire theatre and even beyond, requiring fail-proof communications for it to be effectively controlled.

*Command and control of air elements is complex because of
the simultaneity of their operations*

*Air forces operate best under the basic tenet of 'centralised control
and decentralised execution'*

Air power operates in and beyond the theatre

Finally, a most important point to be considered is that the revolutionary system of command employed by Napoleon was the outcome not of any technological advances, as one might expect, but merely superior organization and doctrine. The technical means at the emperor's disposal were not a whit more sophisticated than those of his opponents; he differed from them in that he possessed the daring and ingenuity needed to transcend the limits that technology had imposed on commanders for thousands of years. Whereas Napoleon's opponents sought to maintain control and minimize uncertainty by keeping their forces closely concentrated, Napoleon chose the opposite way, reorganizing and decentralizing his army in such a way as to enable its parts to operate independently for a limited period of time and consequently tolerate a higher degree of uncertainty. Rather than allowing the technological means at hand to dictate the method of strategy and the functioning of command, Napoleon made profitable use of the very limitations imposed by the technology.

Martin van Creveld
Command in War, 1985

The entire Force must act on the opponent
And not sustain losses, remaining undefeated;
It is a matter of the Surprising and the Straightforward.¹

The impact that comes from a Strategy
Is like a grindstone dashed against an egg.
It is a matter of Illusion and Reality.

The force should be able to contain the enemy's attack without suffering defeat by adopting both orthodox and unorthodox methods. In military operations both methods bring victory. Correct strategy would make the impact of the force resemble a grindstone dashed against an egg. To triumph in conflict, the military must have the ability to create both actual and virtual effects through flexible actions and retain the capacity to conduct decisive strikes against the enemy's weaknesses.

Along with the primary prerequisites, there are two second-order requirements for the effective application of combat power—the capacity of a force to engage and prevail over an adversary without incurring unsustainable losses, and the in-built flexibility to employ both surprise and direct action, independently or in combination, to achieve victory. This amounts, firstly, to having the ability to be flexible in initiating action and, secondly, to be able to strike decisively at the adversary's centres of gravity when required. It also means that the force must have the capacity to create virtual effects when necessary and influence the cognitive domain through direct and indirect action. Even if the capacity to engage and prevail exists within a force, the decision whether to resort to direct conflict or not will be influenced by the comparative size of the adversary. Further, direct conflict between forces of comparable size and capability is best avoided because of the uncertainty of the outcome. However, direct conflict cannot always be avoided and should not be ruled out since it may have to be resorted to under certain conditions. Surprise is another element that should be employed to confuse the adversary regarding

¹ The terms 'surprising' and 'straightforward' are interpreted from the ideogram ch'i and cheng. According to R.L. Wing, as military concepts of operations, ch'i refers to a surprise attack or ambush and cheng refers to a direct offensive or frontal attack. Chinese military strategy, through the ages, has laid a great deal of emphasis on the combination of these two concepts. (Ref: R. L. Wing, *The Art of Strategy*, Doubleday Books, New York, 1988, p. 69.)

one's true intent, capability and force availability, while also increasing the chances of success of the action being initiated.

There will be situations when the straightforward—obvious—battle cannot be avoided. In these circumstances, masters of strategy will be able to overcome the adversary without suffering losses by carefully introducing the element of surprise into straightforward battles and conflicts through innovation. Surprise provides an 'edge'—either by creating unexpected but conventional outcomes or by the deceptive and/or illusory influence on the cognitive domain that, in turn, creates the required outcomes. Even in the stanza regarding strategy, Sun Tzu mentions the need to consider surprise as an important element in the overall formulation of strategy while also realistically assessing the circumstances.

All actions in the battlefield will have to be formulated, initiated and successfully completed within a very carefully crafted strategy. A winning strategy will take into account a myriad of factors—ranging from the comparative capability assessment of the competing forces to the national warfighting ethos at the highest levels—and both innovative and traditionally proven methods to improve combat efficiency. Sun Tzu states that such a strategy will ensure that adversary forces are not only competently contained, but also decisively defeated without any uncertainty or undue trouble. He believed that, when efficiently implemented, such a strategy would be able to completely annihilate the adversary without overly stretching one's own forces.

In modern conflict, engaging the adversary can be done in different ways depending on the circumstances and the ultimate objective. The spread of engagement can vary from the lowest level of punitive action to a full-fledged war using all elements of national power. Air power combines the winning characteristics of a force that Sun Tzu advocates—innovation, flexibility and capacity for virtual action—and is a premium capability when employed by knowledgeable commanders. Offensive air power can be used across the full spectrum of engagement or conflict and in certain cases would be the force of choice. This is especially true of situations wherein punitive strikes are demanded or in cases where the targets are distant, but need to be neutralised in a time sensitive manner for strategic effect.

Air power's offensive capability, which can be applied proportionally with discretion and precision, becomes a prized capability in contemporary conflict where even unintended collateral damage is unacceptable. On the other hand, defensive employment of air power in the engagement of the adversary could lead to unacceptable losses and therefore should only be resorted to after careful planning that takes into account possible attrition and its tolerance level within the force. Such employment of air power may be dictated by political or other considerations, sometimes extraneous to the military. Surprise is easiest to achieve in the employment of air power since preparations for offensive action can be shielded from adversary surveillance and reconnaissance. Further, a relatively small element of air power can create effects that would require the application of a much larger component of ground or maritime forces. In extreme cases, pre-emptive strikes


on adversary centres of gravity, which create the maximum surprise, are best executed by the employment of air power done by optimally combining the necessary capabilities resident in the air force. Air power is ideally suited to creating the second-order effects that Sun Tzu refers to in this stanza.

*Air power combines the war-winning characteristics of innovation,
flexibility and capacity for virtual action*

Offensive air power can be employed across the full spectrum of conflict

*Air power can achieve surprise relatively more easily than
other military capabilities*

The Power of Surprise



In war,
The Straightforward will lead to engagement;
The Surprising to triumph.

Warriors skilled in surprising the enemy—
Are infinitely varied as heaven and earth;
As inexhaustible as rivers and sea.
They end and cycle to the beginning,
Like the sun and moon;
They expire and cycle through to rebirth,
Like the four seasons.

In war, combat is initiated by regular and direct actions but victory is gained by surprise or indirect methods. For warriors who are skilled in the application of indirect tactics the possible actions are as varied as the heavens and earth, unending as the flow of rivers and inexhaustible as the sea. Like the sun and the moon, they end only to begin anew and like the four seasons, they pass only to return again.

The implementation of a direct strategy will lead to the commencement of a conflict and engagement with the adversary in a conventional manner. This is likely to give the adversary a false sense of complacency that the progress of the conflict is predictable. The plans to initiate unconventional action must be very carefully concealed so that when it is unleashed on an unsuspecting adversary, the effects are maximised. Sun Tzu conceived of the element of surprise not merely as surprise attacks when the adversary is least expecting it but he used the term surprise to mean unusual action and in the current lexicon this should be translated to encompass some elements of innovation. Innovative employment of military forces is a very powerful force multiplier and almost always turns the tide of the conflict towards the side that is adept at doing this. Further, the impact of innovation—both at the strategic and tactical levels—is dependent on the initial success of the methodology used. With time the adversary will be able to find countermeasures to the innovation and it would gradually lose its cutting impact. Essentially, the power of innovation is short-term and lies in its capability to influence and change the balance of power in a battle. Even very minor innovations that could be viewed as insignificant will have a salutary effect when they are employed during the course of a conflict and can even change its very nature.

Flexible Innovation in the Middle East Theatre, 2006

In mid-2006, an RAAF AP-3C was tasked to provide ISR support over a city where some coalition forces had just been killed. The aircraft arrived on station early, located the incident site and provided coalition forces with situational awareness of the area. Towards the end of the on-task period the AP-3C was requested to provide route clearance for coalition forces exiting the area by road. On completion, the aircraft was further tasked to provide route clearance for the coalition command element exiting the area over water. The AP-3C provided the necessary assistance and also advised the command element of suspicious activity both on the water and on land in the vicinity of their watercraft. The aircraft was again tasked to provide ISR support to coalition surface forces under fire in another city about 80 kilometres away. This was also accomplished.

Flexible innovation is a key to the success of manned ISR assets in providing situational awareness in the battlespace.

(Ref: Dr Sanu Kainikara and Group Captain Tony Forestier, OAM, *Air Power for Australia's Security: More than the Three Block War*, Chief of Air Force Occasional Paper No 1, Air Power Development Centre, Canberra, 2007, p. 20.)

The success of all strategies and tactics depends on mutual support between regular actions (straightforward or conventional) and irregular actions (surprising or innovative), and the flexibility of the command structure. A leader who exercises flexibility in

thinking to create innovative strategies is an asset to any force. Sun Tzu believed that such a leader will have a repertoire of possible innovations and unconventional strategies that is unlimited and inexhaustible. Unconventional strategies are based on constant change and their variations are numerous. Sun Tzu uses the analogy of the infinite variety in heaven and earth to denote the leader's repertoire of innovation to create surprise and the river and sea, in a more obtuse manner, to denote the capacity to adapt constantly and go through phases of action unendingly—river denoting change because of their constant flow and the sea denoting the large number of variations since the waters of the sea are inexhaustible.

The leader will also possess the acumen to choose the appropriate variation to suit the circumstances. Sun Tzu stated that a skilled leader will be able to put in place a series of innovations without a break. One particular innovation might finish, like the end of a season, but another will begin at the same time—like the waxing and waning of the sun and moon—so that the adversary is kept off balance through the entire conflict. In a conflict that started in a conventional manner, the sophisticated leader will switch to unconventional strategies at the appropriate time while retaining the initiative and the capability to adopt tactics of one's own choice at will. Unconventional strategies are compared to the seasons, which begin and end only to give way to another season in an endless cycle. Sun Tzu advised that adopting such strategies would always lead to victory. He believed that the environment—terrain, time, circumstances—offers the possibility of an infinite number of variations and, therefore, the opportunity to create innovative solutions.

Patton's philosophy of command was: 'Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.'

Carlo D'Este

Patton: A Genius for War, 1995

Sun Tzu accepted that innovations could have initial weaknesses and therefore could be effectively countered very rapidly. This can be further extrapolated to mean that weak innovations could lead to temporary defeat and that dynamic improvements will have to be made to ameliorate the weakness if one is to be victorious in the long term. It is noteworthy that Sun Tzu discusses the issue of failure in the context of surprise and innovation even though it is to emphasise that all ideas need not necessarily be successful. He viewed time as a basic factor in analysing the probability of success in the employment of the element of surprise and innovation. A minimum amount of time is necessary for successfully implementing innovative ideas in conflict as well as to create the necessary countermeasures to innovative ideas being used against one's own forces. Lack of time to develop and employ innovation properly could become a weak link in the process of exploiting indirect strategies.

In contemporary conflict the use of innovation has become a cardinal principle in the winning application of force. Innovation in the basic employment of the forces starts conceptually at the strategic level and, in terms of capability, percolates down to the operational and tactical level. Innovative use of air power is the basis of time sensitive targeting that combines surveillance and reconnaissance capabilities with precision strike through effective command and control, brought together optimally by an efficient communications network. Although the air power capability to carry out time sensitive targeting is well known, the rapidity with which it can be achieved and the stealthy way in which long-term surveillance can be carried out makes it a prized capability that is resident only in technologically advanced air forces. It also requires professional mastery of commanders at the operational level to adequately combine and leverage these capabilities to create effects that could even cascade to the strategic level.

Innovative use of air power also permits the concentration of ground forces through the use of airlift at the appropriate time and place that could make the difference between victory and stalemate in hard-fought surface battles. Once again, innovation in these circumstances is not so much the *modus operandi* being practised, but the effect created by the unanticipated actions that upsets the status quo. The basic characteristics of air power—speed, rapidity of response, penetration, reach and range—can be employed in various combinations to create asymmetry or unconventional employment situations that will deliver the quantum of force necessary to ensure that the balance in the conflict always favours one's own side. An air power professional will be able to create myriad options for unconventional actions by combining air power capabilities in different ways. Innovation in employment concepts will always bring about a winning situation.

Air power's capability to carry out time sensitive targeting (TST) is the product of an innovative combination of surveillance, precision strike and command and control

TST is a technology-enabled capability

The basic characteristics of air power can be employed in various combinations to create asymmetry

There are but five tones,
Yet their permutations—are more than can ever be heard.
There are but five colours,
Yet their permutations—are more than can ever be seen.
There are but five flavours,
Yet their permutations—are more than can ever be tasted.

There are only five notes on the musical scale, yet their combinations give rise to more melodies than can ever be heard. There are only five basic colours, yet in combination they produce more hues than can ever be seen. There are only five basic flavours, yet combinations of them yield more tastes than can ever be recognised.

Sun Tzu wrote a large number of his stanzas using metaphors to illustrate the point being made.² This stanza indicates that, although there is a finite range of principles in all the dimensions of conflict, the good strategist can apply them in an infinite number of ways. In this stanza Sun Tzu uses three similar verses metaphorically to bring out three important elements that underlie the basic aspects that contribute greatly to success in warfighting. The first verse is about ‘hearing’ or understanding the prevalent situation and how information can be analysed and arranged to gain an insight into the circumstances. There is a subtle interplay of knowledge, information and awareness here. Information, when analysed through the prism of known facts, produces knowledge that in turn creates situational awareness when applied to prevailing circumstances. One aspect of innovation is the art of creating acute situational awareness.

The second verse is about ‘vision’ or the ability to foresee the future based on which ideas are developed and implemented in a manner that assures victory—in other words, forward planning for victory. The ability to predict the future with sufficient accuracy and understand it to the required degree—vision—comes from adequacy of knowledge of the past and present. Vision is limitless and the optimal use of vision would be to foresee the innovations that have the potential to succeed. Since there are always limits to what can be envisioned, the skilled leader will be able to combine the few ideas that

² While most of the metaphors that Sun Tzu used are easily understood, there are some that lend themselves to dichotomous interpretations, leading to some amount of contentious debate. Sun Tzu’s metaphors have been interpreted in this book in accordance with the majority of published accounts, while discarding the more limited interpretations. Care has also been taken to ensure that each metaphor is interpreted to mean the same thing throughout the book.

can be well defined to develop a number of innovative ideas that can then be analysed and used contextually in planning the campaign. Innovation requires vision and a clear understanding of the possible. The third and final verse is about 'taste' or testing the innovation in a physical manner. This is a move forward from the intellectual connotations of the first two verses into the world of actual warfighting. This metaphor indicates the need to test the innovation within a cost-benefit analysis structure to ensure that the action being contemplated would, on successful completion, be of benefit to one's own forces and, in broader context, to the nation. Over everything else, Sun Tzu believed that every strategy must bring overall benefit to the State for it to be counted as successful. Innovation must be cost-effective and proven by testing before being employed.

Legend has it that Shaka altered the nature of fighting in the region for ever, by inventing a heavy, broad-bladed spear designed to withstand the stresses of close-quarter combat. Perhaps he did: certainly both Zulu sources and the accounts of white travellers and officials in the nineteenth century credit him with this achievement ... His military innovation made an impact on Zulu folklore, if nothing else, for Shaka certainly developed fighting techniques to an unprecedented degree, and there is a wealth of stories concerning his prowess as a warrior: he may, indeed, have been one of the great military geniuses of his age. In place of the loose skirmishing tactics with light throwing spears, Shaka trained his warriors to advance rapidly in tight formations and engage hand-to-hand, battering the enemy with larger war-shields, then skewering their foes with the new spear as they were thrown off balance. If the results are anything to judge by, Shaka's capacity for conquest must have been dramatic. By 1824 the Zulus had eclipsed all their rivals, and had extended their influence over an area many times larger than their original homeland.

Ian Knight

The Anatomy of the Zulu Army, 1995

The stanza is about the need for basic information superiority that can be converted through the employment of an optimum combination of assets to superior situational awareness. Although the three metaphors relate to different areas of the broader concept of information superiority, Sun Tzu brings in the aspect of situational awareness and alludes to the need to test the concepts. Most modern military operations are undertaken only after careful analysis of the existing situation and also after taking into account the possible future political, diplomatic and military ramifications of the actions being contemplated. This is situational awareness at the grand strategic level. The combination of an accepted future trajectory, clear understanding of the current circumstances and well-tested innovative concepts of operations are all primary requirements to assure success.

Air power assets are best suited to create the necessary situational awareness before, during and after the culmination of a conflict. Prior to actual conflict, air power assets are ideal to gather information covertly regarding the adversary's dispositions and intent, without having to violate borders physically. Space-based surveillance is capable of producing detailed information without even causing diplomatic furore. During the conflict, air power gathers and synthesises information across and beyond the entire theatre at the strategic level and within the battlespace at the operational level. It has the capability to provide tactical information very close to real-time that can effectively create a battle and war-winning edge if employed effectively. Air power also brings a range of physical options that can be employed to create the necessary outcomes.

Further, air power can be employed innovatively to manipulate the adversary's perceptions through virtual actions that create the needed effects. Development of efficient concepts of operations at all levels of conflict is an involved process and requires an in-built capability to validate them before being employed by the force in conflict. This requirement is not unique to air power, but is of added importance in the employment of air power because of the greater impact its kinetic application brings to the battlefield. Application of air power is a considered and conscious act—intelligently combining its capabilities in the field of information superiority, long-term predictability and employment of innovative concepts of operations.

Air power assets are ideally suited to create the necessary situational awareness before, during and after a conflict

Air power can provide near real-time information to tactical assets, which could provide a winning edge

Effective application of air power is dependent on a combination of information superiority, long-term predictability and innovation

In the dynamics of War
There are but two attacks—
The Surprising and the Straightforward,
Yet their Permutations are more than can ever be exhausted.
The Surprising and the Straightforward give rise to each
other
As they rotate and cycle without end,
In an inexhaustible circle.

In war, there are only two kinds of attack—the conventional and the unconventional—but the combination of these two gives rise to an endless number of manoeuvres. The comprehensiveness of adaptive movement is limitless. The straightforward and surprising—the regular and the irregular—are mutually reproductive; their interaction is as endless as that of interlocked rings; it cannot be determined where one ends and the other begins.

Sun Tzu believed that there is an indelible connection between new ideas and old, because new concepts will only be practical if based on proven old concepts. Ideas and innovations that change the fundamentals of the conduct of war can only be evolutionary and brought about by the combination of a number of ideas rather than one single idea. This stanza follows on from the previous and translates the metaphors of tones, colours and flavours to the actual conduct of warfare. Sun Tzu contends that there are only two types of warfare—conventional and unconventional—but that the combination of the two can create more manoeuvre options than can ever be exercised. Unconventional warfare means all types of conflict that are not conventional state-on-state wars and include guerilla warfare, insurgency, terrorism and irregular warfare. Further, the two are interlinked with conventional tactics being countered by unconventional means and further counter-countermeasures, the chain being endless with no discernible beginning or end. Existing technology and methods create the environment in which new and innovative methods can be tested and, when found to be successful, can gradually be incorporated as standard practice. In the conduct of warfare, the conventional and unconventional intermingle dynamically and cannot be easily segregated.

From the viewpoint of the conduct of war, there are two basic divisions—regular and irregular. The capabilities resident in forces would also be oriented towards either of them, dependent mainly on the force's chosen *modus operandi* and a number of lesser influential factors. Generally, conventional capabilities still form the mainstay of the military forces of sovereign states, whereas irregular forces rely more on unconventional capabilities and methods. When faced with the preponderance of military capabilities

resident in conventional forces, irregular forces tend to resort to asymmetric methods to narrow the capability gap. As Sun Tzu elaborated, one gives rise to the other and the counter tactics produce further developments. In the past few decades, conflict has evolved at a slow pace to become defined by irregular warfare. This does not in any way denigrate or lessen the need for a State to foster conventional warfighting capabilities, but reinforces its paramount position in the hierarchy of force projection capabilities. Military forces must be able to adapt conventional capabilities to counter irregular tactics effectively while retaining the ability to employ basic conventional power to win battles, campaigns and wars.

Air power in its truest form is the epitome of conventional military power. However, it is also capable of transforming very rapidly into unconventional power projection. The concept of air power employment in the pursuit of deterrence and virtual application to create the necessary effects are fine examples of such usage. This flexibility is very difficult to inculcate within the force to the degree necessary for it to be effective and requires dedicated training and education of the personnel. The ability of air power to maintain high-end conventional capabilities while being able to draw down rapidly into a low-tech and low threat environment is perhaps not matched by any other force projection capability.

Air Power Flexibility — Show of Force

In the lead-up to and the actual elections in Iraq in 2005, air power played a series of unconventional roles that were critical in ensuring their peaceful conduct. Armed fighter jets carried out a number of low-level fly-pasts to clearly indicate intent to the restive population. Security forces were airlifted to the polling sites to increase the concentration of force. Subsequently, when the polling at a particular place had concluded, they were again airlifted to another place to ensure safe polling. This provided tremendous flexibility to the surface force commander. Armed helicopters flew around polling stations to carry out surveillance and provide initial rapid response if required. By airlifting the ballot boxes, along with international observers, at the completion of polling, air power ensured that the elections were conducted safely and also in a transparent manner.

This was a classic demonstration of the unconventional employment of air power to achieve effects without resorting to the actual use of kinetic attack and showcased air power's flexibility and adaptability to deal with extraordinary situations.

Adaptation to irregular conflict is not easily achieved and requires dedicated exercising of the change constantly to iron out difficulties that arise. This process also provides the opportunity to employ an infinite number of tactics, as the occasion demands, and

analyse their efficacy. The outcome of implementing the appropriate strategy and tactics in conflict is an unsettled adversary—regular or irregular—who will not be able to predict the next manoeuvre and, therefore, will always be reactive. Consequently, they will not be able to assume the initiative or even have manoeuvre options in any conflict. While the impact of such flexibility and adaptability is visible predominantly at the operational and tactical level, it can also be employed at the strategic level with great effect. The flexibility of air power can produce a force capable of creating an unending stream—both sequential and variations in available options—of effects in both the conventional and unconventional domain of warfare, simultaneously if required, which is unique and can become a war-winning factor when utilised with panache.

In its basic form, air power is a major conventional military capability

Air power has the flexibility to transform rapidly into an unconventional capability for irregular warfare

Air power can produce an unending stream of effects in both conventional and unconventional domains of warfare, simultaneously

Creation and Restrained Release of Force

A rushing torrent uproots boulders along the way,
Such is the energy of its momentum.
A swooping bird of prey pierces its target along the way,
Such is the precision of its timing.

Hence, skilful Warriors:
Have devastating Momentum
And precise Timing.

Their
Momentum is like a tautly drawn crossbow;
Timing is like the release of the arrow.

When the speed of the rushing torrent moves boulders—this is momentum; when the speed of the swooping hawk strikes and kills its prey—this is precise timing. Thus the momentum of the skilled warrior is overwhelming and his timing of attack precise. Momentum is combat power, like drawing a crossbow; timing is the decision for restrained release, like pulling the trigger.

Sun Tzu uses the metaphor of the torrent of water in flood that carries away boulders in its path, its momentum altering everything, to indicate the force of change. Momentum is not purely winning every time, but winning with the use of various strategies that apply constant pressure on the adversary. Timing of a strike is critical for its success and has been metaphorically compared to the suddenness and precision of the swoop of a hawk. Timing of a strike has three contributory components; suddenness, power and accuracy. A skilled leader will have the momentum required to carry the entire force along while planning and executing a campaign and have the acumen to be precise in the timing of the strike. When translated to the force as whole, momentum is the combat power and timing is the employment of precise strike capability that in combination are the basis for the strategy of surprise and momentum.

Momentum is the whole-of-force combat capability and has to be created in such a way that it is irresistible and decisive in its application. Control of the tempo of operations and the ability to carry out time sensitive targeting are essential ingredients to ensuring that the momentum of the force is irresistible. Strikes should be sudden, to retain the element of surprise; powerful, to destroy the target; and accurate, to ensure that there

is no collateral damage. This is the essence of the efficient application of combat power. Formulation of strategy must be done with due consideration given to the availability of combat power and its constituents. The other component of strategy is the timing of the strike, which is actually the launch of the campaign, after plans have been approved at the appropriate level of command. The underlying truism is that battles and campaigns must be chosen in such a way that they are winnable with the combat power that is available. This is of the utmost importance in retaining the momentum of the force.

Air power employment fits very neatly into the framework that Sun Tzu advocates. First, superior combat power must be created, such that it has overwhelming momentum to overcome any opposition. This is a function of three factors. Firstly, having adequacy across the spread of the capability spectrum and being able to maintain it at the appropriate level for the required duration. Secondly, training and operationally exercising the forces involved to bring them up to an acceptable level of proficiency. Thirdly, the provision of sufficient resources to acquire, develop, train, maintain and operate the sophisticated systems necessary to sustain air power capabilities in peace and war. This is critical for the successful application of air power.

Second, the precise application of this combat power when and where required and to the desired quantum is the underlying principle for the success of an air campaign. The three characteristics that impact timing in a contemporary context—surprise, precision and proportionality—are inherent in air power. Air power is critical to controlling the tempo of operations and the fundamental principles in its efficient application are discrimination, proportionality and accuracy. Sun Tzu's belief in the advantages of momentum and timing translates directly to employment of lethal air power that creates discriminatory effects. Combat air power can also be used in a deterrent mode while ensuring that the capability for extremely fast response, when required, is also visibly apparent.

Effectiveness of air power is dependent on:

- adequacy of the spread of capabilities,*
- training and exercising, and*
- availability of resources*

*Precise application of air power is a primary requirement for the
success of the air campaign*

Combat air power can also create deterrent effects

In the tumult of battle,
The numbers and confusions and comings and goings
Make the battle seem disordered—
And yet there is no disorder.
In the confusion of the melee,
The blending and merging and chaos and commotion
Make the Force seem encircled—
And yet defeat is out of the question.

Apparent disorder is a product of control;
Apparent fear, of courage;
Apparent weakness is a product of strength.

Orderly disorder is a matter of Analysis.
Courageous fear is a matter of Direction.
Strong weakness is a matter of Positioning.

Even in the chaos of battle, the commander must be able to keep the forces intact and in formation. Even when the battle is confused and the force seems to be encircled, a skilled commander will not face defeat. In the confusion of combat, even when the force seems encircled, a skilled commander will not face defeat. If disorder is to be feigned to lure the enemy on, first there must be perfect discipline; if timidity is to be displayed to entrap the enemy, there must be extreme courage; if weakness is to be paraded to make the enemy overconfident, there must be exceeding strength. Therefore, careful planning can bring order out of chaos, strength of command can elicit bravery out of cowardice and appropriate formations can develop strength from weakness. Nothing is fixed in the laws of warfare.

Analysis, direction and positioning of the forces are essential elements of a good strategy, which in turn uses control, courage and possession at the appropriate times to ensure success. Sun Tzu provides the overarching answer to ensuring victory, by exhorting commanders to assume that in war nothing will go according to plan. There are two aspects to the disorder that is an inevitable part of warfare—first is the need to deal with the actual disorder that ensues after battle has been joined and the second is the deliberate use of feigned chaos to confuse the adversary. Since war is always complicated and confused, the force must retain its flexibility and must possess strong capabilities that are contextually suited to prevail in combat. In combination with skilled command capable of forcefully manoeuvring the forces, this provides the basic requirements for the

creation of a victorious combat power. Sun Tzu's emphasis here is more on adaptability and correct positioning and less on detailed planning. However, this does not mean that planning is superfluous, but that plans must always have built-in flexibility to cater for and overcome the chaos that all wars, campaigns and battles bring about. Careful planning that retains sufficient flexibility can create order out of disorder, courage that accepts fear is a potential energy that can turn to bravery under competent command and positioning and manoeuvre can turn weakness to strength.

In a real sense, maximum disorder was our equilibrium.

T.E. Lawrence, 1885–1935

Military forces always plan for order in their manoeuvre, but the very nature of war is one of chaos. Therefore, a commander must understand that planning for orderly manoeuvre does not automatically make a battle flow in an orderly manner. There are two fundamental factors that can ameliorate this issue. First, chaos and disorder can be countered optimally by the flexible application of force through the employment of innovative and adaptive concepts that in turn provide a certain amount of the element of surprise. The second factor is the resident combat capabilities of the force that must be resilient enough to overcome the adversary's power projection capabilities. Efficient command and control systems and the professional mastery of the commander will be critical elements in ensuring that the flexibility and combat capabilities of the force are efficiently employed to achieve the laid down objective.

At the operational and tactical levels, the display of disorder, cowardice and weakness should become part of the deception plan so that the enemy is lulled into a false sense of superiority. Outward display of disorder is the product of intense training and strict discipline; the courage to display apparent cowardice stems from supreme confidence in the overall combat power of the force; and the willingness to display weakness is built on the strength of exemplary command and control. It is also necessary to contain the enemy actions and not provide any opportunities for them to exploit. This can be achieved by dominating the adversary at all levels—starting from the strategic to the tactical, in both the cognitive and physical domains.

This stanza puts forward a complex concept. At a fundamental level it explains the need for planning, direction and correct positioning to overcome the inherent chaos of war in the physical domain, which is fairly straightforward. At a more complex level it is more involved and refers to clever strategy that uses outward displays of disorder and cowardice to deceive the adversary—an effect in the cognitive domain. Only a force that incorporates a great deal of innovation, flexibility and absolute confidence in command at all levels will be able to implement such a complex strategy. It emphasises the necessity

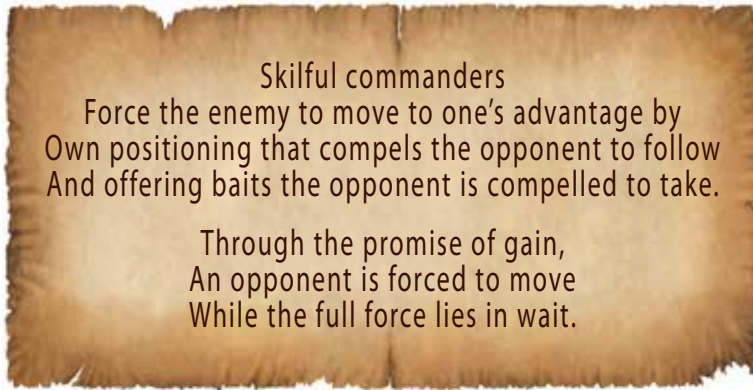
to be flexible at all levels of the conduct of war and throughout the spectrum of conflict. This should come as a second nature to the practitioners of air power since one of the primary characteristics of air power that gives it an edge over other forms of military power is the inherent flexibility that is instinctively brought to the fore in its application. In addition to flexibility, innovation is another aspect that is optimised in air power application. Innovative application of available air power almost always provides the opportunity to seize the initiative and control the direction and tempo of the conflict. This is critical to victory and careful leveraging of the advantages that have already been obtained can create greater control of the emerging situation.

At the operational level, flexibility and the competency with which it is applied can be the difference between victory and defeat. Air power is particularly susceptible to being less than fully effective when applied without its inherent flexibility being exercised. Air campaign planning must have built-in flexibility and must permit field commanders the decision-making authority to be able to decide on the optimum course of action in a flexible manner in order to derive maximum benefit from air power capabilities. The history of effective air power application is a long list of tactical innovations that have optimised its impact on the battlespace. Flexible application of innovative combat power is one of the cornerstones of the effectiveness of air power throughout the spectrum of its capabilities.

*The primary characteristics of air power allow it to implement
complex strategies effortlessly*

*Innovation is optimised in the application of air power, providing the
opportunity to seize and maintain the initiative*

Air power's inherent flexibility maximises its performance



Skilful generals keep the enemy on the move by manoeuvring their own forces and when necessary surrendering something that the enemy is bound to snatch at. They force the adversaries to move with the prospect of gain by leaving opportunities that the enemy will surely take, and wait for them in an ambush in strength. Skilled warriors determine all movements of the enemy by signs that the enemy leave behind.

While the previous stanza explained the need for flexibility, this one is a reminder of the basic rules of strategy. Sun Tzu is ensuring that in the quest to apply flexibility the primary objective of strengthening one's own position is not forgotten. He emphasises that strong positioning is achieved through innovation and surprise. There is also another aspect that is left unsaid, but can be inferred, that a dominant position prevents conflict, that is direct confrontation. A capable commander forces the adversary to move through the implementations of a variety of means, if necessary even by surrendering captured areas or offering lucrative baits, while laying an elaborate ambush to deliver a crushing blow with the full might of one's own force. These are intricate manoeuvres and can only be conducted after careful planning that is the foundation for the formulation of strategy. By placing this stanza in the context of skilled commanders, Sun Tzu explains the need to align tactical and operational level actions with the larger strategy and campaign plans. The strategy in this case will be based on attaining and retaining a dominant position, by indirectly forcing the adversary to take certain actions for which one's own forces are already prepared.

The technique of 'according with' the enemy's expectations and desires requires first determining what they believe and want, then apparently conforming to them until the situation can be exploited. Definition: When the enemy wants to take something and you yield it, it is termed 'according with'.

...If the enemy wants to advance, be completely flexible and display weakness in order to induce an advance. If the enemy wants to withdraw, disperse and open an escape route for their retreat. If the enemy is relying upon a strong front, establish your own front lines far off, solidly assuming a defensive posture in order to observe their arrogance. If the enemy relies upon their awesomeness, be emptily respectful but substantially plan while awaiting their laxness. Draw them forward and cover them, release and capture them. Exploit their arrogance, capitalize on their laxity.

Seventeenth Century Ming Dynasty Text,
Quoted in Ralph D. Sawyer,
The Tao of Spycraft, 1998

Operational art is a combination of planning, positioning and manoeuvring of forces to optimise the capabilities of the available forces. This optimisation of capabilities has to be aligned with the contextual need of a particular mission, which means that there is an indelible relationship between combat power and the prevalent and emerging situation for mission success. In this case, position of the force, as mentioned by Sun Tzu, must be understood to encompass not only the physical position of the military forces in conflict or near-conflict situations, but also the strategic positioning of the nation in terms of resource availability, socio-political and economic strength, and the broad security environment within which it is compelled to function. Shaping the adversary's actions at the grand strategic level is a long-drawn process and must be undertaken only through careful planning and understanding of the broader issues involved. One's own strength should be leveraged initially to contain that of the adversary and subsequently overwhelm them with expanded capabilities brought to bear with superior manoeuvres. The basic theme of this stanza is based at the operational level, but it has direct connections to the strategic level by implication and the broader understanding of what is meant by 'position'.

In an air power environment, along with astute campaign planning and its implementation, technology will be an important factor to be considered in determining positioning. Positioning in this instance would also encompass the capability spread of the force as well as its proficiency to enhance technologically the resident capabilities of the force at any given time. The stanza, although focused at the operational level, can be extrapolated at the tactical as well as the strategic level from the viewpoint of air power application. At the tactical level, it merely means that deployment and positioning of squadrons and flights should be done with the objective of achieving air superiority and

thereafter maintaining the necessary level of control of the air in the area of immediate interest for the required duration.

Control of the air can directly affect the adversary's warfighting capability by denying them the use of air and disrupting their manoeuvre options. This would compel them to alter their pre-planned strategy. At the strategic level, control of the air impacts the campaign planning in two ways. First, is the need to establish control of the air, since it is a prerequisite for all operations and second, to determine the methodology of obtaining the necessary level of control at the theatre level. Only such theatre-level control will facilitate operational battlespace control. The planning for a theatre-level campaign that would be of longer duration and at times extremely intensive will have to be done taking into account requirements for the sharing of limited air power assets with other theatres and therefore accepting the priorities as laid down at the strategic politico-military level. Such considerations might at times require acceptance of a lesser level of control of the air than optimum for some duration of the campaign till the situation can be reverted to an acceptable level.

Managing the ebb and flow of such manipulations requires extremely high calibre command capabilities. Skilled air campaign planning will be able to ameliorate the issues that might otherwise be a hindrance to achieving control of the air and to carrying out subsequent missions successfully. Although Sun Tzu called for laying down ambushes, in the employment of air power, this translates to keeping sufficient force capability in reserve to be employed rapidly when the situation is apt. Such a strategy will be successful only when control of the air has been obtained before a predetermined critical point in the campaign. The ratio of the quantum of forces committed to the campaign and those kept in reserve, as well as the identification of the opportune moment to employ the reserves, will have to be decided at the highest level of command.

In an air power context, campaign planning and technology are major factors in determining the positioning of the force

The concept of control of the air has implications at all levels of the conduct of war

Planning and executing a successful air campaign requires extremely high calibre command capabilities

Those skilled in conflict
Do not hold others responsible.
Skilled warriors exploit the potential energy,
And travel like timber and boulders.

It is the nature of timber and boulders—
To be still on level ground; move on steep ground;
Square, they halt; and round, they roll.
Skilfully deployed forces,
Are like rounded boulders
Rolling down a mighty mountain.

These are all matters of potential energy.

The sophisticated commander strives to achieve the combined effects of combat power and does not require too much from individuals to achieve victory. In exercising combat power, advantage must be taken of emerging situations by adapting the employment of forces optimally. Forces behave like logs and rocks—their nature is such that they are still when on a level place; move when on a steep place; stop when they are squared; and roll when they are rounded. Momentum created by the skilful leader unites the force. Thus the potential energy of troops, skilfully commanded in battle, is like that of rolling rounded boulders down a high mountain. Experts in war depend especially on opportunity and expediency.

In this stanza Sun Tzu discusses two separate but interconnected elements. The first is about command and the second regarding appreciation of the prevalent situation vis-à-vis the position of own and adversary forces. Competent commanders only place limited and well-calculated responsibility on the officers and troops subordinate to them while assuming strategic command and control themselves, effectively freeing the force to achieve operational and tactical goals. Detailed analysis of the prevailing situation will provide a clear indication of the best course of action. Sun Tzu believed that adaptability is a critical factor in ensuring that the employment of force is optimised to one's advantage. He compares the fielded forces metaphorically to logs and boulders to explain the importance of the prevailing situation and the influence of force composition on manoeuvre. In circumstances wherein the opposing forces are equal in capability—level ground—there is very limited scope to manoeuvre, but when one's own forces have superiority—steep ground—they can be overwhelming in their manoeuvre. Similarly,

when the force structure is unimaginative—square—they are not capable of adequate manoeuvre and when they are adaptive and innovative—round—they are capable of carrying out sophisticated manoeuvres.

The skill of the commander is in understanding the circumstances under which the force is being deployed so that it is always employed under favourable conditions. Sun Tzu compares the skilfully deployed forces, positioned to gather momentum in overwhelming the adversary, to rolling trees and rounded boulders that on their way down a steep mountain sweep away everything in front of them. The force applied is minute but the effects are enormous. By harnessing the potential energy of position and the momentum of a well-formed force, and releasing it at the most opportune moment, it is possible for even small forces to achieve great results. This is the art of strategic command.

When applied to contemporary air power employment, the stanza indicates three basic aspects that will determine the efficacy of air power in a given situation. One, the factors of which commanders at the strategic level must be aware in order to be successful; two, the overall capability of the force as judged and appreciated at the various command levels; and three, the analysis and calculations necessary to ensure that the design of the force is optimised for the efficient application of air power and that the effects created are at least commensurate with the effort involved.

Commanders at all levels must have the moral courage to take responsibility for their decisions and the actions that flow from them so that subordinate commanders and troops will be able to operate free of concern regarding the correctness of their actions. Commanders also have to be knowledgeable regarding the force's holistic capability and must have demonstrated ability to extract the maximum output from deployed forces. This requires an in-depth understanding of the force components, appreciation of the prevailing military situation, knowledge of the political stance of the nation and detailed professional military education. A successful commander will always have each of the above qualities in abundance. Air commanders must be part of the overall joint campaign planning process from the beginning and the air campaign plan must be such that it positions the air forces optimally within the broader national security and the grand strategic military plan. Success lies within this all important alignment.

The overall capability of the force, including its limitations, must be very clear at all levels of command. Only by understanding the limitations can remedial measures be instituted. The need is for peacetime capabilities to be assessed on a warlike footing so that adequate remedies to demonstrated weaknesses can be instituted before committing the force to conflict. The composition of the force, its structure—both operational and organisational—and its cohesiveness must be clearly analysed before the campaign, and the campaign plans must be tailored to accept the reality of the force's actual capabilities. Air power particularly is susceptible to being overstretched, which invariably leads to dilution of effort and slow deterioration in the overall capability. In combination this is a precursor to failure.

We find our attention drawn repeatedly to what one might call 'the organizational dimension of strategy.' Military organizations and the States that develop them, periodically assess their own ability to handle military threats. When they do so they tend to look at that which can be quantified: the number of troops, the quantities of ammunition, the readiness rates of key equipment, the amount of transport, and so on. Rarely, however, do they look at the adequacy of their organization as such, and particularly high level organisation, to handle these challenges. Yet as Pearl Harbor and other cases suggest, it is in the deficiency of organizations that the embryo of misfortune develops.

Eliot A. Cohen and John Gooch
Military Misfortunes: The Anatomy of Failure in War, 1990

After a force has been sharpened by training and exercises, the application of air power can only be optimised by intimate knowledge of the adversary's concepts of operations, strengths, limitations and centres of gravity. Identifying adversary centres of gravity, therefore, becomes an important pre-conflict activity. Further, since air power assets are always in demand, adaptability becomes a crucial characteristic of the force as a whole. The application of air power has to be carefully planned, executed with utmost precision and discrimination, and must always be cautiously aligned towards achieving the strategic objectives of the campaign. Air power must be able to overwhelm the adversary and control the tempo and direction of the conflict to ensure that every mission, battle, campaign and war achieves the outcome that is desired at the highest level of command, without ambiguity.

Concentration of force—one of the cardinal principles of war—is like the proverbial rounded boulder rolling down a steep hill to which Sun Tzu refers in this stanza. In the application of air power, the necessary concentration can be achieved by physically concentrating air power capabilities at the desired adversary centre of gravity from one single source or from different bases and sources where air power assets are located. Concentration of force at great distances from the origin of the force is unique to air power and is achieved through strategic planning and coordination of effort.

The supreme art of command is the dextrous deployment and employment of the forces to create the maximum effect with minimal effort. Position, manoeuvre, capability—all combine within the ambit of the commander's ingenious decisions to create a war-winning force.

*Realistic appreciation of actual capabilities can avoid
overstretching air power capabilities*

*Air power is a primary contributor to identifying adversary centres
of gravity prior to conflict*

*Application of air power must be aligned to achieve strategic
objectives of the campaign*

Conclusion

If you put an empty gourd on the water and touch it, it will slip to one side. No matter how you try, it won't stay in one spot. The mind of someone who has reached the ultimate state does not stay with anything, even for a second. It is like an empty gourd on the water that is pushed around.

Takuan, Japan, 1573–1645
Quoted in Robert Greene,
The 33 Strategies of War, 2006

This chapter discusses the various strategies that can be employed to ensure victory with a focus on creating surprise and manoeuvre options. Sun Tzu emphasised the need to gather sufficient momentum within the force for it to become overwhelmingly powerful and the advantages of innovation at the physical as well as the conceptual level. He also put forward the concept that direct confrontation may not always lead to victory and that a judicious combination of conventional and unconventional strategies is more likely to be successful, especially against an adversary who is also comparatively equal in capabilities. The creation and restrained release of the force's momentum and the creation of illusions regarding one's own capabilities is expressed as a war-winning strategy.

Air power is one of the major conventional military capabilities of nation states and has three distinctive strategic advantages over other forms of military powers. First, it has the capacity to implement complex strategies relatively more easily than other military powers, second, it is the repository of a great deal of flexibility that permits its rapid

transformation to be effective in unconventional conflict situations and, third, it can create a series of effects at all levels of war in both the physical and cognitive domains, simultaneously if required.

Air power combines innovation and flexibility to achieve the element of surprise within the battlespace as well as beyond the immediate theatre of operations. In fact, air power operating in and around the theatre before, during and after the campaign is a primary contributor to creating sufficiently reliable and timely situational awareness for the commanders that, in turn, ensures decision superiority at all times. Offensive air power straddles the entire spectrum of conflict and when employed innovatively, combining its characteristics optimally, can become an effective asymmetric capability. Further, it also has deterrent capabilities that can contribute critically to conflict resolution in certain situations.

The effectiveness of the application of air power in the pursuit of a strategy of surprise and momentum is dependent on five major factors—the spread of its capabilities in the force, training of the personnel, availability and adequacy of resources, realistic appreciation of resident capabilities and the ability to be innovative in its application. Control of the air, a prerequisite for the success of all operations, depends on these five fundamental factors, buttressed by realistic campaign planning and professional command and leadership.

Command and control of air elements is always complex, and it is more so when the circumstances of their employment are dynamic and uncertain. Air power operates best under the tried and proven tenet of ‘centralised control and decentralised execution’, and the commander’s professional mastery is the linchpin in ensuring that the limited air power capabilities of a force are optimally employed in alignment with the grand strategic objectives of the nation.



6

Void and Reality

The Virtual and Physical Battlespace

The idea of creating illusions—of strengths and weaknesses, offence and defence, and manoeuvres and static dispositions—to obscure the existing reality is an underlying strategic concept in *The Art of War*. The chapter expands on the concept of weakness and strength, even though opposites, being complementary ideas that are irrevocably bound together in strategic military analysis. In any comprehensive analysis, the adversary's weakness is a benchmark of the strength that must be built up in one's own forces. Further, strengths can also indicate the weaknesses that are inherent in any force. In other words, one does not exist without the other. The same relationship also gets converted to creating illusions that are meant to mislead the adversary and force them to make intemperate decisions that can then be turned to one's own advantage. In formulating strategy, therefore, strengths as well as weaknesses have to be considered together in order to ensure that it is developed in a

holistic manner and is contextually as close to the ideal as possible. In contemporary terms this is indicative of operating within a strategy that encompasses both the virtual and physical battlespace in a campaign.

The opposing factors have been expressed in the original Chinese as *xu* and *sat*. *Xu* is readily translated as weakness, but in various ways also includes the concepts of void or emptiness, ignorance and need. Likewise *sat*—translated as strength—is the same as the concepts of fullness, knowledge and fulfilment. The two factors are complex and have meanings in the physical as well as cognitive or virtual domains when applied to a military force. The interplay and unity of these factors in formulating concepts is critical because every force and every situation is a combination of both strength and weakness. Skilful commanders are the ones who can exploit strengths while ameliorating weaknesses. There is also an indelible connection between knowledge and strength—knowledge of the adversary’s weaknesses can be easily converted to one’s own strength, leading to victory in battle.

The chapter is a follow-on from the previous ones and explains the need to manipulate the adversary in both the cognitive and physical domains, while denying them the opportunity to manipulate one’s own actions; that is, controlling the perceptions of weak and strong points. Sun Tzu explained that strategic science indicates that any weakness—real or illusory—that is made apparent to the adversary will invite them to initiate offensive action through that area in the battlespace. These openings can be at the physical level in the battlespace or at the cognitive level in the war of ideas and ideology that, at times, transcends and, at others, dwells deep into the physical world of power projection by military forces.

Creating Imbalance

First to occupy the place of conflict,
Face their opponents in comfort.
Last on the battlefield,
Charges into conflict exhausted.

Those skilled in combat
Take the initiative over the others,
Denying them the chance to take the initiative.

Opponents can be lured to approach
Through the promise of advantage.
They will hesitate
When threatened with harm.

When opponents are fresh, tire them;
When satisfied, starve them; When calm, unsettle them.
Appear at locations to which they must hasten.
Hasten to unexpected locations.

Whoever occupies the battlefield first and awaits the opponent is fresh and well prepared, while those who come later and rush into battle are fatigued. The clever combatant dominates the enemy and controls their actions and manoeuvres without allowing own initiatives to be affected. The adversary can be brought to battle by offering perceived advantages, while they can be kept away by the assurance of harm. If the enemy is relaxed, they should be harassed; when well fed, they should be starved; and when they are steady and camped, efforts must be made to move them. One should manoeuvre own forces to positions which the adversary must hurry to reach, and appear suddenly in unexpected areas. The mark of a great commander is that he fights on his own terms or does not fight at all.

Sun Tzu lists three strategic principles for the attainment of superiority or strength. This stanza explains the first of these, that is the manipulation of the adversary, through preparedness, psychology and physical actions. Strategy is primarily concerned with advancing one's own position vis-à-vis that of the adversary. Preparedness is not merely the physical alertness of the force, but includes the ability to create fresh concepts in

terms of operational art and tactics that the adversary may not be familiar with and, therefore, will be unprepared to counter. By innovative employment of the force a skilled commander creates a situation of the adversary being unaware of actions being initiated and unprepared for the battle. The key to attaining an unassailable position in battle is to be able to seize and retain the initiative from the earliest possible opportunity. This will assure that the adversary is always dominated and will have no opportunity to threaten one's own forces.

'Pressing down the pillow' refers to one's efforts not to let the head of one's opponent rise. In battles based on martial strategy, it is taboo to let your opponent take the initiative, thus putting yourself on the defensive. You must try at all costs to lead your opponent by taking complete control of him. During combat, your opponent intends to dominate you as much as you want to dominate him, so it is vital that you pick up on your opponent's intentions and tactics so as to control him ... According to the principle of martial strategy, you must be able to control your opponent(s) at all times. Study this point well.

Miyamoto Musashi 1584—1645
The Book of Five Rings

By understanding and manipulating their needs and/or weaknesses it is possible to bait the adversary forces to manoeuvre towards one's own preset positions, thereby making them face danger and creating a disadvantageous position for the adversary. As a corollary, it is possible to keep an adversary force away from areas in which one does not want them to operate, by forcing them on the defensive through attacks on their vulnerable points or even the threat of attack on their identified, indefensible positions. These are both actions at the psychological level and affect the cognitive domain of the adversary. At the physical level, all strengths are only temporary and, therefore, adversary strengths have the potential to be altered to suit one's own requirements. Sun Tzu emphasises that in practice, strength—fullness—is a vulnerable state, because over time every strong position can be worn down and all fullness can be diluted towards emptiness. Therefore, a good strategy must include provisions to physically harass fresh forces of the opponent without much disruption within one's own forces, cut supply lines to deplete their provisions and create a general feeling of unsettlement within them through limited but effective attacks. This can be done by manoeuvring to positions where the adversary will be forced to hurry reinforcements and by attacking in places that are least expected.

When transposed to the context of a contemporary conflict, this is one of the many stanzas that directly and indirectly indicate the need to obtain and maintain control of the air. Sun Tzu's injunction to occupy the conflict area first means dominating the theatre of operations during the preparatory phase of the conflict itself, which will force

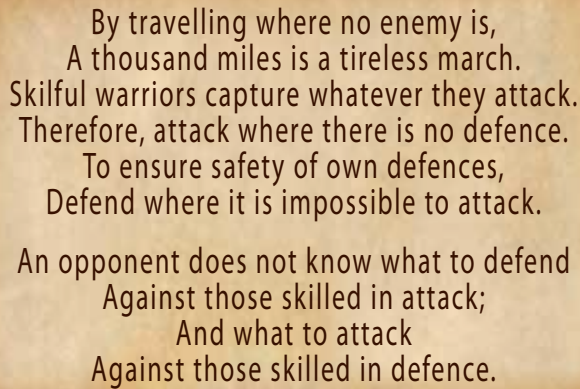
the adversary to contest the domination from a position of disadvantage. While air power is an offensive capability, offensive actions always tend to create more friendly attrition than when the force is on the defensive. Therefore, the force that has to contest control of the air will be at a disadvantage in terms of possible battle attrition. Under these circumstances the adversary may opt to fight to gain just sufficient control of the air—delineated in time and space—to carry out their operations, thereby reducing the possibility of heavy attrition. Further, the advantage of being in control of the air and dominating the battlespace at the beginning of the conflict is that it will then be possible to practise the art of offensive defence which is one of the optimum ways to employ air power.

The second part of the stanza is directly affected by the first, in that, once control of the air has been established, both psychological and physical actions against the adversary can be undertaken with relative ease. Psychological effects can be achieved by the employment of air power to carry out nuisance raids and punitive actions. It can also be achieved by disproportionately heavy reaction to adversary action, although in the current international political environment this may not be readily accepted by most democratic nations. Physical harassment of the adversary forces—both surface and air—and the interdiction of supply lines is more easily achieved with minimal effort under friendly control of the air. Further, own surface forces will be able to manoeuvre freely, thereby creating the environment to precipitate enemy manoeuvre at a time of one's own choosing as well as carrying out operations that will take the enemy by surprise. The effective implementation of the principle of manipulation of the adversary hinges on the air force achieving and maintaining control of the air.

*Sun Tzu's strategy for attaining superiority directly indicates the
paramountcy of control of the air in achieving victory*

*The art of offensive defence in the employment of air power is best
practised under conditions of friendly control of the air*

Air power can be employed to create psychological effects on the adversary



By travelling where no enemy is,
A thousand miles is a tireless march.
Skilful warriors capture whatever they attack.
Therefore, attack where there is no defence.
To ensure safety of own defences,
Defend where it is impossible to attack.

An opponent does not know what to defend
Against those skilled in attack;
And what to attack
Against those skilled in defence.

It is possible to march great distances without distress if it is done through areas where there are no enemies. Skilled warriors always capture what they attack and successful attacks are directed at the enemy's weak points. Defences will hold firm when even those places that are not likely to be attacked are defended. The enemy does not know where to defend against a skilled attack and does not know where to attack against a skilled defence. Emerge from the void like a bolt from the blue, strike at vulnerable points, shun places that are defended, attack in unexpected quarters.

This stanza lays out Sun Tzu's second strategic principle for the attainment of superiority—not only identifying but creating and subsequently fully exploiting the adversary's vulnerability by acting beyond their physical abilities and mental calculations. The adversary's physical capabilities should be made vulnerable and overcome through offensive and defensive manoeuvres, while the cognitive domain should be overwhelmed through sophisticated conceptual initiatives. When a force can manoeuvre freely without external interference and can attack anywhere while retaining the capability to defend all its positions, military strategy is complete. The ability to be successful in attack depends primarily on the adversary's weaknesses and perhaps more importantly on one's own ability to correctly identify and exploit them. Similarly the ability to defend against all odds is a function of understanding the adversary's strengths in the offensive and guarding against that advantage being used effectively against one's own weaknesses. Both offensive and defensive action will encompass the creation of illusions that hide the reality—manipulating the cognitive domain—and physical actions that negate any advantage to the adversary.

In the cognitive domain the efficiency and effectiveness of offensive and defensive actions would be dependent on knowledge. Achieving a dominant position, generating long-term vision, and developing strategic concepts that are sure to succeed, are all functions of astute employment of knowledge. As a corollary, weaknesses emanate from ignorance or unawareness of one's own position of strength. The adversary's ignorance must be identified and targeted while simultaneously leveraging one's own strengths. This will create a situation wherein the actions being initiated are beyond the full comprehension of the adversary, leading to confusion both in the physical as well as cognitive domains. Essentially, a skilled commander will be able to take advantage of all opportunities to seize and exploit enemy vulnerabilities and act beyond enemy understanding. The last part of the stanza regarding the relative incompetence of the adversary in defence and offence making it easier for the skilled warrior to triumph in both is an aphorism that states the essence of the entire strategy in a nutshell.

This stanza is concerned with the concept of both offence and defence in two distinct domains—the physical and the cognitive. By manipulating both to one's advantage, the adversary can be defeated. In air power terms, the physical domain is about rapid mobility and lethal application of force both in the offensive as well as on the defensive. Strategic global reach, achieved through air mobility, can bypass or avoid enemy defences and inhospitable terrain, becoming a war-winning capability in many instances. The responsiveness provided by airlift to contain emerging situations is unmatched and spans the entire spectrum of contemporary conflict. In combination with adequate intelligence, surveillance and reconnaissance (ISR), the strike capabilities of air forces can target and neutralise identified adversary centres of gravity to create the necessary effects. Similarly, long-term surveillance and skilled analysis of information will also be able to ascertain the offensive intentions of the adversary in advance, providing the opportunity to create sufficiently robust defences. The point to be noted here is that air power is inherently offensive in nature, making the defensive operations also tactically offensive.

In the cognitive domain, the same air power capabilities that shape the physical domain can be used in a nuanced manner to create deterrent forces at the strategic level. The ability of the air force to deploy surface forces rapidly to trouble spots, monitor enemy deployments and movements on a long-term basis and carry out lethal strikes if and when necessary has a salutary effect on the adversary. The demonstrated possession of these capabilities tends to make potential adversaries more amenable to diplomatic initiatives. Further, strategic long-term surveillance is the key to defining enemy centres of gravity prior to conflict, monitoring force deployments and providing sufficient early warning of impending attacks to own forces. Airborne surveillance is critical to monitor the progress of the conflict and the effects being created by strategic, operational and tactical level air activities.

The Wild Boar and the Fox

A wild boar was sharpening his tusks on a tree-trunk one day. A fox asked him why he did this when there was neither huntsman nor danger threatening him.

'I do so for a good reason,' he replied. 'For if I am suddenly surprised by danger I wouldn't have the time to sharpen my tusks. But now I will find them ready to do their duty.'

Moral: One should not wait for danger to come in order to get ready to counter it.

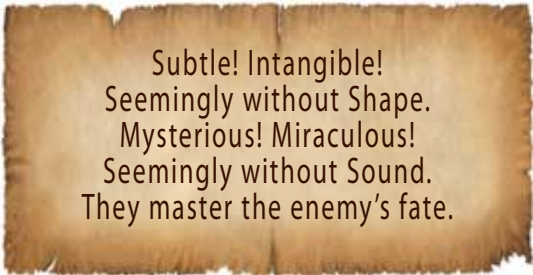
Aesop
Fables, 6th century BC

This capability, when well integrated with a responsive command and control structure, can ensure that one's own offensive efforts will always be successful, while creating insurmountable obstacles to the success of adversary initiatives. The fact that airborne assets—both in the surveillance role and the lethal application of force—have the reach, penetration and persistence to cover the entire theatre of operations and yet retain sufficient residual capacity to operate effectively beyond the immediate area of interest makes them coveted and critical elements in military capabilities. Sun Tzu's 'knowledge' is translated to reality in the modern battlefield by airpower, through airborne surveillance, manoeuvre options through air mobility, precision strike and time sensitive targeting.

Strategic global reach of air power is a war-winning capability

***When employed in a nuanced manner, air power capabilities can
create strategic deterrence***

***Sun Tzu's 'knowledge' is translated to reality in contemporary conflict
through the optimum employment of air power capabilities***



Subtle! Intangible!
Seemingly without Shape.
Mysterious! Miraculous!
Seemingly without Sound.
They master the enemy's fate.

Sophisticated commanders should practice the art of subtlety and secrecy and be so subtle and insubstantial that they leave no trace; their strategy is so divinely mysterious that it is inaudible. These commanders create operations with nuances and cleverness and can therefore determine the enemy's fate.

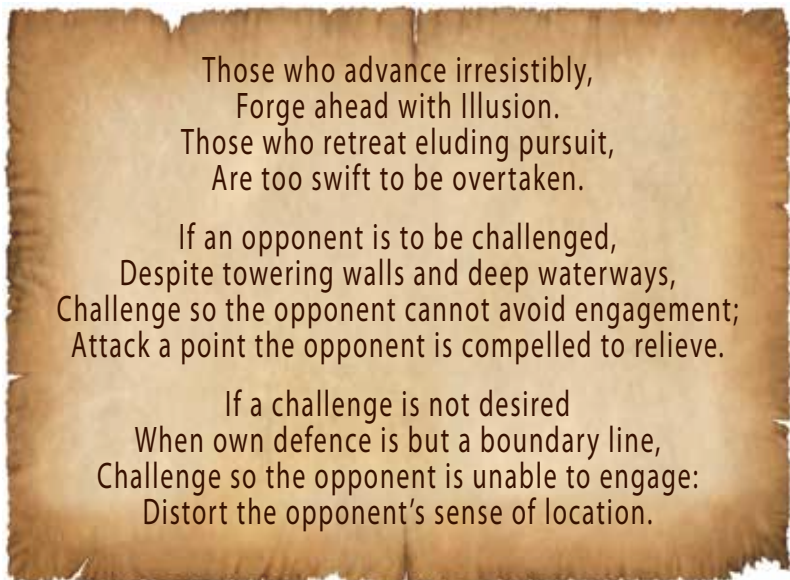
This is Sun Tzu's third strategic principle for the attainment of superiority—absolute impenetrability that assures absolute superiority. The imagery here is in relation to the adversary, in that a skilled commander will be able to manoeuvre the forces most of the time without leaving any clue, physical or virtual, that the adversary could gather and piece together to understand the intent. Denial of such information to the adversary will create total surprise within the adversary command structure regarding all actions being initiated by one's own forces. Essentially Sun Tzu advises that the adversary should be kept ignorant of one's own intentions. This can be achieved by keeping one's strategy secret from friend and foe alike until it is matured enough to be implemented openly at the opportune moment. The timing of revelation is of the utmost importance; if it is made known too early, the adversary will have opportunities to develop counter strategies and if the implementation is left too late, optimum results may not be forthcoming. A skilled commander will be a good practitioner of the art of subtlety in planning and secrecy in the implementation of well-formulated strategies. In this manner the fate of the adversary can be completely controlled by the sophisticated commander.

This stanza is about impenetrability of intentions till one is ready to reveal the strategy that is going to be employed in a particular battle, campaign or war. While this is true for all forms of military power, it may be relatively easier for air forces to maintain the façade of normalcy even when preparing for a large-scale offensive. Professional masters of air power will be able to employ their forces while masking not only their true intent but even some of the initial actions. The responsiveness and reach of air power can ensure that its assets are kept concealed from the adversary's intelligence operations till the commencement of actual operations. The concept of a pre-emptive strike also emanates from this idea of attaining absolute superiority through secrecy in planning and efficiency in execution. Air power is ideally suited to furthering this concept and, if employed innovatively within the principles of war with superior planning and execution, can achieve laid down objectives without great difficulty, as compared to the employment of surface forces.

*Even the preparations for a large-scale offensive air campaign can
be effectively kept concealed*

*Professional mastery of the air commander can mask the true intent of
an air campaign till the actual outbreak of hostilities*

*Air power is ideally suited to further the concept of pre-emptive
strikes to achieve superiority*



Those who advance irresistibly,
Forge ahead with Illusion.
Those who retreat eluding pursuit,
Are too swift to be overtaken.

If an opponent is to be challenged,
Despite towering walls and deep waterways,
Challenge so the opponent cannot avoid engagement;
Attack a point the opponent is compelled to relieve.

If a challenge is not desired
When own defence is but a boundary line,
Challenge so the opponent is unable to engage:
Distort the opponent's sense of location.

Offensive action should be undertaken using a combination of one's own physical and virtual irresistibility as perceived by the adversary. If the offensive is aimed at the opponent's gaps and weak points it will be irresistible and if withdrawal is done taking advantage of speed, the forces cannot be overcome. Military manoeuvres are based on speed—come like the wind, go like the lightning, and the forces will always triumph. To force the enemy to engage and give battle, despite their having strong defences, attack a vulnerable point that they are obliged to relieve; if battle is not desired and is to be avoided, when own defences are weak, take up a position that is not of the enemy's choice and challenge them in a way that creates an illusion of greater defensive strength.

This stanza is the first part of Sun Tzu's views on obtaining strategic-operational superiority. In this and the next stanza he extols five factors, four at the strategic-operational level and the fifth at an operational-tactical level. The four strategic-operational level factors are advance and withdrawal, attack, defence and concentration of force, with the fifth factor being the methodology to ensure actual or illusory numerical superiority against the adversary.

Advancing forces are obviously on the offensive and all offensive action must be carefully aimed at the weak areas of the adversary—their centres of gravity that have been identified and analysed for the effect an attack on them would cause. The infallibility of intelligence and analysis in ensuring the veracity of the chosen weakness is critical for the success of such offensive actions. When carried out with sophistication in planning and audacity in execution, these offensive actions will be irresistible and always lead to success. Such attacks compound the strength of the force with an illusion of virtual and physical presence throughout the battlespace that strikes with no warning, and is led by a commander with an almost mystical ability to see and know all about the adversary. On the other hand, all operational plans must also incorporate the option for a withdrawal if needed, while preserving the cohesion of the force. Sun Tzu emphasises the need to be able to retire or withdraw from actual combat at will, safe from pursuit. This is achieved by ensuring that one's own movements are more rapid than that of the pursuing force; relative speed in decision-making and execution of the decisions being the essential critical factors. Relative speed is the essence of warfare and is closely related to weakness and strength in military forces.

When it is imperative to directly challenge and engage the adversary, despite their strong defences, it should be done in a manner that they are forced to engage with no options available to avoid it. This is achieved firstly by not moving directly against the adversary's strong points, but by identifying and targeting areas that will be a mandatory obligation for them to defend in order to maintain the cohesiveness of their force and is also one's own preferred area of operation. For example, if the adversary is the invading force, then lines of communications and supply routes, within one's own territory, are critical areas that they will be forced to defend. Similarly, if one's own forces are on the offensive, targeting the adversary leadership will elicit a definitive response from them.

In war it is possible that the situation is such that one's own readiness may not be sufficient to offer battle and, therefore, it would be prudent to avoid battle at all costs. Under these circumstances, even when own defences are very fragile, direct engagement should be avoided by misleading the adversary regarding one's own dispositions, thereby making them target the wrong areas or not daring to engage at all. This can be achieved by the timely use of deception and illusion to mask reality and distort the adversary's situational awareness as much as possible. Both attack and defence requires detailed knowledge of the adversary's strengths, weaknesses and support systems.

If your organization is small in numbers, then do what Gideon did: conceal the members in the dark but raise a din and clamour that will make the listener believe that your organization numbers many more than it does ... Always remember the first rule of power tactics: 'Power is not only what you have but what the enemy thinks you have.'

Saul D. Alinsky,
Rules for Radicals, 1972

At the operational level of an air campaign, irresistible advance means the ability to carry out offensive actions against the adversary's centres of gravity according to the priority laid down by the commander without any significant interference from the opposing forces. This requires the ability to attack and prevail at will that creates a perception of irresistible force, which persists beyond the physical presence. Dedicated offensive air campaigning requires detailed planning taking into account adversary air defence network, their current dispositions, identification of weak areas as well as the centres of gravity. Such an appreciation would also indicate the requirement or otherwise of specialised offensive actions, like suppression of enemy air defences and electronic warfare measures, prior to the primary offensive. Withdrawal, and the relative speed with which it has to be accomplished to avoid enemy action, is easier for air forces to accomplish than for surface forces. Since most of the air forces would be operating from their own bases or from those of allies, it is relatively easy for them to withdraw from the conflict at the operational level and restrict themselves to merely defensive counter air operations.

Ensuring that the adversary engages in battle is achieved by selecting centres of gravity to be attacked that they would always be compelled to defend. These have to be high-value targets that, if neutralised, would have an immediate impact on the outcome of the ongoing battle or other vital areas that, when attacked, will have catastrophic strategic implications for the adversary nation. Under threat to such targets, the adversary will rise to engage even if they possess only very limited air power capabilities. An air campaign has immense potential to create large-scale damage and, therefore, it will be impossible to avoid battle when on the defensive. This is more so because the best way to neutralise such a threat is from the air and adversary air forces will be forced to respond, even when facing great disadvantages.

Avoiding direct combat is possible only if one accepts the damage that the adversary inflicts, even if the attacks are carried out against comparatively unimportant targets. This might not be a viable option when the nation is at war and, therefore, air forces will have to engage even when clearly on the defensive mode. However, Sun Tzu's advice to 'throw something odd and unaccountable in his way' to divert the focus of the adversary's attention and create the illusion of strategic centres of gravity that are not real can dilute the effects of their attacks. This deceptive ruse must be employed carefully since failure

in such an attempt could have serious strategic consequences. Disorienting the adversary through their lack of situational awareness will also achieve the same end result, but cannot ensure that the adversary will not carry out any attacks. Absorbing the ineffective stings on unimportant spots in one's area of interest would be the optimum way to avoid direct combat confrontation.

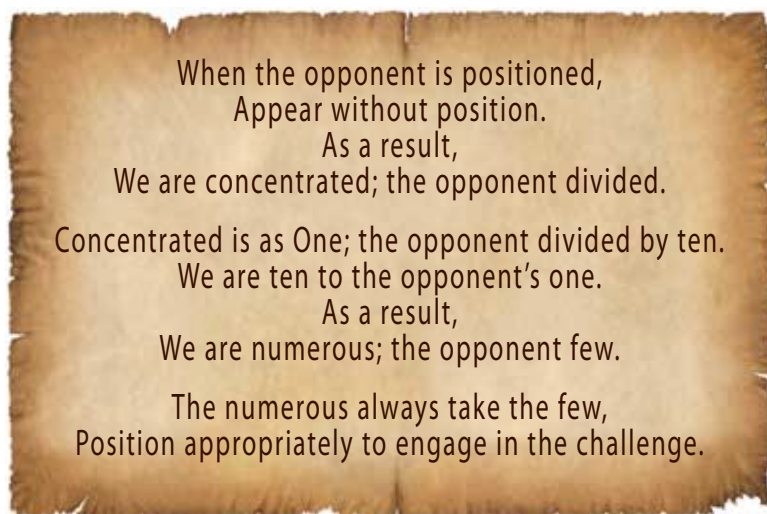
Strategic-operational superiority is achieved by ensuring that the balance of strength is in one's favour, developing and adapting appropriate strategy for both offence and defence, manipulating the adversary's decision-making process and distorting their reality through illusion.

Air power can create the perception of an irresistible force through:

- dedicated strategic planning, and*
- adequate situational awareness*

*By attacking selected centres of gravity, the adversary can be
forced to engage in battle*

*Deceptive ruses and illusory centres of gravity can disorient the
adversary and dilute the effectiveness of their attacks*



By discovering the enemy's dispositions while keeping one's own hidden, own forces can be kept concentrated while the enemy must divide in an effort to engage what they cannot see. This enables the concentration of own forces while the enemy, being unaware of the form, has to divide the forces to cover numerous points. Thus the whole force can strike individual fragments of the enemy at selected points with the assurance of numerical superiority. By attacking an inferior force with a superior one the opponents will be placed in dire straits.

This stanza covers the fourth and fifth factors in obtaining operational superiority—concentration of force and the way to divide the adversary strength to ensure one's on numerical superiority. The advice here is to hide one's own force dispositions while getting to know that of the adversary. If successful in doing so, this will bring double benefits. First, it will not be necessary to divide one's own forces into smaller elements, thereby maintaining the integrity of the force at an even higher level than the operational, if required. Second, the adversary will be forced to split their forces into smaller units in order to cover as much area as possible, thereby making them vulnerable individually to a numerically superior force. Under these conditions, one can easily achieve numerical superiority over an adversary who might otherwise have numerical parity if their force was allowed to concentrate. The combined effect is to be able to concentrate forces at the time and place of one's own choosing, which by itself is a war-winning factor.

At the operational level, the illusions that confuse the adversary and the deception that has been put in place will make them split their forces in order to cover as many openings as possible. This in turn will facilitate the imposition of numerical superiority at a place of one's choice because the adversary will be unaware of the disposition of one's forces. This will inflict a number of constraints on the adversary, leading to sub-optimum

performance and defeat. Smaller units are easier to deal with and if the cohesion between them can be broken they become vulnerable to attacks even by forces that only have numerical parity but are conceptually superior. The discussion above has not directly addressed the conceptual superiority issue, but by providing the five factors that will ensure strategic-operational superiority Sun Tzu is indicating, in an indirect manner, that such superiority is also dependent on consciously achieving conceptual superiority.

Concentration of force is one of the cardinal principles of war that air power delivers to the joint campaign. This is achieved through exercising the central tenet of air power application, that is centralised control and decentralised execution. By concealing operational deployments and having adequate knowledge of the adversary order of battle, it is possible to get a clear strategic picture of the campaign theatre and thereafter develop an appropriate air campaign. This situational awareness will also facilitate the positioning of adequate resources and assets at critical points that will then optimise their employment vis-à-vis the adversary disposition. If the adversary is ignorant of the actual deployment of the opposing force, then it will become incumbent on them to spread their forces across the entire possible area of operations. Most of the air forces do not have the numerical strength or the resources to do this effectively and yet retain strategic depth. Therefore, by spreading the force, they provide the opportunity for own forces to assume numerical and operational superiority at a place of one's choice. This provides the opportunity to utilise air power's area surveillance capabilities, air mobility and responsive precision strike in an optimum manner to find dispersed and hidden adversary forces and to concentrate forces rapidly to neutralise them.

There are two ways to ensure that numerical and operational superiority are maintained. First, by keeping one's own deployment completely concealed and second, by providing intentional displays of activity and deployment in disparate regions, some of which that do not even have strategic importance in the grand plan—by creating an illusion of activity and indications of false centres of gravity. Such decoys will force the adversary to split his force into smaller elements, diluting its cohesion and ability to concentrate force. The concept of concentration of force works best when applied against an adversary that has already been divided by other means and whose weak areas are already known. The tactical application of numerical superiority against an inferior adversary is a natural follow-on to this.

Air power delivers concentration of force in a joint campaign

*Superior situational awareness optimises the employment
of air power assets*

*Air power's area surveillance and precision strike capabilities can
be combined to neutralise even dispersed and hidden targets*

Evening the Numbers

The location of intended attack must not be known;
If it is unknown
The enemy must reinforce many places;
Thus there will be few
At the location where attack is initiated.

When the front is prepared, there are fewer at the back;
When the back is prepared, fewer in the front.
When the left is prepared, there are fewer on the right;
When the right is prepared, fewer on the left.
When every location is prepared,
Every location will have fewer in place.

Weakness stems from
Preparing against attack.
Strength stems from
Making the enemy prepare against an attack.

When your form is concealed, the enemy is in doubt and divides up his forces to guard many areas. The enemy must not know your choice of the battleground, for if they know it they will mass their strength to resist. When the enemy has to guard a number of places, they are perforce scattered in small groups and easy to attack. The concentration of force at one point will necessarily leave other areas weaker and unprotected. The more defences the enemy can be induced to adopt, the more impoverished they will be. Numerical weakness comes from having to prepare against possible attacks; numerical strength from compelling the adversary to make defensive preparations.

When the adversary is unaware of the plans and intended location of attack, they will have to be prepared to defend over the entire area of operations and a large number of critical points. This will force the spread of their resources and deny them the opportunity to resist in strength at any one point. Sun Tzu explains this concept in terms of the front and flanks of the adversary by stating that if they are prepared at the front, then the rear will be left unguarded, if the right is clearly defended, the left would be less defended and so on. The conclusion is that if the adversary is forced to prepare to defend

from an attack all along the front, the flanks and the rear, then their forces will be spread so thin that they will not have strategic depth at any point.

The stanza explains the reasons for inferiority in a force, primarily based on numerical strength. The first reason is, as explained, the necessity to spread the force across the entire theatre because of lack of situational awareness. The second reason is the formal stance of the force. Concentration of force is difficult when preparing for defence because of the inherent uncertainty in identifying the actual area of attack when on the defensive, irrespective of the availability of intelligence regarding the adversary. On the other hand, forcing the adversary to prepare defences and oneself taking the initiative for the offensive provides relative superiority in numbers and the ability to concentrate force far more easily, especially if deception can force the adversary to concentrate their efforts in the wrong areas. It is necessary to explain here that the concept of superiority or inferiority in numbers in Sun Tzu's era is the equivalent of a holistic assessment of force capabilities rather than purely the size of the force in the contemporary environment. In this instance, 'size' by itself is a matter of perception and perspective. A large entity must have many complementary parts that can be separately attacked, cleverly forcing it to divide along the visible seams. A sophisticated commander must have the ability to discern the different parts of a large force and identify the seams that separate them. These seams will be the weakest areas in a large size force and should be attacked to divide the force so that the smaller elements can then be independently targeted at the opportune time.

A defensive war is apt to betray us into too frequent detachment. Those generals who have had but little experience attempt to protect every point, while those who are better acquainted with their profession, having only the capital object in view, guard against a decisive blow, and acquiesce in small misfortunes to avoid greater.

Fredrick the Great
Instructions to His Generals

The two main points discussed in this stanza—situational awareness and posture of the force—are extremely important in the conduct of an air campaign. Situational awareness is not only a prerequisite for planning, but is primarily the product of the employment of airborne surveillance. Possessing adequate and contextual situational awareness while being able to deny the same to the adversary, starting from the pre-conflict phase, is a huge advantage at the beginning of the campaign itself. Even slightly superior adversaries can be made to lose their potential to have strategic depth by ensuring that they are unaware of one's own offensive plans, thereby forcing them to defend their entire area of interest. Further, this denies them the opportunity to concentrate forces at the

critical points of their choosing. For most air forces, covering the entire theatre, this will be a difficult task necessitating splitting the force into smaller groups. Under these circumstances, even if centralised control of the entire force is possible, its effectiveness will be dependent on the geographical area that has to be defended vis-à-vis the size and capability of the force.

Equally important is the peacetime posture of the force, which will be a reflection of the national ethos to security and fully influenced by the prevalent security environment. Air power is an offensive capability and produces the best results when efficiently used in the offensive. On the defensive, it becomes less flexible and more resource intensive in comparison. Effective defence of even a small area requires more air power assets than is required to effectively control a much larger area. This is a complex concept. Air forces have to gain and maintain control of the air as a mandatory precondition for all other operations. In this context, defence of any particular theatre of operation will mean having to fight and defeat an adversary that has already gained a certain level of control of the air and thereafter maintaining this control against adversary's offensive actions. This not only requires greater amount of air power capabilities and assets but also has the potential for own forces to suffer higher attrition.

On the other hand, it is far easier offensively to maintain control of the air that has already been obtained, even over large areas, as opposed to being on the defensive to retain control over smaller areas. Therefore, it is relatively easier to initiate offensive action early and gain control of the air. Offensive action will mean that the fight for control of the air is initiated by oneself and thereafter the requirement is only to maintain the control that has been gained against adversary action. When carried out from an offensive posture, such action will ensure that one always retains the initiative. The resource requirements are far greater in the case of an area defence as compared to concentrated attack. From a purely air power perspective, a national offensive posture is always a better situation in terms of its effectiveness.

Peacetime posture of the force and situational awareness are critical factors that affect the effective conduct of an air campaign

Inadequate situational awareness can dilute the potential of even superior forces

An offensive national security stance enhances air power's effectiveness

When the time and place of a challenge is known,
It can be met from a thousand miles.
But when the time and place of a challenge is not known,
The left cannot rescue the right,
The right cannot rescue the left,
The front cannot rescue the back,
The back cannot rescue the front.
The support is distant for troops separated by several hundred miles,
Or even by a few miles!

Knowing the time and place of the coming battle enables the forces to concentrate from even the greatest distance. If neither the battleground nor the day of battle is known, mutual support between the forces will not be possible. This is equally true whether the forces are separated by large distances or are in close proximity.

Sun Tzu defined challenge or battle as meeting a specific adversary at a specific time and place. However, he explained that this concept may not always be clearly understood. This stanza explains two basic principles of command in this uncertain situation; that of strategic planning based on situational awareness and flexibility of command at the operational level within the laid down plan. The more accurate the information is regarding upcoming battles, the more successful one will be in defeating the adversary through adequate preparedness. At the strategic level, if the details of a possible confrontation are known, it is possible for commanders at the highest levels to reinforce the available forces and achieve concentration at the required time and place, if necessary withdrawing forces even from faraway theatres that may not be in conflict or under threat at that time. This can only be achieved with adequate and reliable situational awareness. Strategic plans that rely on movement of forces between theatres for success have to be carefully crafted taking into account the adversary disposition based primarily on fully reliable situational awareness.

If situational awareness is not available or is lacking, then the forces have to be maintained at minimum readiness in their positions without having the flexibility to offer support to each other. This loss of mutual support is akin to breaking up the forces into small groups that can be easily neutralised by superior numbers and are, therefore, susceptible to attack by forces that have the capability to concentrate even for a limited period of time. As a follow-on, under these circumstances the operational level commander does not have any flexibility in the disposition of his troops and therefore surrenders the initiative to the adversary. Sun Tzu viewed superiority as emanating from domination

of the enemy; it is not necessarily decided by the size of the contesting forces. Strategic plans, based on infallible situational awareness and flexibility of command at all levels, are the two primary requirements to achieving such dominance.

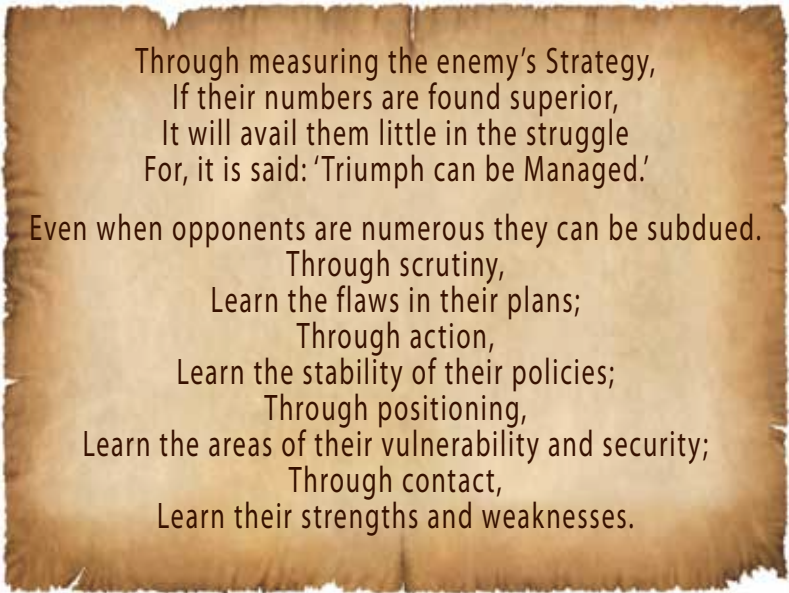
Formulating strategic plans for an air campaign is an involved process and not the easiest of steps in the overall joint campaign planning. However, the situational awareness capability of modern military forces—in which air power plays a critically predominant role—is such that it will be normally possible to predict with sufficient assurance the time and place of adversary attack and the probability. Further, unlike in Sun Tzu's time, the responsiveness of air power allows the concentration of forces much faster than ever before, somewhat mitigating the problems of mutual support that is alluded to in this stanza. This does not mean that forces can be kept concentrated in one place for possible aerial deployment when required, because the knowledge of adversary actions gleaned from airborne surveillance will never be infallible. It is, therefore, necessary to deploy the forces according to a strategic plan that incorporates flexibility for the movement and concentration of forces, through air mobility, as required. All such plans must take into account calculations of attrition, the requirements of mobilisation from other theatres if necessary, command and control systems and the relative combat capabilities of the forces.

The speed, reach and penetration of air power, more often than not, mitigate the constraints that Sun Tzu explains in this stanza. However, the underlying principles of strategic planning and flexibility in command are still fundamental to the success of air campaigns. In fact, flexibility in planning, command and execution throughout the entire spectrum of conflict is one of the most prized capabilities in an air force. This flexibility even compensates, to a certain degree, the inadequacies of situational awareness that otherwise could overwhelm the force. The required level of flexibility for an air force to be effective is not a quality that can be introduced into the force at short notice and requires careful nurturing during training and exercises in peacetime. Flexibility can be a war-winning characteristic that has to be carefully inculcated in a whole-of-force manner during the raise, train, sustain periods of force development. Flexibility in command is dependent on the commander's ability to adapt the control infrastructure to suit the occasion and lead the force to victory. There are no set patterns for this and such flexibility is beyond the laid down common concept. The responsiveness of control has to be unlimited to assure repeated victories in battle, campaign and war; where no two victories will be achieved by employing the same tactics, operational concept and strategy.

Developing strategic plans for an air campaign is an involved and complex process

Air mobility and responsiveness of air power mitigates the problems of mutual support when situational awareness is inadequate

Flexibility in planning, command and execution is one of the most coveted capabilities of an air force



Through measuring the enemy's Strategy,
If their numbers are found superior,
It will avail them little in the struggle
For, it is said: 'Triumph can be Managed.'

Even when opponents are numerous they can be subdued.

Through scrutiny,
Learn the flaws in their plans;
Through action,
Learn the stability of their policies;
Through positioning,
Learn the areas of their vulnerability and security;
Through contact,
Learn their strengths and weaknesses.

Even with numerical superiority, if the time and place of battle is not known to the enemy, then they cannot fight with the entire force at the same time in the same place. Numerical superiority can be thus neutralised. Victory is something that can be created. Although the enemy is numerous they can be prevented from joining battle. Determine the enemy's plans and successful strategy will become obvious; agitate them and learn the pattern of their manoeuvres; induce them to adopt specific formations to know the field of their vulnerability; test them to find out strengths and weaknesses. Compare one's own capabilities with those of the enemy and then it will be clear whether one should attack or defend.

Relative superiority in numbers, capability and size, matters only within a given context and at specific times and places. From a long-term strategic perspective, the relative size has very limited impact because a large size force would have greater areas to defend, which can become a disadvantage if the adversary concentrates their forces at a particular time and place in a focused manner, thereby achieving relative numerical superiority with lesser numbers. In other words, at the operational level, local superiority is more important than overall superiority. By manipulating the confrontation and ensuring that one's own strengths are pitted against the adversary's known weaknesses, victory can be assured at the local level. These minor victories in specific narrow situations combine as stepping stones to greater victories.

Relative strengths and weaknesses, knowledge and ignorance, superiority and inferiority are concepts that become powerful when embedded in well thought through strategies. To ensure that the full measure of the adversary has been obtained, it is necessary to scrutinise their plans in order to identify and exploit any flaws in them; agitate them to get a clear sense of their reaction process—in terms of time and strength of response—to provocation; by manoeuvring own forces, judge the positioning of the adversary forces and identify their areas of vulnerability, that is centres of gravity and relative security; and by probing their defences, establish their strengths and weaknesses. Most of these actions stop short of actual commitment of forces to battle and are exploratory in nature to determine the exact state of the opposition. The information so gathered will have to be combined with the surveillance inputs to obtain a clear picture of the prevailing environment. This will form the basis for one's own plans for attack and defence.

Air forces are likely to face the situation of relative inferiority in numbers more often than surface forces, because a large number of nations can afford to have only small-sized air forces. Therefore, the concept of turning this disadvantage into a situation of at least parity is of great importance in the air power context. Sun Tzu advocates two methods to do this. First and fundamental to evening the disparity in size is the ability to conceal one's own force deployments while constantly monitoring those of the adversary's so that concentration of force to achieve contextual superiority can be achieved whenever possible. By doing so, it is possible to craft battlefield victory against superior forces, step by step. Obviously this would require a great deal of intricate planning and analysis based on gathered information that has a high assurance of accuracy.

The second is an involved process of manoeuvre and counter manoeuvre to ascertain the exact status of the adversary's forces. Through dedicated surveillance activities the air force determines the plans and the deployment of the adversary and analyses them to identify the flaws that can be exploited. Simultaneously, probing missions will be able to ascertain the readiness state of the adversary force and their reaction pattern to regular air incursions. An added advantage of carrying out such probes is that the adversary will begin to think of these randomly timed missions as routine so that an element of surprise can still be retained in the actual delivery of the attack.

The less a thing is foreseen, the more ... fright does it cause. This is nowhere seen better than in war, where every surprise strikes terror even to those, who are much the stronger.

Xenophon (c. 430–c. 355 BC)

Detailed analysis will indicate the adversary's centres of gravity and their relative vulnerability. The success of this activity will depend on a combination of the situational awareness of one's own forces and their ability to conceal plans and deployment intentions from the adversary. A numerically superior adversary can be contained by the clever implementation of an optimum combination of the two methods that Sun Tzu advocated. While the actions mentioned by Sun Tzu may have to be initiated at the operational level, their coordination has to be at the strategic level of planning to ensure that they are aligned with other activities in the theatre and with the joint campaign objectives. This is critical for the effectiveness of air forces because of the scarcity of air power assets and the need to optimise their capabilities that are crucial to detecting adversary manoeuvres, shaping the theatre of operations and defeating emerging threats.

*The majority of air forces are small and face the issue of
relative numerical inferiority*

*Air forces can achieve contextual superiority by concentrating force
at the identified weak spots of the adversary*

*Air operations must be controlled at the strategic level to ensure
that they are aligned with the joint campaign objectives*

Dominating Superiority

The highest skill in forming dispositions
Is to be without form.
Formlessness is proof against the subtlest spy;
And the machinations of the wisest brain.

Triumph through exploiting the enemy's dispositions,
This the multitudes cannot comprehend;
The form and disposition of victory,
Others understand;
But they cannot comprehend
How the forms of victory were crafted.

Triumphant campaigns
Must not be repeated.
They take form in reaction
To infinite Variations.

The ultimate in deploying one's forces is to conceal them without ascertainable form but with skilled control to retain cohesion. When the force is without form, undercover espionage will be unable to gather information and enemy intelligence will not be able to formulate a counter strategy. How the enemy's own dispositions can be exploited to triumph may not be apparent to the multitude. Victory in war is apparent to all, but the science of ensuring victory is a mysterious secret, generally unknown. Operational concepts that have produced one victory should never be repeated; successful response to emerging circumstances will have an infinite variety of ways.

Very often in the treatise, Sun Tzu moves rapidly between the operational and the strategic level of warfare in the same chapter to make sure that the reader has a holistic perception of the concepts that he is putting forward. Often the fundamental factors being explained are brought into a strategic context towards the end of the chapter. While some of the stanzas deal with purely operational and at times even tactical level issues, they all have implicit and customary connections to the strategic level of warfare.

This chapter is an example of operational level concepts being imperceptibly connected to strategic level considerations in terms of achieving the necessary end-state.

This stanza explains the value and complexity of formlessness and the necessity to have flexible control to create it in a force. Physical formlessness of a force can be understood to be the situation when it presents an amorphous and very generic look to the outside observer with no indications of the subdivisions that make up the different parts within the force. Further, the seams that exist between the divisions are practically invisible from the outside because they are carefully managed at the strategic level. At its optimum, flexibility of command and control provides the commander with the ability to manipulate the force to make it seem almost without form. In addition to the physical formlessness of the force, in contemporary terms, virtual formlessness is the sophisticated deployment of the force in a contextual manner so that the adversary is unable to fathom the real intent. This will make it difficult for the adversary to develop an effective strategy to attack or defend. There is also an element of deception involved in this in terms of concealing not only the physical forces, but also the intended operational plan as well as the strategic objectives.

Sun Tzu advocates the use of illusion to remain unfathomable to the adversary. In the aftermath of a campaign it is possible to analyse the basic concept of operations that brought victory and arrive at an understanding of the control and execution that was required. However, the nuances of the concept at the strategic level, the long series of plans and their various combinations that were considered before selecting the final campaign plan, the possible variations kept in abeyance that could have been brought into effect if necessary and the various methodologies used to command and control forces in battle are not easily discernible. Effective employment of forces that assures victory will have to be beyond commonly accepted concepts and not follow set patterns. Further, a concept that has been successful in a particular campaign may not be successful in a repeated application since they would now have 'form' that is discernible to the adversary. Therefore, as far as possible, they should not be repeated. This is more so at the operational level, whereas at the strategic level of planning, each new context will itself throw up a number of possible variations, making it simpler to adopt different plans for campaigns as required. The rules to formulate strategy are few and simple, but the ways that they can be applied are infinite in number.

The stanza is about campaign planning at the strategic level and its subsequent execution. The three elements covered are command and control, deployment and execution. The most important weakness of the adversary that can be exploited is their ignorance of the position that one has taken up. Sun Tzu believed that positioning and knowledge are at the heart of the strategic system of a force. By keeping the adversary ignorant of one's own dispositions, they are denied knowledge and almost automatically one's own strategy will be ascendant.

From an air power perspective this requires the delicate balancing of high-level planning and surreptitious deployment of forces to the desired initiating point for a conflict. Air

forces must appear formless, both physically and virtually, for maximum effectiveness. This requires adequate command and control at all levels and a clear understanding of the hierarchy and decentralisation of the execution process that must be initiated only when required. Centralised control will create the illusion of physical formlessness in the build-up to the conflict and decentralised execution will enhance this perception through creating virtual formlessness by effectively concealing the strategic intent of the force prior to joining battle. This will deny the adversary the advantage of foreknowledge of position and plan. Air power brings the critical capability of appropriate strategic positioning from dispersed locations to a joint operation and the responsiveness and reach of air assets are vital to meet this responsibility. The dispersed positioning of air power assets also demands effective and robust command and control systems that have adequate redundancy even under extreme threat to achieve this.

The fact that, historically speaking, those armies have been most successful which did not turn their troops into automatons, did not attempt to control everything from the top, and allowed subordinate commanders considerable latitude has been abundantly demonstrated. The Roman centurions and military tribunes; Napoleon's marshals; Moltke's army commanders; Ludendorff's storm detachments ... —all these are examples, each within its own stage of technological development, of the way things were done in some of the most successful military forces ever.

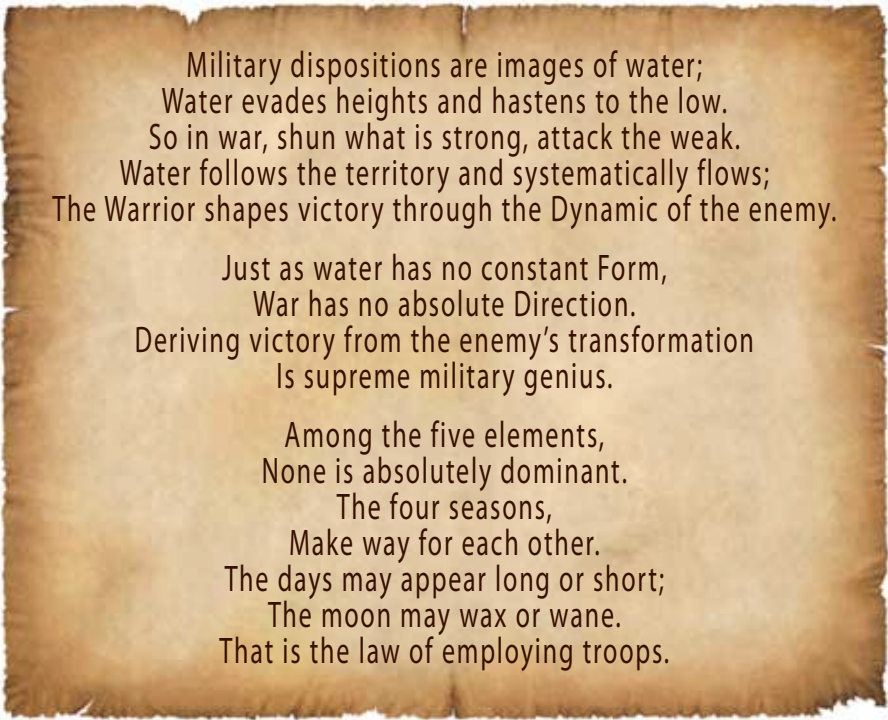
Martin van Creveld
Command in War, 1985

Victory in an air campaign is a function of well-formulated operational concepts carried forward by coordinated missions applied through centralised control and decentralised execution. However, these employment concepts should not be repeated in successive campaigns under the assumption that they will always be successful. Every campaign must be analysed for its peculiarities and air assets should be employed operationally to cater for the unique characteristics of that particular situation. At the highest level of strategic planning it will be possible to create a number of variations to the core air campaign plan—by concentrating force as required at different times and positions, by altering the priorities of each objective as the campaign progresses and by reappraising the campaign plan on an as required basis dependent on the progress of the overall joint campaign. This is how formlessness of air power aligned to the strategic objective through inherently flexible command and control brings victory to a joint campaign.

*In the employment of air power centralised control ensures physical
formlessness and effective decentralised execution
creates virtual formlessness*

*Air power's reach and responsiveness allows it to achieve advantageous
strategic positioning even from dispersed locations*

*Air power's formlessness can create a number of variations in
campaign planning at the strategic level*



Military dispositions are images of water;
Water evades heights and hastens to the low.
So in war, shun what is strong, attack the weak.
Water follows the territory and systematically flows;
The Warrior shapes victory through the Dynamic of the enemy.

Just as water has no constant Form,
War has no absolute Direction.
Deriving victory from the enemy's transformation
Is supreme military genius.

Among the five elements,
None is absolutely dominant.
The four seasons,
Make way for each other.
The days may appear long or short;
The moon may wax or wane.
That is the law of employing troops.

A placement and employment of military force can be likened to water; for just as flowing water avoids the heights and hastens to the low lands, so a force must avoid strengths and strike weaknesses. Water produces currents in accordance with the terrain, so a force must achieve victory in accordance with the situation of the enemy. Water has no constant shape; similarly a military force should have no constant formation. The ability to gain victory by changing and adapting according to the opponent's transformation is supreme military genius. Of the five elements none is always predominant; of the four seasons none lasts forever; of the days some are long and some short; and the moon waxes and wanes. Always make the best adaptations to variable situations—that is the law for employing troops.

The *Book of Changes (I Ching)* is often considered the Oriental apotheosis of adaptation, of flexibility. In this book the recurring theme is one of observing life and blending with its flow in order to survive and develop. In effect, the theme of this work is that everything in existence can be a source of conflict, of danger, and, ultimately, of violence if opposed from the wrong angle or in the wrong manner—that is, if confronted directly at the point of its maximum strength, since this approach renders the encounter potentially devastating. By the same token, any and every occurrence can be dealt with by approaching it from the right angle and in the proper manner—that is at its source, before it can develop its full power, or form the sides (the ‘vulnerable flanks of a tiger’).

Oscar Ratti & Adele Westbrook
Secrets of the Samurai, 1973

A successful strategy is one of flexibility and forcefully leveraging the forces of change rather than one that is tentative in its initiatives and thereby detrimental to exercising flexibility optimally. Sun Tzu uses water as an illustration to explain the employment of flexibility as a war-winning factor. The lesson here is of the necessity to adapt to ongoing change, because when the environment is dynamic, the challenge being faced will be completely unpredictable. This indicates that the adversary’s critical areas of strength and weakness will not be known beforehand but that they will appear without prior warning, necessitating one’s own force to be in a state of readiness at all times to exploit the situation as it arises. A force must also be able to constantly change its form—including strategic concepts, *modus operandi* and exercising of available options—and eventually discover the adversary’s weakness or centre of gravity. Different situations require different approaches to be successful and, much like water having no constant shape, military forces should be able to create the necessary form that will permit the concentration of force at the desired time and place.

The ability to analyse the adversary’s plans and manoeuvres to spot the opportunity to strike, while continually adapting one’s own force to rapidly take advantage of the emerging situation, is a gift. A commander with this gift and the capability to exercise it effectively will be a genius of military strategy and will always win the conflict. This is one of a number of characteristics that Sun Tzu has listed as defining a sophisticated and skilled commander. An unexpected approach—conventional or unconventional—is the best way to exploit the weaknesses of the adversary that have been exposed, since this will further complicate their response options.

In this strategy, the wait for the opportune moment to initiate action is itself dynamic. The constant monitoring of the adversary manoeuvres and adjustments to own positions to cater for them and also to ensure that no weakness is displayed is a continuous process during this wait. No initiative and commitment to action is made unless the opening that is needed is clearly discernible. Just as none of the five universal elements has

unvarying superiority and the seasons are not static but always fade into the next, just as there are long and short days, and the moon waxes and wanes, the battlespace is also ever changing, with no constancy at any given time. A skilled commander should be able to make the best adaptations to the planning and execution of the campaign accordingly.

When the enemy finds itself in a predicament and wants to engage us in a decisive battle, wait; when it is advantageous for the enemy but not for us to fight, wait; when it is expedient to remain still and whoever moves first will fall into danger, wait; when two enemies are engaged in a fight that will result in defeat or injury, wait; when the enemy forces, though numerous, suffer from mistrust and tend to plot against one another, wait; when the enemy commander, though wise, is handicapped by some of his cohorts, wait.

Translated by Sun Haichen
The Wiles of War: 36 Military Strategies from Ancient China, 1991

Vietcong Principle of the 'Line of Least Resistance'

The capability to 'go with the flow' or take the line of least resistance was one of the cardinal principles that the Vietcong employed during their long war with South Vietnam and the United States. At the operational level they were, therefore, able to completely avoid the preponderant conventional power of the United States military and exploit the weakness that was clearly visible, that is a lack of understanding of guerilla warfare and the inability to counter an insurgency backed by a majority of the population. By never entering battle when they encountered even the slightest opposition, they emulated the flow of water downhill, going around obstacles rather than meeting them head-on.

This stanza is exploring the spread of flexibility and adaptation, and the best way to exploit these characteristics to win a conflict. Speed, timing and a relatively high momentum of adaptation are essential to success. Air power's flexibility, speed, responsiveness, reach and ability to control the tempo of operations makes it a formidable capability that could be effectively employed as per the maxim endorsed by Sun Tzu. The concept here is for the adversary to be subjected to intense analysis and when a weakness—target of importance, centre of gravity like leadership etc, critical communication and supply links—is identified and established, to strike decisively. This would require rapid adaptation of plans and possible reallocation of assets for the execution. This concept is employed by

air power to carry out physical time sensitive targeting at the operational level that has enormous strategic impact on the adversary's war-making capabilities.

During the period when the adversary is under surveillance, air forces have other concurrent activities to carry out as well as continuously adjusting to changes in both the adversary's and their own disposition and plans. Air forces' multi-role platforms and their flexibility to multi-task the same asset optimises the employment perspective of the force as a whole and provides additional flexibility to the joint military force. Harnessing this enormous capability and tailoring it to suit the joint campaign requires great skill and professional mastery from the air commander and a high level of understanding from the joint force commander. Change is perhaps the only constant in a battlefield and, therefore, constant adaptation is the hallmark of a skilled commander and a winning force.

Sun Tzu's strategy is often distrusting of long-term and detailed plans, laying more trust in the inherent ability of the sophisticated commander and the capability of an effective force to be able to adapt to emerging situations in an appropriate manner by focusing on the adversary's weaknesses while not displaying one's own. Air forces are offensive entities and should only be employed defensively during the period of time when the adversary's centres of gravity have not yet been identified. Clearly identified targets must be effectively neutralised rapidly—a clear indication of the capability of an air force. This flexibility to wait defensively and strike rapidly must be achieved because the contemporary battlespace is dynamic, necessitating rapid adaptations of existing concepts, and strategies.

*Air power is ideally suited to be employed as per Sun Tzu's maxim to
hold back the attack till the adversary's centres of
gravity have been identified*

*Air power can adapt plans and reallocate assets to concentrate force at
the time and place required very rapidly*

*A skilled air commander will be able to harness effectively the enormous
capabilities of air power and tailor it to suit the joint campaign*

Conclusion

Sun Tzu believed that at the strategic level of military planning and analysis there is an implicit connection and confluence between opposing factors. Therefore, manipulation of the cognitive domain, to create illusions would be as important as manipulating the physical domain through deception and concealment to achieve victory. The primary requirement is to create an imbalance with the adversary forces in one's own favour. This can be achieved by ensuring that the adversary's military force does not have relative numerical or capability superiority by employing various means appropriate to the context.

Air power is a critical element in ensuring overall superiority of one's own force across all levels of warfare, from the strategic to the tactical. The effectiveness of air power as an element of national power is heavily dependent on the nation's security policy and its politico-military stance. This is perhaps more important for air power since its optimum employment is always as an offensive entity.

Air campaign planning is a complex and involved process and requires attention to detail as well as an overarching strategic view of the joint campaign and beyond. Of necessity, it has to be based on adaptability underpinned by the inherent flexibility in the application of air power. However, a majority of air forces face the challenge of being small-sized and, therefore, also have to constrain their planning process to the reality of their holistic capabilities. Superimposed on this constraint is the fundamental need to obtain and maintain control of the air over the area of interest. Control of the air is a primary physical factor in creating an imbalance in one's own favour. In the absence of the capability to have complete control of the air, small air forces will have to be content with the concept of contextual superiority, achieved and maintained as required.

Another major factor in creating imbalance is the capability to mask the true strategic intent of the nation, even while the forces are being positioned in a preparatory manner. This can be achieved through deceptive ruses, and illusory displays of false intent. Air power is ideally suited to carry out such virtual and physical deception because of its reach and responsiveness. Sun Tzu emphasised the need for a force to remain formless as long as possible before revealing itself. This axiom is particularly suited to the employment of air power, both physically and virtually. Physical formlessness is presenting a seamless whole to the outside and virtual seamlessness is the ability to deploy forces while continuing to mask the real intent. Sophisticated combinations of these two can provide myriad variations to strategic plans and concepts. When applied in the context of joint campaign plans, this air power contribution has the capacity to overwhelm even adversaries with superior capabilities.

The air power tenet of centralised control and decentralised execution also supports the concept of formlessness that Sun Tzu extolled in this chapter. Further, exercising this

tenet in an appropriate manner, well aligned with the joint campaign, creates a constant quantum of flexibility, far beyond what would otherwise have been possible, that in itself becomes a force multiplier.

Sun Tzu also advised that an attack should only be initiated after clearly identifying the centres of gravity as well as the strong points of the adversary. In air power terms this would amount to maintaining a defensive status and then being able to assume the offensive in a rapid transition. While this would achieve surprise, it also needs the force to be maintained at a minimum level of preparedness for the transition to be effective. Sun Tzu also provides advice for the commanders, as is the norm in most of the chapters in the treatise, on the various methods that can be used to achieve victory in battle, in this case through transitioning from the defensive to the offensive rapidly, while concealing one's own intentions. From an air power perspective, this injunction directly points towards pre-emptive strikes in the pursuit of grand strategic objectives. In the contemporary international politico-diplomatic scenario, a completely untenable option!



7

Manoeuvre

The Air Campaign

Sun Tzu attached great importance to gaining and retaining the initiative in conflict and warfare. His main principles in the conduct of war—pre-emptive measures, planning the battles to arrive at rapid victories, drawing the enemy out into a battlefield of one's own choice rather than the other way round—are all oriented towards seizing the initiative, if possible even before the battle has been joined. Sun Tzu explained initiative primarily as the product of manoeuvre and adaptability, born of mobility and flexibility within the forces. In his view, a force that had the initiative would be irresistible in attack and impregnable in defence.

Aptitude for manoeuvre is the supreme skill in a general; it is the most useful and rarest of gifts by which genius is estimated.

Napoleon Bonaparte (1769–1821)

Initiative is normally gained by forestalling the adversary from securing the conditions for victory and by creating a superior situation for oneself prior to the commencement of hostilities. This involves a constant jockeying for position with the adversary, especially if they have parity in capability so that the forces are evenly matched. There is also the possibility that initiative may have to be won after the commencement of hostilities. In this chapter Sun Tzu advances the concept of strategic confrontations further. Within this concept, the term ‘battle’ does not necessarily always mean conflict but also encompasses confronting passive challenges from the adversary. The chapter deals with the specific manner in which physical conflict can be avoided and, in circumstances where it cannot be avoided, how to ensure victory. One of the primary tenets of Sun Tzu’s treatise forms part of this chapter in the famous dictum, ‘War is premised upon deception’.

There is a popular misconception that war is purely a series of hostile, violent physical confrontations. However, Sun Tzu classifies such confrontations as armed conflict and explains that a clear understanding of grand strategy would indicate that armed conflict is only part and not the central fixture in any war. Strategic warfare is primarily about advancing one’s own position, by employing all means available to the State, not necessarily through armed conflict. Further, even if armed conflict becomes a necessity, the culmination of conflict will be the commencement of strategic manoeuvring to achieve the best position for the State. Physical conflict is extremely risky and does not ever bring lasting victory. The real goal of all strategy is to succeed in creating a situation of superiority for one’s own State. However, Sun Tzu emphasised that in the pursuit of this goal, if hostile confrontation is unavoidable, then all effort must be focused to ensure that it ends in tangible victory for one’s forces.

The most successful manoeuvring of forces is achieved by commanders who have mastered the operational art of both direct and indirect application of force and clearly understood the connection of these actions to the overall strategy being employed for the campaign. The ability to achieve direct effect through indirect means is considered by Sun Tzu as the acme of skill in manoeuvring forces. Indirect manoeuvring—diplomatically, economically or even through deterrence with a show of force—is based on understanding the nuances of the adversary’s position that indicate their weaknesses which can be exploited when carefully manipulated. A sophisticated commander will be able to convert these indirect advantages to comprehensive victory in the battlefield in direct conflict and strategically in advancing one’s own position. The clear indication is that forces must be employed with the understanding of strategy and committed to physical armed conflict only when absolutely necessary. In contemporary terms this

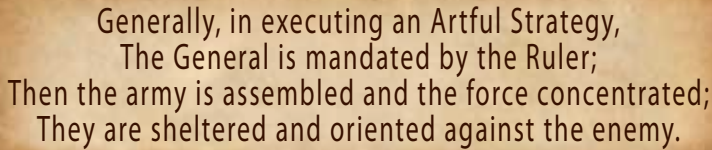
encompasses the concept of deterrence through coercion, reinforced by diplomacy and dialogue, and the physical use of military forces only as a last resort. It further emphasises the need to achieve the desired end-state after physical conflict has been successfully completed—a factor that has great implications in ensuring the strategic ascendancy of one's own State in modern times.

The other major factor that emerges from this chapter is the virtue of patience in the conduct of a campaign. Sun Tzu believed that one of the greatest attributes of a skilled commander was his ability to wait for the opportune moment to attack the adversary, never being tempted by the offer of baits or the feigned withdrawal of the opposing force. The wisdom of the commander is in gaining decisive advantage over the adversary and then providing them with an exit to withdraw so that further conflict can be avoided. Sun Tzu called this entire sequence of events, starting from the strategies designed to further one's position without resorting to armed conflict to the actual employment of military forces when inevitable, the 'Artful Strategy'.

The soundest strategy in war is to postpone operations until the moral disintegration of the enemy renders the delivery of the mortal blow both possible and easy.

Vladimir Lenin (1870–1924)

Assembling the Force



Generally, in executing an Artful Strategy,
The General is mandated by the Ruler;
Then the army is assembled and the force concentrated;
They are sheltered and oriented against the enemy.

The fundamental rule for the use of military force is for the highest military commander to receive orders from the government, then to assemble the necessary forces and ensure cohesiveness of the force by harmonising the different elements. Then the commander sets up bases according to the order of battle and clearly facing off with the enemy.

Every nation must have a fundamental principle for the employment of military forces to secure its interests and this must form part of the grand strategy. Under normal circumstances the decision to employ military forces will be taken by the government of the day, in consultation with all relevant strategic level agencies. Thereafter, the military commanders will be instructed by the government to assemble the required task force with the appropriate elements embedded within it. This process establishes harmony and singleness of purpose from the highest level of decision-making through the strategic military command to the lower levels of command within the military forces. Without this alignment, no military expedition can be successfully undertaken. As a general rule, all internal power struggles within the State should be fully resolved, that is the nation should be united in its resolve, before any external military campaigns are planned or executed.

Assembling the necessary forces, that is combining the elements of different forces in appropriate quantity to create a joint task force, will have to be done according to the campaign objectives to be achieved. This will not only ensure that there is adequate concentration of capability resident in the assembled force to achieve the desired end-state, but also control resource expenditure commensurate with projected campaign aims. Once the force is assembled, the commander should align the forces in such a way as to be facing the adversary, ready to meet challenges and in a position to manoeuvre to win. This will have the effect of gradually constraining the options available to the adversary to manoeuvre. This is the initial, preparation, orientation and deployment of military forces to achieve strategic objectives.

This stanza is essentially about ensuring the alignment of the strategic politico-military hierarchy before military forces are committed to conflict. The connection between government instructions and the preparation of forces for deployment is generally the same for all military forces with very minor differences. From an air power perspective, there are three noticeable nuances that are different to other military powers. First, even before the government's instructions to deploy forces, air forces would have been actively gathering information regarding the adversary's intentions. In fact, air power input would have been vital to the decision-making process that culminates in the deployment process. The ongoing surveillance requirements of a State give the air force an operational tempo even during peacetime conditions, which gets exacerbated during actual operational deployments and engagements.

Second, air force elements will be deployed as a vanguard to ensure control of the air and to shape the battlespace prior to other force elements from the joint task force being positioned. This would require the pre-positioning of air elements at forward bases and entail the deployment of all necessary support infrastructure prior to the main task force. Third, the deterrent capability of air power can be leveraged by early and aggressive pre-positioning of offensive assets clearly with an aim of bringing the adversary's centres of gravity within reach. This is in keeping with Sun Tzu's belief that successful strategy depends on avoiding conflict whenever possible.

Air power is critical to concentrating force at the time and place of one's own choice in a responsive manner so that the adversary does not have adequate reaction time and their manoeuvre options are limited. Air mobility, operating under a benign or even contested but adequately controlled air environment, is of cardinal importance in these circumstances. Even though the intention should be to avoid direct confrontation and combat, the rapid positioning of surface forces with the use of airlift capabilities not only has a deterrent effect but is also indicative of the resolve to employ forces if the need arises. While the actual surface combat would be the realm of the ground forces, air power is a powerful enabler that plays a leading role in the build-up to it as well as during the conflict itself. The connection between higher government directives and air power—as well as the other two arms of the military—is very clearly visible through both the planning and execution phase of the campaign.

Air forces have a constant peacetime operational tempo that gets exacerbated in times of armed conflict

Air power's deterrent capability can be leveraged as a conflict avoidance strategy

Air power is critical to concentrating force as required

Nothing is as difficult as manoeuvring the Force.

The difficulties in manoeuvring the Force
Lie in making the devious into the direct
And adversity into advantage.

Hence, take the circuitous route,
After enticing the enemy out of the way;
Start out after and arrive before them.

This is to master the direct and the devious.

Nothing is more difficult than the art of manoeuvring the force for advantageous positions. The difficulty is to make the devious the most direct and turn misfortune to advantage. This can be achieved by taking a circuitous route and diverting the enemy by tempting them with advantages. In so doing, it is possible to set out after the enemy has commenced manoeuvring and still arrive at the battlefield before the opponent. When able to do this, one understands the strategy of the direct and the devious, and knowledge of the artifice of diversion.

Avoiding hostile confrontations, as far as possible, is important to provide long-term solutions to security issues. Strategic planners find that armed conflict is always the path of least resistance and the easiest to adopt in developing a successful strategy for national security and are therefore quick to choose this option. Sun Tzu believed that armed conflict occurs because one's own plans are rigid and do not have built-in flexibility to adapt to rapidly emerging situations. The best strategy is the one that achieves the desired end-state at the least cost in resources and manpower. Conflict and attendant destruction increase the cost of success and decrease the possibility of victory being able to pay for the conflict. Therefore, conflict must always be the last resort. The first part of the stanza explains the difficulties in manoeuvring the force after it has been constituted according to the needs of the campaign. The primary goal of the initial manoeuvres is to seize the most favourable position vis-à-vis the information that has been gathered regarding the capability and intention of the adversary.

The explanation of how to manoeuvre for a favourable position is one of those highly condensed and enigmatic statements that Sun Tzu has made in the treatise—leading to a number of different nuances in its interpretation over the years. Essentially, it explains the need to be innovative in planning manoeuvres by enticing the adversary to be leisurely in their manoeuvres. This has two advantages—one, that it might keep the adversary away

from confrontation and, two, it provides adequate time for one's own forces to carry out rapid manoeuvres to achieve the desired positional advantage. This concept has an element of deception in it since one's own movements are concealed from the adversary. Even when the movement of forces are hindered by inhospitable terrain, it is possible to turn that into advantage by concealment and opportune manoeuvring. The campaign planning process must identify the possible disadvantages and then consider ways and means to convert them into advantages by contriving to keep the adversary off balance and unaware of one's own manoeuvres. A commander who can devise and implement such a plan is considered knowledgeable and skilled in the art of flexible manoeuvre.

Hannibal's Passage Across the Alps

After the Carthaginian commander, Hasdrubal, was killed in 221 BC, Hannibal took over the leadership of the forces of Carthage. He took the Romans by surprise in 218 BC by fighting his way through the northern tribes to the Pyrenees. Through a series of skirmishes and conciliatory approaches to local Gaulish chiefs he reached the Rhone River before the Romans could oppose his advance. He evaded the Roman army manoeuvring from the Mediterranean by moving inland into the valley of the Rhone and moving over the Alps with his entire army. This was accomplished in the face of very great difficulties, but Hannibal arrived in Italy, bringing him into Roman territory and frustrating their attempts to fight the main battle outside Roman territory. The commanding general of the Romans, Publius Cornelius Scipio, had not expected the entire Carthaginian army to cross the Alps and had prepared to fight the battle in Iberia. This bold positioning manoeuvre by Hannibal created an advantage for his forces that had a rippling effect—they not only won the next few battles, but were able to encourage the Gauls and Ligurians to join forces with the Carthaginian cause against the Romans. Although he subsequently lost the Second Punic War (218–203 BC), his audacious move across the Alps is a clear example of a skilled commander successfully carrying out flexible manoeuvre to gain positional advantage over the adversary.

Sun Tzu's concept of avoiding conflict as far as possible is not only about adapting to cater for emergent situations, but also about creating deterrence through the visible display of potent combat power that can be brought to bear rapidly. The flexibility that air power affords provides planners of any national security initiative a tangible option in pursuing a strategy of combat avoidance while retaining the option of employing lethal force at short notice. This air power capability also caters to the devious means to which Sun Tzu refers by being able to deploy very rapidly from a status of normal peacetime readiness with no outward signs of increasing the readiness state. Air mobility is a critical factor in the timely deployment of surface forces to contain dynamic situations. Air

mobility, in turn, is dependent on the availability of airlift capabilities of sufficient calibre and capacity for its effectiveness.

From an air power employment perspective there are three independent factors that can be derived from this stanza. First is the difficulty of deploying available assets in such a way as to ensure that there is adequate coverage at critical areas and that vital points are well protected. It is also necessary to ensure that adequate control of the air can be maintained over the theatre and beyond, as required. Considering that air power assets are normally scarce and inadequate to meet all concurrent requirements, this places an added constraint on the planning process. Second is the employment of air power to ensure that concentration of force can be achieved at the time and place required, as per the strategic plan. This has to be achieved while retaining and exploiting the inherent flexibility of air power to neutralise disadvantageous situations by rapid adaptation of existing operational plans. Third is the optimum employment of airlift assets to overcome geographical barriers and inhospitable terrain that restrict rapid mobility of surface forces to position own forces at the most advantageous position, even before the commencement of hostilities. Further, air mobility at the tactical level can rapidly convert a difficult defensive position to one that becomes a winning situation. A commander requires a very high degree of professional mastery to be able to employ air power efficiently to achieve the laid down strategic objectives.

*Air power can move up rapidly to operational readiness from
normal peacetime status*

*The normal scarcity of air power assets makes it imperative to have
a robust planning process to ensure that concurrent
demands are adequately met*

*Airlift provides the capability to position surface forces at
the most advantageous position*

Avoiding Competition

Engaging the enemy can be advantageous;
It can be dangerous.

If the whole Force competes for advantage,
It may not be gained.
If the Force abandons camp to compete for advantage,
Equipment may be lost.

Although rolling up the defence
And hastening day and night without stopping
Will double the distance of a united movement,
Covering a hundred miles while competing for advantage
Will result in commanders being lost.
The vigorous will be in the vanguard;
The weakest in the rear; only one in ten will arrive.

Cover fifty miles to compete for advantage,
Commander of the vanguard will fall; only half will arrive.
Cover thirty miles to compete for advantage,
Two of three divisions will arrive.

A Force without significant transportation must lose;
One without provisions must lose;
One without supply caravans must lose.

Both benefit and danger are inherent in manoeuvring for an advantageous position. It depends on the competency of the commander. To mobilise the whole army to struggle for advantage would take too long and therefore may not achieve the desired goal. Yet, to struggle for advantage with a stripped-down army or leaving the bases unguarded would result in the loss of equipment. Although forced marches without armour, and not stopping day or night, may cover double the usual distance at a stretch to wrest the advantage, they will not succeed and the commanders may be captured. The stronger troops will be in front and the weak will fall behind, and if this method is used only one-tenth of the force will reach its destination. If a forced march to outmanoeuvre the enemy is of 50 miles, the commander of the first division will probably be lost and only half the force will arrive; if 30 miles are covered for the same

objective, two-thirds of the force will arrive. It follows that a force which lacks transportation, provisions and bases of stockpiled supplies and does not have a secure logistic chain will not survive.

The hardships of forced marches are often more painful than the dangers of battle.

General 'Stonewall' Jackson

Although Sun Tzu was partial to achieving the desired end-state without armed conflict, he was pragmatic enough to accept that there would be circumstances wherein the application of force would achieve the objectives with more certainty. This highlights the point that all strategy must be goal-oriented and one's own actions must always be guided by opportunity and a cost-benefit analysis. However, Sun Tzu also cautions against using the cost factor to hide cowardice or fear of conflict within a force. It is in making this decision and implementing the subsequent actions that the competency of the commander plays a crucial role and defines the difference between success and failure. This stanza is about the inherent risks in undertaking operations to gain the advantage. There are three major factors to be considered when assessing risks.

First is the risk caused by attempting to mobilise the entire force to confront the adversary and gain victory. This is always a time-consuming process and the window of opportunity that is available to defeat the adversary in a confrontation, when their known centres of gravity are exposed, might be lost. The corollary to this is the propensity of flexible forces to detach very lightly equipped units to rapidly confront the adversary, especially in a time sensitive situation. However, such an action is liable to create a long-term disadvantage because of the possibility of the loss of equipment and stores that may have to be discarded to facilitate speed of manoeuvre.

The second factor is the risk involved in initiating rapid action through forced marches to surprise the adversary and gain the advantage. Sun Tzu divides this into forced marches of 100, 50 and 30 miles and indicates the problems that such action could cause to one's own force, including the capture or loss of the commanders. Essentially, forced marches over long distances will make it difficult to keep the cohesiveness of the force, both physically and in terms of command and control. Sun Tzu's advice is not to march long distances to gain tactical advantage, even if there is no impediment to smooth travel. Forced marches should only be resorted to when there is overwhelming advantage to be gained by covering the distance to the objective in the shortest possible time. The third factor is the risk to the force caused by the loss of material and supplies. A force

cannot survive without provisions, secure logistic lines of supply to ensure uninterrupted availability of warfighting material, and a sufficient stockpile of necessary items at a safe base to sustain the operation at the required tempo for the entire envisaged duration.

Considering these three factors, it becomes clear that one should contest for advantage at a strategically critical point or by targeting a prioritised centre of gravity of the adversary. By implementing such a concept of operations it is possible to ameliorate, to some extent, the risks that are inherent in undertaking armed conflict. A small force, skilfully manoeuvred, will be sufficient to gain advantage and then defend it until a larger force arrives to ease the situation, thereby providing sufficient mobilisation time for the force. In this case, even if forced marches have to be undertaken, since only a small element of the force will be involved, the impact will be minimal on the whole force. By targeting the strategic centre of gravity of the adversary, victory can be gained with minimal expenditure of resources and in the fastest time possible. Such a victory is dependent on the skill of the commander to manoeuvre the forces to engage and neutralise the identified centre of gravity.

It is relatively easy to interpret this stanza and orient it towards the employment of air power. The three risk factors that Sun Tzu identified as being applicable to surface forces—the difficulties in mobilising the whole force for engagement, forced marches to take the offensive and ensuring adequacy of the supply chain—can all be mitigated by the employment of air power. Therefore, this stanza is more appropriately explained in a joint context. By employing airlift to position specialised surface forces at the strategically critical points to target the adversary's centres of gravity, the risk of missing very short windows of opportunity can be overcome. Careful planning can also ensure that there is adequate strategic depth of forces available to achieve the objectives without having to mobilise the entire force or, on the other hand, having inadequate firepower and mass. The risks associated with forced marches are also completely removed by the use of air mobility to position forces rapidly at the required time and place. Airlift is the answer to setting up efficient logistic supply lines that cannot be disrupted by insurgent or guerrilla activity of the adversary. Of course, the functionality of the supply line will be dependent on the availability of provisions and warfighting material at home base or depot, which is a function of pre-planning at the highest levels of command and government.

Essentially this stanza highlights the advantages that can be gained by the optimised employment of airlift and how it can create the background necessary for surface forces to achieve laid down objectives at the tactical, operational and strategic levels. In the absence of airlift of the required calibre, contemporary surface forces will be subject to the risks that Sun Tzu has carefully listed in his treatise, to the same degree that it was applicable in his times.

I can use air [assets] to get to some areas that would take weeks by ground to get to; in a very quick way, in a way [in which] I can really disrupt his efforts and also his ability to supply his forces. He is tied to his ability to supply his forces as much as we are and, in many cases, he uses a very static, cache-based supply system in many of these mountains that, using air , I can get to very quickly once I get a sense of where they might be. This summer [mid-2008], we conducted air assaults at altitudes of 9,500 feet and conducted search/clear operations where we found huge caches of weapons, sleeping bags, medical equipment—sort of field hospital-like facilities—that [the enemy] had been using to support his operations.

Colonel John P. Johnson
Commander Combined Task Force *Currahee*,
Regional Command (East), Afghanistan
Quoted from Interview in *Janes Defence Weekly*, 4 March 2009

Air mobility can capitalise on extremely time sensitive windows of opportunity in the battlespace

Air mobility can create and maintain adequate strategic depth for the surface forces

Air power can set up efficient and secure logistic supply lines, even under the most difficult circumstances

Flexibility and Imitation

Without knowledge of the other leaders Plan
Alliances cannot be formed.

Without knowledge of the lie
Of the mountains, forests, passes and marshes
The force cannot be moved.

Without employing local guides
The lie of the land cannot be exploited.

Unless the intentions and plans of the neighbouring country or force are known, an informed alliance cannot be made with them. The force can be manoeuvred effectively only when the lie of the land—the topography and terrain of the country—in terms of the condition of the operating area is known. The terrain of the battlefield cannot be used to advantage unless local guides or professional scouts are used.

In the formulation and employment of strategy, one of the most important factors that must be considered is the status of the battleground. The term ‘battleground’ transcends the purely physical and is also about the sources of one’s own and the adversary’s strength, which forms the foundation of a force’s ability to survive. Sun Tzu listed three factors as fundamental to analysing the battleground with a view to contend with the adversary—forming alliances, knowledge of the topography of the actual battlefield and methods to gain advantage from the terrain. As is common in the treatise, Sun Tzu has combined a factor at the grand strategic level with two that deal with the reality of operational actions to create a holistic maxim for victory.

Obtaining reliable knowledge of the neighbours’ grand strategic intent should be the first consideration in the planning of any alliance. Understanding the intentions of one’s neighbours is of paramount importance in formulating the overall grand strategic policy. The neighbours’ intentions and plans will directly affect the strategic plan for any campaign, in that the formation of an alliance with the neighbour(s), would free a greater amount of one’s own resources that would otherwise have been tied down to contain the neighbours. These resources would then become available for the primary campaign being planned. Further, a formal alliance may even provide substantial assistance in terms of forces, supplies and other resources for direct employment in the campaign itself.

In the physical domain, a clear analysis of the topography of the battleground is critical to success in manoeuvring the force to advantageous positions, before, during and after the actual combat phase of the campaign. While topography has a direct impact on the conduct of surface operations, it also influences the planning process of the campaign in determining the quantum of resources necessary to assure success. Pre-operational analysis to understand the advantages and disadvantages that can be derived from the topography will be a critical factor in determining the *modus operandi* of the force once it is committed to combat operations. In most cases this knowledge could be of great importance at the primary level of planning and analysis to ensure that the force avoids obstacles and finds the openings that will permit its smooth positioning and manoeuvres.

While topography is the actual relief features of a designated area—the real lie of the battlefield in terms of mountains, forests and other natural geographic features—terrain encompasses a larger tract of land considered with reference to its natural features in a broader military assessment. In Sun Tzu's time, the information regarding the lie of the land beyond the visual range was difficult to obtain, especially when the force was manoeuvring in unknown and often hostile territory. Therefore, Sun Tzu's advice is to utilise the expertise and knowledge of local guides to analyse the terrain and then formulate manoeuvre options. In campaigning, the use of terrain is more than merely avoiding obstacles. It is an art dedicated to achieving true advantage by exploiting superior knowledge of the terrain, hence Sun Tzu's reference to the use of 'local' guides to gather information.

In the contemporary scenario this stanza would mean having detailed knowledge of the human factors and physical terrain that one's forces are going to encounter throughout the planned campaign. This can be gained from a range of sources, from commercially available space assets and military surveillance capabilities to information gathered by spies or human-sourced intelligence. There are two distinct parts to this—the gathering of information and the exploitation of available information. The exploitation could perhaps be compared to the use of professional guides in ancient times. The success of combining these two elements of information assimilation is dependent on the level of competence of the commander in the 'art of command'.

Although air power does not directly influence the nation's grand strategic decision to form an alliance with another friendly country, it definitely benefits from all alliances, more than any other military capability. This is because an alliance can, to a limited degree, alleviate the constraint of limited asset availability faced by air forces because of the cost-intensiveness of air power capabilities. However, in this stanza, it is in the realm of information gathering and exploitation that air power plays a fundamental and critical role in the successful manoeuvring of military forces.

Mobility, defined as the ability to project power over distance, is another characteristic of good chess. It is the goal of a good chess player to ensure that each of his pieces can exert pressure upon a maximum number of squares, rather than being bottled up in a corner, surrounded by other pieces. Hence, the chess master looks forward to pawn exchanges (infantry battles, if you will), not because he is trying to wear down the enemy, but because he knows that he can project the power of his rooks (mechanised forces) down the resulting open files. In this manner, the chess master fights in order to move. This idea is central to manoeuvre warfare theory.

Robert R. Leonhard
The Art of Manoeuvre, 1991

Air power employed optimally and imaginatively, is a critical element in satisfactorily ameliorating the disadvantages of not knowing the details of topography and terrain as well as the obstacles that they pose to the smooth deployment of surface forces. Space-based and airborne assets provide comprehensive information regarding the topography and terrain of the battleground. Some of these capabilities are commercially available and, therefore, gathering the necessary information becomes financially viable for even resource-limited military forces. The second aspect is the employment of airlift capabilities to overcome the physical impediments to surface manoeuvre that terrain and topography pose. At the operational level, air power can insert, sustain and extract surface forces from the battlefield rapidly, overcoming the most difficult physical obstacles of terrain and topography. However, it is in collecting and disseminating battlefield information that air power becomes a strategic asset. This capability converts to a war-winning factor when skilfully employed.

*Alliances ameliorate, to a certain extent, the constraint of
limited asset availability of air power*

*Air power can provide comprehensive information regarding the
topography and terrain of the battleground*

*Air power's capability to collect and disseminate battlefield
information is a strategic war-winning factor*

War is founded on deception.
Manoeuvre is determined by advantage;
Division and unity are the elements of change.

During swiftness, be rushing as a wind;
During stillness, be stately as a forest;
During aggression, be ravaging as a fire;
During immobility, be still as a mountain.
Be inscrutable as the dark;
Strike like a thunderbolt.

All war is premised on deception. Manoeuvre is motivated by seeking advantage, and change to the prevailing situation is created by dispersal and concentration of forces. When campaigning, be as swift as the wind in manoeuvre; when marching leisurely or staying in one place, be as majestic as the forest in steadiness; when raiding and plundering, sweep everything in front like a ravaging fire; and in defensive positioning, be as unyielding as a mountain. Plans must be like the night—dark and impenetrable—and attacks like a thunderbolt—swift and devastating.

This stanza covers the initial phase of conducting armed conflict, starting with the planning and enunciating the requirements to be victorious in battle. The first premise, and perhaps a fundamental theme of the treatise, is that the adversary must not be permitted to have even the slightest knowledge or understanding of one's own plans. Deception of the enemy, especially regarding the intentions, numerical strength and equipment capability of one's force, is a critical aspect of formulating campaign plans. This can be achieved by active and passive measures—actively by initiating actions that provide the adversary with incorrect information or passively by concealing the force's dispositions and manoeuvres. In this situation, manoeuvring the force must only be done in the pursuance of improving the positional advantage and the decision whether to concentrate or disperse the force will be dependent on prevalent circumstances. As a corollary, by concentrating or dispersing one's own forces a static situation can be altered to one's advantage. These are the basic principles that must be adhered to prior to initiating combat operations.

There are two independent factors that must be considered in determining the requirements that must be fulfilled to win a campaign, one the readiness of the force to take action successfully and the other the capacity of the force to carry out a victorious attack. Although independent, the characteristics of a force that will support both

these factors overlap and are synonymous. Sun Tzu has used similes to explain the four fundamental characteristics required within a force for it to possess the capacity to successfully initiate actions and carry out attacks.

First, when rapid advance is needed, the force needs to be as swift in manoeuvres as the wind, a particularly good simile because it has an added element of the wind being invisible and leaving no trace of its presence, a throwback to the basic principle of deception. Second, when the force is undertaking deliberate movement, the comparison is with the compactness of the forest, which although not orderly in its growth, provides a quality of denseness that is necessary for defence. Third is the fierceness of attack that is compared to the ravaging fire that is beyond human control. The fourth characteristic is the necessity to hold a position. Sun Tzu compares the immobility required to the stillness of the mountains, that is a defensive posture that is impossible to move even when the adversary engages it with their full military capabilities. Sun Tzu explains that one's own strategic plans must be concealed like the impenetrable darkness that pervades the night and that an attack must be as quick as the thunderbolt that strikes in the blink of an eye and cannot be parried.

Concealment of one's plans is an all-encompassing theme in Sun Tzu's treatise, although the maxim 'all war is deception' sounds curiously Machiavellian. The employment of air power, especially in the precision strike role, is perhaps the easiest to conceal because the reach and penetration of air power negates the requirement to pre-position assets to carry out the attack, thereby not providing the adversary any prior warning. In the past, air power has carried out pre-emptive strikes and its effects have been devastating in instances where the adversary was unaware of the intentions as well as the time and place of the strike. The same level of surprise is never possible with surface or maritime forces since they require pre-positioning of material, personnel, and other assets well in advance of the proposed strike. The chances of maintaining absolute secrecy and thereby retaining the element of surprise are limited in these circumstances.

At the end of the war, Allied Intelligence Officers discovered in captured files of the German Secret Service the text of two hundred and fifty messages received from agents and other sources before D-Day. Nearly all mentioned July and the Calais sector. One message alone gave the exact date and place of the invasion. It had come from a French colonel in Algiers. The Allies had discovered this officer was working for the *Abwehr* and he was arrested and subsequently turned around. He too was used to mislead Berlin—used and abused. The Germans were so often deceived by him that they ended by treating all his information as valueless. But they kept in contact, for it is always useful to know what the enemy wants you to believe. Allied Intelligence, with great boldness and truly remarkable perversity, had the colonel announce that the Invasion would take place on the coast of Normandy on the 5th, 6th or 7th June. For the Germans, his message was absolute proof that the invasion was to be on any day except the 5th, 6th or 7th June, and on any part of the coast except Normandy.

Gilles Perrault
The Secrets of D-Day, 1965

Of the four similes used to explain the primary characteristics of a successful force, swiftness and aggression are particularly applicable to air operations. The characteristics of stillness and immobility together translate to strategic capability depth within the air force in terms of asset and resource availability. There is no swifter power projection capability than air power with its characteristics of speed, reach and penetration. Further, air power is an inherently offensive capability that can unleash controlled but catastrophic aggression if necessary. Purely in terms of the stanza in the treatise, a joint military force will be able combine the two characteristics of swiftness and aggression only with the optimum use of air power—in the strike role independently, or as a crucial enabler for surface forces to achieve their objectives. Holistic strategic depth of an air force is a complex concept and, therefore, more difficult to understand. It is a combination of geographic depth of the nation, availability of air power assets of the necessary calibre, adequacy of the quantum of air power resident in the force vis-à-vis the duration and predicted tempo of projected operations, and attrition tolerance. Adequate strategic depth is a mandatory requirement to have assured success in the employment of air forces, while the quantum of air power required might vary with each individual campaign.

The need for campaign plans to be inscrutable is based on the premise that the adversary will use all possible means to gain access to one's plans. Secrecy in planning and putting in place active and passive deception methods become more important with the complexity of strategic objectives to be realised. Offensive action by air power is indeed swift enough to negate any defensive action by the adversary and can achieve total surprise if the planning has been truly secret and the execution efficient. In air power

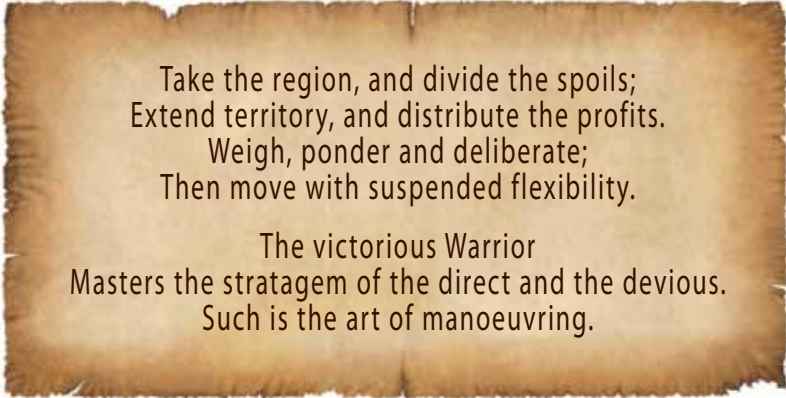
terms, this stanza emphasises the need for secrecy and deception in the planning and execution of the air campaign and explains the four major characteristics required in a force to achieve victory in a campaign.

The characteristics of swiftness and aggression in a force are particularly suited to the application of air power

Strategic depth of an air force is a complex concept encompassing:

- geographical depth of the nation,*
- availability of air power assets and capabilities, and*
- duration and tempo of operations*

Security of strategic plans and efficiency of execution are the two major factors that contribute to success in an air campaign



Take the region, and divide the spoils;
Extend territory, and distribute the profits.
Weigh, ponder and deliberate;
Then move with suspended flexibility.

The victorious Warrior
Masters the stratagem of the direct and the devious.
Such is the art of manoeuvring.

Feed off the enemy and, therefore, divide the force into small elements in poor areas and divide the newly-gained areas with the force. Ponder, deliberate and weigh the situation; then take action while retaining the potential for flexibility, but adapt only when necessary. A successful general will have mastered the strategy of direct and indirect approaches to victory, which is fundamental to the art of manoeuvre.

There are two interpretations to the earlier part of the stanza; one that says booty from plunder must be fairly divided amongst the troops and the other that troops should be divided into smaller elements if being used for plunder. This stanza is about occupation of enemy territory and, therefore, both the interpretations are aligned towards the same direction. If wealth from plunder is equitably divided, then it will lessen the abuse of

indiscriminate plundering by individual troops and if the troops are divided into smaller groups, control and responsibility is relatively easy to exercise. Domination over the adversary's people and territory should be converted to advantage by ensuring that the force lives off the land, thereby lessening the pressures on one's own logistic lines of supply.

By dividing the force into small but operationally viable elements, it will be possible to find a greater breadth of resources from the occupied territories since they will be able to spread out further to cover a larger area and yet be under effective central control. In this stanza Sun Tzu has gone beyond merely confronting the adversary to deriving benefit from the captured areas, adding a different dimension to the concept of victory in armed conflict. Using the resources that come from occupied territories advances one's own position towards greater advantage and makes it stronger.

The positioning of the force must only be done after carefully weighing the pros and cons of the emerging situation, aligning the manoeuvre with the strategic plan and deliberating over the impact of the manoeuvre on the overall campaign. The essence of manoeuvre is to retain sufficient flexibility throughout its execution to alter plans to suit the emergent circumstances as they become understood. Rigid manoeuvres are more likely to fail at the first instance of challenge. A successful commander will always be able to avoid being surprised by perceiving threats and activating countermeasures to the adversary actions beforehand, while being able to retain the element of surprise in one's own initiatives against the adversary.

The essence of this stanza, in air power terms, is that of retaining flexibility in operations. Even when an operational plan is carefully aligned with the strategic plan, there may be instances when alteration of the plan is required to ensure success of the operation. Under such circumstances, retaining adequate flexibility will provide the recourse to reorientate the operational plan and still remain sufficiently aligned to move towards the strategic goal. Such flexibility can be assured by always having a fallback option in terms of an alternative plan that would achieve the objective. Here it is prudent to understand that the easiest plan to execute may not necessarily be the best option available. An air campaign plan is perhaps the most dynamic to assemble comprehensively and needs to be built around a sufficiently broad structure to cater for emerging exigencies that normally would not give sufficient reaction time to initiate new a planning process.

The second aspect of air power that emerges from this stanza is the viability of logistic lines and the need to ensure that the forces are always well supplied. Sun Tzu advocated the capture and plunder of adversary territory as well as its occupation for a long duration, 'living off the land' being a viable concept for the surface forces of that era. In contemporary conflicts, shaping the battlespace and ensuring control of the air over occupied territories to ensure that surface forces are secure are the primary air power contributions. In terms of 'living of the land', if adversary aerospace industry capabilities are captured, although commonality of equipment and other technical issues would preclude deriving any short-term benefit, there could be long-

term technology development advantages that could accrue. Sun Tzu concludes that a successful practitioner of the art of manoeuvre will be able to master both the direct and the devious, meaning that a successful air commander will have the ability—through optimum employment of air assets—to be able to pre-empt the actions of the adversary and move forward one's own campaign plan in a flexible manner, commensurate with the strategic objectives of the broader campaign.

Air campaign plans must retain sufficient adaptability to achieve operational flexibility while continuing to be aligned with the strategic plan

An air campaign plan is dynamic and must be built around a sufficiently broad structure

Air commanders must be able to pre-empt adversary actions and advance air campaign plans in line with the strategic objectives of the broader campaign¹

¹ The chapter would naturally have been complete with this stanza. However, there is a long appendix attached, which includes quotes from an old military manual, now lost, called 'The Army Administration' or 'The Book of Army Management' or 'The Military Primer'. Considering the large number of battles and wars that had been fought for centuries before Sun Tzu's time between the various kingdoms and smaller principalities of China, it is more than likely that a collection of military maxims had been made and written down at some earlier period. Apparently this book was extant at the time Sun Tzu wrote his treatise. This attachment from another book of the time has cast some doubt, in the minds of at least few of the interpreters/commentators, regarding the authenticity of the claim that the entire treatise was written by Master Sun Tzu himself. It is the opinion of this author that even though some of the concepts below may have been taken from the old military text, Sun Tzu has not only adapted them to fit in with his own thought process, but has also refined the style of the text in such a manner as to make it very similar to his own with hardly any noticeable difference.

Controlling the Variations

Communications

When ears cannot hear; act with drums and bells.
When eyes do not see; act with banners and flags.
In this way the eyes and ears of the force are one.

With the force so focused,
The bold will not advance alone,
Nor will the fearful retreat alone.
Such is the Art of employing the numerous.

In night battles, employ torches and drums;
In daytime employ banners and flags;
So as to guide the eyes and ears of the force to locate the Variations.

Since the voice cannot be heard in battle, drums and gongs are used. As troops cannot see each other clearly in battle, flags and banners are used. These are the means whereby the ears and eyes of the force are made to focus on a particular order. When the force is focused as an entity, it will not be possible for the bold to advance alone or for the cowardly to retreat alone, because the force will be cohesive and acting in unison. This is the art of commanding large forces. At night the use of signal fires and in the day the use of banners will guide the soldiers to adapt their movements in accordance with the commander's intended manoeuvres.

This stanza gives the details of how communications must be manipulated in battle to ensure unity of command. Although the detailed examples are from Sun Tzu's time, the concept of unified command and the means required to ensure that large forces act in concert are still as valid today as they were in 250 BC. The strategy of conflict invariably involves addressing the issues of cohesiveness, unity in action and mitigating the fog and friction of war. All military confrontations are chaotic and the aim of a commander is always to minimise the confusion, gain the advantage and control the tempo, direction

and momentum of the conflict. Adequacy of communications to ensure that the force is able to function as a single entity should, therefore, be the first consideration.

You can do nothing with an army that is an amalgam of a hundred people here, a hundred people there, and so on. What can be achieved with four thousand men, united and standing shoulder to shoulder, you cannot do with forty or even four hundred thousand men who are divided and pulled this way and that by internal conflicts ...

Mubarakshah, Persia
Rules of War and Bravery
13th century BC

To achieve this, communications could be divided into two; one at the strategic level where the senior commander's intent and the strategic plans are passed on to subordinate commanders in the field, and the second at the operational level when communications are more concerned with the actual combat manoeuvres. However, in both cases, adequacy in communications should be defined as the availability of bandwidth, redundancy and security of the network, speed of information dissemination to the desired level, both up and down the chain of command, technology-match and the ability to scale up or down when operating with partner nations that may be at a higher or lower level of technology, and communication protocols that are common to all Services and agencies involved. This is critical for effective unified command in battle and fundamental to manoeuvring large forces.

In all campaigns, unity of command across the force is a primary requirement for success and is disproportionately dependent on the effectiveness of communications. The communications requirements at the strategic level are common to all Services, whereas at the operational level they vary widely. Effective communications are critical to ensure precise control of air power elements applying lethal force over great distances and, therefore, the success of air operations is particularly dependent on them throughout the campaign. Efficacy of the employment of air power depends on optimising the combination of its characteristics that will be needed to create the necessary effects in a given situation.

While there could still be instances of massing of surface forces, in an air campaign the days of the thousand-bomber raids are things of the past. Today, a single aircraft is capable of creating the effects required to achieve the desired end-state. Even though massed forces are an anathema to air power employment, the criticality of communications in their effectiveness has increased because the employment concepts of air power themselves have undergone radical changes. Communications now concentrate on providing real-

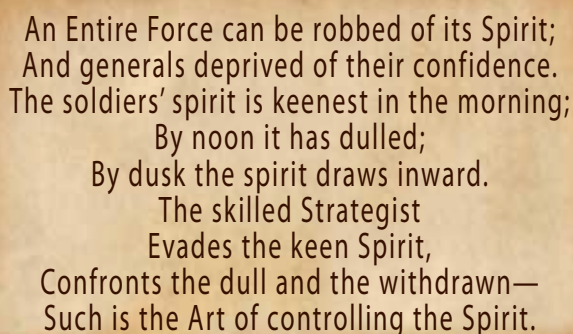
time information to air power assets that have already been launched to facilitate time sensitive targeting in what is fast becoming a hybrid battlefield. The success of the lethal application of air power is almost completely dependent on communications. Sun Tzu's maxim regarding communications in battle can be extrapolated to the current employment concept of air power in terms of the focus of the strike force and timeliness of the availability of targeting information. Through effective communications, air power can be at the vanguard of the campaign while remaining well integrated with the rest of the force.

Effective communications are critical to ensure control over air power elements operating at great distances

Time sensitive targeting, a unique contribution of air power in the joint campaign, is almost completely dependent on the adequacy of communications

Air power remains integrated with the rest of the force, while operating at the vanguard, through effective communications

Morale



An Entire Force can be robbed of its Spirit;
And generals deprived of their confidence.
The soldiers' spirit is keenest in the morning;
By noon it has dulled;
By dusk the spirit draws inward.
The skilled Strategist
Evades the keen Spirit,
Confronts the dull and the withdrawn—
Such is the Art of controlling the Spirit.

Victory in battles depends on courage and spirit. An entire force can be robbed of its spirit and commanders deprived of their courage, confidence and presence of mind. In war, if a spirit of anger can be made to pervade all ranks simultaneously, the onset of the force will be irresistible. In the beginning

morale is high, then slackens and finally dissipates. A sophisticated commander will avoid the enemy when their morale is high and attack when they are sluggish. This is the art of controlling morale.

The achievement of supremacy in battle is dependent on a number of factors; a major one being the handling of the morale of the adversary's as well as one's own forces. This stanza explains the basic operational doctrine regarding morale in battle and its strategic relationship with the earlier maxim regarding communications. The confidence of the commander derived from unbroken and clear communications with the force is a crucial factor in maintaining a high level of confidence within a force. When communications with the leadership are strong and information flow is accurate and timely, as well as combined with certain intangible elements like emotion and spirit, the morale of the force will be high. In other words, it must appeal to the cognitive domain of the human being where emotions are the primary basis for actions, especially in the highly-charged atmosphere of direct confrontation in combat. Sun Tzu referred to this combined factor as 'spirit', which translates in contemporary terms as morale of the force. The waxing and waning of the human spirit with the cycle of the day, the biorhythms of the body, will also have an impact on the morale of the force as a whole. All these factors can be identified and carefully exploited to reduce the adversary's morale, although the stanza is equally applicable to one's own forces as well. There is an indelible connection between morale and leadership, essentially the morale of a force is primarily dependent on the effectiveness of their leadership cadre. Therefore, morale of a force can be lowered through a number of actions that aim to confuse the leadership and thereby make them under-confident.

There are always moments when the commander's place is not back with his staff but up with the troops. It is sheer nonsense to say that maintenance of the men's morale is the job of the battalion commander alone. The higher the rank, the greater the effect of the example. The men tend to feel no kind of contact with a commander who, they know, is sitting somewhere in headquarters. What they want is what might be termed a physical contact with him. In moments of panic, fatigue, or disorganisation, or when something out of the ordinary has to be demanded from them, the personal example of the commander works wonders, especially if he has had the wit to create some sort of legend around him.

Field Marshal Erwin Rommel, 1891–1944

Given the central importance of morale in the performance of a force, it is necessary to monitor that of the adversary and initiate confrontation when their morale is at the

lowest. Morale of a force is affected not only by leadership, but also by other physical factors like tiredness and sufficiency of equipment, as well as extraneous factors such as the climate, weather and time of day of the confrontation. Of course this will also have a salutary effect on the morale of one's own forces and, therefore, the conflict will have to be initiated in such a way that own morale is at a relatively high state compared to that of the adversary's. A major skill of a sophisticated commander, well versed in campaign strategy, is the outcome of a judicious combination of the ability to judge the opportune moment to engage the adversary that will assure victory and the cleverness to manipulate their morale.

Although morale of the force is a common theme in all military operations and transcends the narrow divisions of the operating environment, some actions can affect morale, both improving and lowering it, faster than others. Being able to leverage off the actions with the potential for the greatest impact is where the differences in forces and commanders lie. It has been well documented that surface operations become extremely difficult if the opposition has control of the air and the capacity to constantly attack one's surface forces from the air. In a large number of cases, this has led to the lowering of the morale to an extent wherein the surface forces have retreated from what was till then a winning position. The capability of air power to carry out devastating pre-emptive strikes, at a time and place of one's own choosing, can also create conditions that can erode and ultimately destroy the adversary's morale.

We have the enemy surrounded. We are dug in and have overwhelming numbers. But enemy air power is mauling us badly. We will have to withdraw.

Japanese infantry commander,
Situation Report to Headquarters, Burma
World War II

Even though it is prohibited from a humanitarian point of view, in extreme cases, air attacks on the civilian population and infrastructure of an adversary can have a direct impact on the morale of their fighting forces. Air power theorists advise that such attacks must be carried out with catastrophic force for them to create the necessary effect. In contemporary conflicts, a sovereign state will be extremely reluctant to permit such actions by their air forces, but when a war of national survival is being waged such actions cannot be ruled out. There is a dichotomy here in that, if the conflict has reached a stage of national survival, then the nation may not possess the necessary air power capabilities to carry out such attacks effectively. The air strikes against population and civilian infrastructure in this case could perhaps be indicative of the use of nuclear weapons.

On the other hand, the morale of the fighting forces can be adversely affected by employing air power in attacks that are of lesser intensity but carried out with precision against preselected targets. Perhaps more than other military capabilities, air power can affect morale more rapidly and with comparative ease in times of conflict. Since Sun Tzu deals with the morale of fighting forces only immediately prior to and during actual conflict in this stanza, the effect on the morale of the general population through a range of nonlethal actions, such as providing prompt humanitarian assistance to victims of natural or man-made calamities through the employment of air power assets, is not being considered here.

Battle of Longewala (Indo-Pak Conflict 1971)

The Battle of Longewala (4–5 December 1971) was one of the first major engagements in the Western sector during the Indo-Pakistan Conflict 1971. The Pakistani plan envisaged an armour thrust across the desert to initially capture the outpost of Longewala, and then the towns of Ramgarh and Jaisalmer to assist the 1st Armoured Division in capturing Sri Ganganagar. The Indian opposition at Longewala was only an infantry company with mortar and machine-gun support with no armoured vehicles. The movement of Pakistani armour was detected by an Indian forward patrol on the night of 4 December. Although the Pakistani attack commenced at 0030H on 5 December, the tanks could not advance because of barbed wire obstacles that held their supporting infantry back.

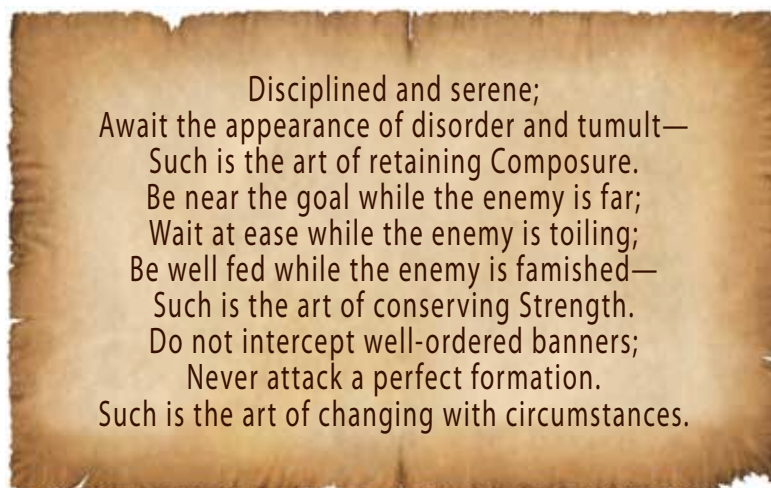
In the early morning of 5 December the Indian Air Force (IAF) committed a squadron of Hawker Hunters and another of HF-24 'Marut' ground attack aircraft to stopping the armoured thrust till surface reinforcements could be made available. The Pakistani armoured column, almost 20 kilometres long, was caught in the open desert without adequate air defences or air support. The IAF claimed to have destroyed 22 tanks in the first few hours of the day and the advance was halted by noon. Subsequently the Indian Army's armoured reinforcements forced a withdrawal.

The morale of the Pakistani troops suffered a great blow since they did not receive any assistance from their own air force as is indicated in an intercepted Pakistani message (unauthenticated) which could be translated to English as, 'The enemy air force has been creating havoc—one aircraft leaves and another comes and stays overhead for twenty minutes. 40 per cent of troops and tanks have been destroyed, injured or damaged. Further advance has become very difficult. Send air force for help, otherwise even a safe withdrawal would be difficult'.

Air power, employed with precision in a timely manner, can create situations from which the adversary will find it difficult to extricate their forces in contact, which will have a devastating adverse impact on the morale of the force..

Control of the air has a direct impact on the morale of the surface forces
Catastrophic air attacks on population centres can not only lower morale
but also has have potential to make the adversary capitulate
Air power enabled disaster response has a morale-boosting effect on the
population of the nation as a whole

Composure



Presence of mind and appearing composed at all times are the commander's most important assets—qualities that bring discipline to disorder and courage to the panic-stricken. Await a disorderly enemy in good order, and a clamorous one in serenity. This is the art of controlling the mental factor. Aim to be near the battlefield when the enemy is still far away, to be at rest while the enemy is still toiling and exhausted, and to be well fed when the enemy is famished. This is the art of conserving strength. Do not attack a well-ordered enemy advancing with imposing arrays. This is the art of controlling changing circumstances.

Some of the major factors in achieving supremacy in battle are retaining composure, conserving strength and adapting to changing circumstances. Conflict is never painless and, therefore, the commander and the force must be mentally prepared to accept the hardships and losses associated with conflict, even when victorious. This requires being

disciplined and calm in the face of the chaos and uncertainty that invariably accompany combat operations. Sun Tzu has extolled the virtue of anger in making the force irresistible in a previous stanza and composure in the face of calamity is a complementary mental state to it, although somewhat different. An appropriate combination of anger and composure is the optimum, with the requirement for composure maximum at the higher levels of command becoming slightly reduced at the lower levels progressively, though not to the extent wherein the fighting forces have a controlling element of anger.

Conserving the physical strength of the force is as applicable today as it was in Sun Tzu's time. Hostile confrontations should be orchestrated in such a manner that they take place at the time and place of one's own choosing so that the adversary is forced to move into battle from a distance while still struggling with combat preparations. This action is at the tactical level of operations, but planning to achieve it and coordinating the different actions will have to be conducted at the strategic level for optimum effect. Hence, the commander must be aware of the adversary force's physical status at all times in order to synchronise the application of one's own strength with their weakness.

The first quality of a commander-in-chief is a cool head, which receives a correct impression of things. He should not allow himself to be confused by either good or bad news. The impressions which he receives successively or simultaneously in the course of a day should classify themselves in his mind in such a way as to occupy the places which they merit, for reason and judgement are the result of comparison of various impressions taken into just consideration.

Napoleon Bonaparte, 1769–1821

When the adversary is seen to be relaxed and well prepared for a confrontation, it should be delayed so that other weaknesses can be identified and exploited. The timing of the confrontation is of fundamental importance in determining its outcome. Sun Tzu teaches that all strength degrades over time and, therefore, when the adversary is well ordered and prepared one should exercise patience and wait to take action. The potential mistake under these circumstances is one of impatience, especially when one's own forces have been primed and prepared and are eager to enter conflict. This also refers back to the concept of composure at the highest level of command. Adapting to changed circumstances while retaining composure and patiently preserving one's own strength is the acme of strategic skill in the employment of forces.

Retaining composure under all circumstances and the enforcement of discipline within the lower levels of the force are, once again, traits that are equally important in commanders of all military forces. However, the conservation of physical strength has different connotations for air forces. Air forces are reliant on technologically advanced

assets to perform their roles and, therefore, require greater attention to detail in their operational planning. Sun Tzu demands that commanders ensure their troops are well fed. In air power terms this can be metaphorically stretched to mean ensuring adequacy of technical supply requirements that are its lifeblood, while denying the same to the adversary. The chance of technical failures directly affecting operational capacity injects an element of uncertainty to air operations and has to be a primary consideration during all planning. In an indirect manner, this possible shortfall, somewhat outside their span of control, could also affect the composure of commanders who are not well experienced in the vagaries of conflict. From a perspective of conserving strength, air forces will also have to be cognisant of the need to protect the expensive and, at times, limited quantity of assets that they possess, a direct impact of their cost-intensive nature.

While preparing plans for operations, air forces must take into account the state of readiness of the adversary forces and avoid their strongly defended areas while attempting to exploit weaknesses in their air defences. If the adversary is seen to be well prepared and of equal capability to one's own air forces, it may even be necessary to postpone the planned campaign while other methods to weaken their position are investigated. Sun Tzu advised avoiding perfect formations, which in modern conflict would translate to a broader joint framework that would include control of the air and the surface battlespace. The requirement to have control of the air for the success of all other operations is an unassailable maxim that can only be disregarded at great peril. When faced with an equally capable adversary, it would be prudent either to build up one's own air power capabilities to a higher level before embarking on conflict or undermine the strength of the opposing air force through either covert or overt actions. The concept of pre-emptive strikes comes into prominence under these circumstances. Sun Tzu stresses the need for both commander and force to be adaptable to change. In air campaigns, adapting to changing circumstances by optimising the inherent flexibility of air power is a critical component of winning strategies.

*Air power's reliance on technology entails the need for detailed planning
for the success of air campaigns*

*The possibility of technical failures brings an element of
uncertainty to air operations*

*As far as possible, an adversary with parity in air power capabilities
should not be directly confronted*

The Artful Strategy

These are axioms of the Artful Strategy—
 Do not advance uphill,
 Nor oppose an enemy whose back is against a hill.
 Do not pursue when flight is feigned;
 Do not attack when the enemy is keen;
 Do not swallow a bait; or thwart a withdrawing force;
 Do not press a besieged force, but leave a passage.
 Do not press an enemy at bay.
 This is the Art of Warfare.

The fundamentals of employing forces depend on terrain, subterfuge and the defeated opponent. When the enemy occupies high ground, do not confront him uphill; and when his back is secured by being against a hill, do not make a frontal assault. When the enemy pretends to flee, do not pursue; do not attack their elite troops; and do not accept a proffered bait. When the enemy is returning home, do not interfere. Do not further aggravate an enemy who has been already contained. This is the art of warfare.

Sun Tzu ended some of the chapters in the treatise with a concluding summary of the basic rules of warfare explained in the context of the main topic discussed in that particular chapter. This chapter is concluded with few generic axioms, some at the operational level that deal with direct confrontation. The axioms relate positioning to the terrain, adversary subterfuge and the possible ways to deal with a defeated force. The first rule is about basic positioning that Sun Tzu explained through the simile of hills. He advised not to attack an adversary whose position is difficult to approach or one who is in a strong and concentrated defensive position. Under both these conditions, the effort should be to force the adversary to defend multiple positions, thereby making them split their forces and weakening their concentration. Commanders have to be careful not to fall prey to the adversary's subterfuge which could take the form of a feigned retreat to draw one's forces into an ambush, or an offer of easy victory in some areas even as they are preparing to strike elsewhere while one is thus distracted or creating the illusion of their strongest points being weak spots susceptible to attack. While it is necessary in conflict to pursue the retreating adversary, this must be done after determining the cause for their backing down and an adversary offering a concession without sufficient

cause should always be taken as a possible misleading cue. The basic concept is that if a position is not cleanly won, then one should be suspicious about the adversary's intent.

[As to the second case], that of being drawn into one [a trap or ambush] ... you must be shrewd about not believing easily things not in accord with reason. For example, if the enemy puts some booty before you, you ought to believe that within it there is a hook and that it conceals some trick. If many of the enemy are put to flight by your few, if a few of the enemy assail your many, if the enemy turns in sudden flight, ... you ought to fear a trick. And you should never believe that the enemy does not know how to carry on his affairs; rather, if you hope to be less deceived ... and ... run less risk, in proportion as your enemy is weaker, in proportion as he is less cautious, you should the more respect him.

Niccolo Machiavelli
The Art of War, 1521

Sun Tzu advocates fairly easy terms to deal with a defeated force—that they must not be pressed too hard and that they should be allowed to go back if they are genuinely withdrawing. Most commentators explain this fairly significant advice in terms of portraying a defeated force returning home as willing to fight to the death if their path is barred with no possible escape route being made available. However, there is another school of thought that interprets this to mean that the adversary should be offered a way out, and when that route is accepted, their courage born of desperation will be drained and they can be easily annihilated. The author subscribes to the latter interpretation because, all through the treatise, Sun Tzu supports the concept of total defeat of the adversary once battle has been joined. Further, since the maxim has probably been adapted from another older book, it is possible that Sun Tzu deliberately left the stanza open to varied interpretations unlike other stanzas that he has himself composed. Even while not pressing a desperate adversary or turning a withdrawing force into a desperate adversary willing to fight to the death, one must employ a certain amount of subterfuge to making them believe that they are safe before carrying out the final strike. This is the masterful employment of the art of warfare.

The three fundamentals regarding the employment of forces discussed in this stanza have air power connotations at the operational and strategic levels. At the operational level of the air campaign, one must always be aware of the adversary position and avoid engagements from an unfavourable position at all times. The use of subterfuge by the adversary is more common in air operations and perhaps more difficult to pinpoint at all times. Decoy raids to mask the actual attack and the intended targets have been common practice since World War II and are resorted to even in contemporary operations.

However, the identification of vital centres of gravity of the adversary would normally coincide with the adversary's own assessment of their weak areas and, therefore, targeting them probably will not be a surprise.

The dynamic nature of the air campaign means that the challenge for the adversary will be to protect their centres of gravity in ways that make an attack on them seem 'uphill'. The attempt will be to try to portray centres of gravity as unassailable, that is protected by a 'virtual hill'. It is easier to fall for adversary subterfuge at the operational level of an air campaign, wherein a lure could be sent out to draw one's own air combat assets into a pre-planned ambush. The chances of such actions in the contemporary scenario of limited wars and one-sided air campaigns are minimal. From an air power perspective, dealing with a defeated adversary force is also a comparatively smaller task, since defeated air forces will not have the capability to mount a credible fightback. Valuable air assets should not be risked or wasted in pressing an already beaten adversary, but conserved for the offensive campaign. The strategy explains how best to advance one's own position while expending the minimum amount of energy and achieving the best results for oneself.

*The use of subterfuge is common in air campaigns and easily carried out
A defeated air force will not be able to fight back credibly and, therefore,
may not warrant a final blow of annihilation*

*Adversary centres of gravity can be made to appear well protected
against air attacks*

Conclusion

This chapter is predominantly concerned with the manoeuvres of a force to obtain a position of advantage and the large number of variables that directly and indirectly impact on its ability to do this efficiently. The variables also combine in different permutations to create an even more diverse number of situations that a commander will have to consider in his planning and execution of the campaign. Air power's inherent characteristics of responsiveness, reach, penetration, tempo of operations and lethality make the air campaign one of rapid and decisive 'manoeuvre'. Further, swiftness and aggression, the two cardinal elements in manoeuvre warfare, are ideally suited for the employment of air power within the broader campaign. There is an indisputable connection between manoeuvre and air campaigns.

The success of a campaign is dependent on the strategic plans being secure and well formulated, encompassing sufficient flexibility to permit lower level plans to be adapted in the course of the conflict. This is vital for the success of the air campaign. An air campaign plan will have to be formulated within a very broad framework because of the dynamic nature of air operations so that sufficient adaptability is retained within the plan at all times to cater for operational requirements in the short term. However, such adaptability must stay within the bounds of the strategic plan and be continuously oriented towards achieving the laid down objectives.

Within the context of manoeuvre warfare, air power provides some critical capabilities. The advantageous positioning of forces is much more easily achieved through the use of air mobility and sufficiency of airlift ensures that the logistic supply chain is always maintained at the appropriate level. A prerequisite for the smooth and efficient functioning of these capabilities is control of the air, which is the core task of all air forces at all times. In contemporary 'irregular warfare' scenarios, air mobility is a prized capability because of its utility as an enabler to exploit time sensitive windows of opportunities in the battlespace. While the actual operations of this nature will be at the tactical level, the planning and coordination will have to be carried out at the strategic level of command in order to maintain centralised control over these scarce assets.

A major factor that Sun Tzu highlights in the chapter is the use of subterfuge or deception to confuse the adversary as one part of a broader strategy of conflict avoidance. The other part of conflict avoidance is based on deterrence and in both cases air power capabilities make crucial contributions at the strategic and operational levels. Further, the concept of deception, which would form part of indirect action, as being fundamental to the success of a confrontational engagement with an adversary is one of Sun Tzu's major axioms. This is also amply supported by air power capabilities like carrying out decoy operations, creating 'virtual hills' that are insurmountable for the adversary and rapid deployments that diffuse the focus of the enemy.

Air power also creates virtual strategic depth not only for the air force, but for the nation as whole, by controlling the tempo of operations and the ability to carry out concurrent operations across and beyond the theatre of immediate interest. This is particularly valuable for nations that lack geographic depth when entering into conflict situations. Sun Tzu also emphasises the importance of morale for a force to be victorious. In contemporary conflict situations, control of the air is a vital contributory factor to maintaining the morale of the forces. It has been demonstrated over the years that constant aerial harassment can very rapidly sap the morale of otherwise robust forces, leading to certain defeat. This can only be avoided through adequate control of the air over the territories in which one's own forces are operating.

Morale is also inexplicably connected to the capability and skill of the leadership. In fact, Sun Tzu explains the need for composure in commanders and draws the thread across to its impact on the morale of the force in a clear manner. This human factor is one of the major factors that cannot be clearly quantified in combat conditions and needs careful nurturing at all levels of command. Sophisticated commanders will always be able to judge the morale of their own forces while being able to initiate actions that will undermine that of the adversary forces. This is an invaluable skill and can pave the way to victory.



8

Adapting to Change

Flexible Air Power

The literal translation of the title of this chapter would be ‘The Nine Variations’, but they have not been enumerated in the chapter as such and since Sun Tzu has already indicated earlier that in war variations are innumerable, it can be surmised that ‘nine’ metaphorically stands for an indefinitely large number. It means that by its very nature conflict is unpredictable and a force must possess an inherent capacity to adapt to change in order to be successful. In fact, Sun Tzu makes it clear throughout the treatise that strategy requires to be adapted continuously to suit the emerging requirements at all levels of warfare—from the grand strategic to the tactical. In his assessment, strategy is seen as a systemic process that follows a laid down set of rules and uses well-defined methods to formulate the most appropriate, yet flexible, plan to address emerging situations comprehensively in a contextual manner. A distinctive combination of possible variations makes each context

in conflict unique and, therefore, operations must be adapted based on the advantages and disadvantages that can be perceived as the strategy unfolds during the progress of a campaign. The concept of advantages and disadvantages itself must be clearly understood. Sun Tzu refers to two kinds of advantages; one that occurs during the conduct of a campaign that in itself is following a well-defined strategy, clearly indicative of the veracity of the strategy, and the other that is consciously created by a sophisticated commander through the skilful manoeuvring of the force in relation to the adversary. Disadvantages being considered in this concept are premised to affect the adversary and provide a winning edge to the strategy being followed by one's own forces. Sun Tzu believed that successful commanders will always be able to recognise and exploit the disadvantages of the adversary while shielding one's own from being identified. Skilfully adapting the strategy to cater for emerging situations is a primary requirement for the efficacy of this concept of manipulating advantages and disadvantages. The chapter explains the possible variations that could occur in conflict and addresses the question of rapid response to unforeseen contingencies that arise.

Sun Tzu also cautions commanders not to become inflexible in following what was a winning strategy on previous occasions, since such an approach will inhibit free adaptation after the conflict has been initiated. In keeping with the theme of the treatise, that winning without fighting a war is the pinnacle of leadership, the chapter also indicates that, even if one's own forces are clearly superior to the adversary, circumstances could develop wherein confrontation should be avoided at all costs. At the end of the chapter Sun Tzu also alludes to certain character traits that make leaders weak, even though they may have the skill and the expertise to be adaptable in enforcing the strategy for a conflict. This is interesting because as a general rule Sun Tzu's maxims do not elaborate on the personal character traits of commanders but focus on the need for leaders and commanders to be well versed in the formulation and implementation of strategy and to have the ability to be decisive in conflict.

Sun Tzu proposes the principle of 'preparedness through adaptability', even for unforeseen contingencies, as the optimum method to avoid defeat in conflict. However, avoiding defeat is only one part of conducting a campaign, the other being securing assured victory. In order to ensure victory, the commander must be adept at recognising emerging opportunities—created through one's own advantage or through exploiting the adversary's disadvantage—and simultaneously adapting the strategy to exploit the opportunity to the maximum. Flexibility is a basic principle of developing an adaptable strategy but the employment of flexibility, especially in conflict situations, to adapt strategy during the progress of a campaign must be done within well-defined rules in order to be successful. While extolling the virtues of adaptability, Sun Tzu also makes it very clear that it has to be done within the ambit of a set of laid down rules. The implementation of an adaptive strategy being 'finetuned' through the flexibility of the force while in conflict is a creative and complicated enterprise. Controlling creativity is the domain of the commander and, therefore, the success or failure of a strategy—that

in turn determines victory or defeat—is dependent on the force having a skilled and sophisticated strategic commander.

Sun Tzu has dealt with the topic of this chapter, adaptability, almost as an introduction to the next three chapters that provide detailed injunctions for dealing with a number of specific situations that arise in conflict. In combination, they cover a very large spectrum of possible situations and Sun Tzu gives commanders guidelines to ensure success in each of them.

The Reins. A horse with no bridle is useless, but equally bad is the horse whose reins you pull at every turn, in a vain effort at control. Control comes from almost letting go, holding the reins so lightly that the horse feels no tug but senses the slightest change in tension and responds as you desire. Not everyone can master such an art.

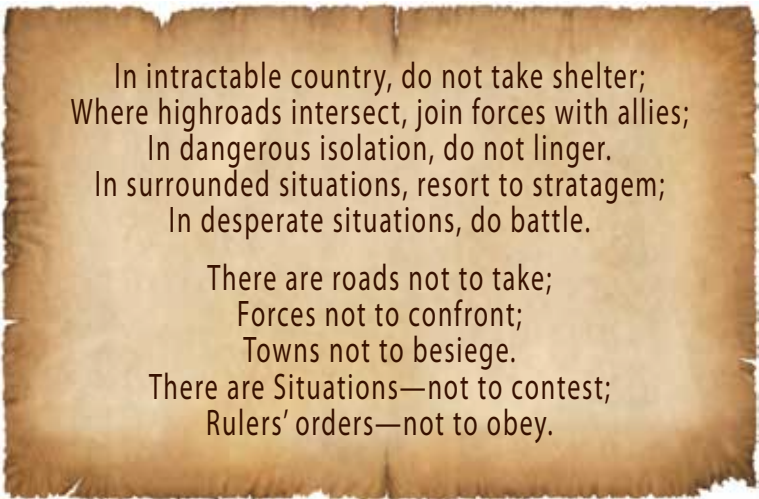
Robert Green
The 33 Strategies of War, 2006

Generally in war,
The commander
Receives the mandate from the sovereign,
Then gathers the troops and assembles a Force.

The general rule for military operations is that the military leadership receives the order from the civilian leadership and then mobilises the troops and assembles the army, judged to best meet the sovereign's objectives.

This stanza is a repeat of the opening stanza of Chapter 7 and, therefore, a large number of commentators have opined that it has been interpolated here purely to provide a continuity to the treatise because the chapter otherwise goes directly into explaining the strategy to deal with numerous variations. Essentially this states in very bald terms that military forces should be mobilised and employed only on the direct orders of the civilian government. The nuances of this fundamental factor in terms of both contemporary operations and air power in particular have already been examined in the previous chapter and as such their repetition here is considered superfluous.

Situational Strategies



In intractable country, do not take shelter;
Where highroads intersect, join forces with allies;
In dangerous isolation, do not linger.
In surrounded situations, resort to stratagem;
In desperate situations, do battle.

There are roads not to take;
Forces not to confront;
Towns not to besiege.
There are Situations—not to contest;
Rulers' orders—not to obey.

The army should not camp on grounds hard to approach. Where paths cross—physically, as in highways and virtually in terms of national objectives—join forces with allies. Do not linger on dangerously isolated positions, use stratagem in enclosed, hemmed-in situations and fight last-ditch battles when in desperate situations. There are some routes which must not be followed, some forces that must not be attacked, some cities which must not be besieged, some territory that must not be contested, and some orders of civilian governments which need not be obeyed.

Strategic adaptations should be done with respect to the geographical terrain as well as the execution of plans. Although Sun Tzu elaborated on the actions to be taken in five specific terrains, the stanza can also be explained at the strategic level of planning. The basic maxim is that the envelope within which all strategies have to be planned and executed is always constrained and determined by one's position and situation. Analysing the possible variations gives rise to one explanation of strategy—it is a process of leveraging one's position within the prevailing environment to improve it. The situations discussed by Sun Tzu must not be viewed as restrictive, but indicative of the myriad circumstances that can confront a force and a commander, and are essentially illustrative in nature. Similarly, Sun Tzu's injunctions of what should not be done are also not exhaustive and by their breadth of considerations—from the purely tactical of the selection of a road, to the grand strategic injunction not to obey an order from the sovereign under certain conditions—he reinforces the concept of retaining adaptability in the execution of a strategy.

Sun Tzu lists the constraints placed on the manoeuvre options of the force by the five types of terrain that will be encountered. First is physically inhospitable terrain, which is not conducive to the establishment of camps. Second is open and connected from all sides, making it necessary to attempt the formation of alliances to ensure protection on all sides. Third is dangerous terrain because it can be isolated from all outside assistance leading to an untenable situation and from which the force should be removed at the earliest. Fourth is surrounded terrain where one should resort to employing strategy in order to avoid the force being hemmed in. Fifth is desperate terrain that will have to be fought over because of the prevailing situation. Here, Sun Tzu is indicating that the physical situation will have a salutary effect on the options available to the commander and is providing examples to amplify the rule.

In the second part of the stanza Sun Tzu provides options for the execution of the strategy and illustrative examples of the variables that a commander would encounter in the conduct of a campaign. However, this part of the stanza is very broad in its coverage and emphasises not only the need for adaptability at the operational level but also the independence of the military from the civilian authority at the grand strategic level under certain circumstances. The examples start at the operational and grow to the grand strategic level—avoiding certain roads where perhaps an ambush is likely, avoiding attacking an opposing force during certain times, avoiding laying siege to a town of uncertain tactical or strategic value, avoiding contesting to gain some positions, and avoiding obeying some orders from the civilian authorities.

Indo-Pakistan War 1971: Bangladesh Theatre

The Indian Army had a mandate to advance fast across the erstwhile East Pakistan and capture the capital Dacca, to obtain the surrender of Pakistani forces in the country in order to minimise casualties and to prevent further atrocities against civilians. However, the large number of rivers and other waterways that crisscross the entire nation, and townships situated in between such surface obstacles made this a difficult task. The terrain and the well-fortified towns made defeating them and achieving the necessary fast movement towards Dacca almost impossible. The Indian Army resorted to a strategy of bypassing the towns to race towards the capital, to ensure an early capitulation of the entire opposition army. The surrender of the Pakistani forces in East Pakistan was achieved in record time. By not besieging towns like Khulna and Jessore, the possibility of slowing the progress towards Dacca, the tying down of a very large force to capture these towns and the attendant high probability of heavy casualties was completely avoided. Bypassing these towns and smaller cantonments—by using helicopter lift whenever available—was a stroke of strategic genius and is estimated to have shortened the campaign by as much as two weeks.

cont.

Considering that the entire conflict lasted only 18 days, an extension of two weeks in the fighting would have had very serious consequences in terms of casualties. The decision to bypass strategically insignificant fortifications was fundamental to the success of the campaign.

Consciously disobeying the Government's instructions is a double-edged sword and a commander must resort to such action only after very careful consideration of its strategic ramifications. Under normal circumstances such a situation will not arise if the lines of communication between the civilian leadership and the military command are transparent and built on mutual confidence. Only a serious breakdown of trust will crystallise such a situation and, if it does happen, then the moral strength of the commander will be put to extreme test. This is not a palatable situation for any democratic nation and both the civilian as well as the military leadership must tread with extreme caution when mutual trust seems to be eroded. The quality of military commanders and their professional competence will determine the long-term future of the military forces under these circumstances. Such a breakdown will have almost immediate repercussions on the campaign being waged and adversely affect the security of the nation.

While the terrain discussed *per se* does not have a direct impact on air operations, metaphorically it has implications for the actions that need to be taken. In the conduct of air operations, ground base security is critical to the capacity of the force to function effectively. This factor has increased importance in expeditionary operations with the added element of having to obtain basing rights which brings in a political hue to the efficient conduct of the air campaign. In a theatre of operations that is vast, it may not be possible for an air force to provide the necessary combat power by itself, emphasising the need for forming alliances and coalitions. Sun Tzu mentions highroads that intersect that in air power terms could be equated to an essential supply route to a faraway theatre of operations, and alliances would then include the provision of forward operating bases rather than merely unified air forces. Similarly, at the operational level it may be dangerous to linger in enemy territory, especially if control of the air is being contested, and one must use correct tactics to initiate a getaway rather than fight when outnumbered or surrounded. The exception will be circumstances when it will become mandatory to engage in order to obtain and maintain control of the air to ensure the success of other campaign-critical joint operations. This would be the equivalent of Sun Tzu's 'desperate situation', wherein the only option available will be to fight and win.

Adaptability in the execution of plans is one of the basic principles of air warfare. The primary requirement for air forces is to ensure that adequate control of the air is maintained during a campaign so that the surface forces are able to conduct their operations without undue interference from the adversary. While absolute air

superiority could be a visionary goal, air forces will have to tailor the requirements to what is achievable within the available force capacity. This in turn will define what could be dangerous or desperate, requiring adaptability of plans at the strategic level and flexibility in the employment of air assets. Both should be based on critical analysis of the prevailing situation and options available, always counterbalanced with the adversary plans, manoeuvres and operational capacity.

Sun Tzu's examples in the stanza of what should not be done can be very easily extrapolated to air power employment—choosing of the appropriate tactical routing for missions, avoiding direct combat engagement with a numerically larger or more capable force, ensuring that the centres of gravity are correctly identified and even then not attacking some of them because of the greater negative impact that such attacks could have, and only contesting control of the air to the degree required. Once again, the elements discussed build from the tactical to the strategic with most of the decisions being made at the strategic level of command.

Sun Tzu's advice that some instructions from the civilian authorities should be ignored is fraught with possible difficulties. It is relatively easy to ignore or subtly correct civilian instructions if they delve into operational level matters like target selection and mission planning, but instructions at the strategic level of command like rules of engagement and delineation of areas of operation will be more difficult to countermand. In fact there is a compelling argument for air forces not to take such a step because even the highest level operational commander may not be fully aware of the political and diplomatic issues involved. Here the decision to alter, ignore or ask for reconsideration of a given order will rest with the grand strategic commanders of the force who should, in democratic nations, be part of the highest body of war planning and execution. Although all military forces suffer from this issue to some degree, it is in the employment of air power that the detrimental effects of unwarranted and incorrect interference can be felt almost immediately. As a result, it is also the air commanders who have to be extremely cautious in advising and guiding the civilian leadership at the grand strategic level to ensure that air operations are aligned with the laid down strategic objectives of the campaign and war. The unpalatable fact remains, however, that even in democratic nations the civilian orders may have to be subordinated to military exigencies in times of total war.

Alliances can ameliorate the constraint of limited air power capabilities of small air forces

When faced with an adversary of comparable capability, the quest for control of the air must be contextually driven

In democratic nations, air commanders at the grand strategic level must be able to guide the civilian leadership adequately to ensure the efficient conduct of air campaigns

The commander who knows the advantages of the Nine Variations
Understands War.

The commander ignorant of these advantages,
Despite knowledge of the areas and positions,
Can never reap the advantage of that knowledge.

The Warrior
Ignorant of the theory of the Nine Variations,
Despite knowledge of the Five Advantages,
Cannot succeed in employing others.

In speculations, the clever leader
Always blends consideration of advantages and disadvantages.
By combining advantages,
The endeavour can be accomplished;
By tempering disadvantages,
Adversity can be overcome.

The commander who fully understands the advantages that accompany all possible adaptations of the campaign plan and is able to vary tactics accordingly will know how to employ the military force in war. A commander who is ignorant of the art of adaptation to cater for varying situations will not be able to use the positional and situational advantages of the force to its benefit. A warrior ignorant of the theory of adaptation will not be effective in employing a force even with knowledge of its advantages. Therefore, a clever commander's plans will consider both favourable and unfavourable factors. By considering favourable factors, plans are made feasible; by taking into account the unfavourable, possible challenges may be overcome.

This stanza is about the aptitude of commanders to adapt rapidly the strategy and concept of employment of the force to suit the variations in the operating circumstances. While the stanza concentrates on the commander's capabilities, it is also indicative of the factors that should be incorporated into strategic plans to ensure their success. Again the emphasis is on adaptability and awareness of both one's own and the adversary's strengths and weaknesses, and the commander's ability to translate the relativities into advantages for one's own forces. This requires a very high level of skill and acumen. It is of cardinal importance for a commander to be mentally attuned to change and prepared to adapt dynamically to take optimum advantage of opportunities that arise in order to conduct

a war successfully. Commanders, who lack this ability, even if they are knowledgeable regarding the status of the force, will find it difficult to succeed or even employ the force effectively. Essentially, this stanza explains the need for a commander to have knowledge, vision that comes from knowledge and the adaptability to ensure that circumstances do not overwhelm the force.

The Fox and the Monkey King

The monkey, having danced in an assembly of the animals and earned their approval, was elected by them to be king. The fox was jealous. So, seeing a piece of meat one day in a snare, he led the monkey to it, saying that he had found a treasure. But rather than take it for himself, he had kept guard over it, as its possession was surely the prerogative of royalty. The fox then urged him to take it.

The monkey approached it, taking no care, and was caught in the trap. When he accused the fox of luring him into a trap, the fox replied: 'Monkey, you want to reign over all the animals, but look what a fool you are!'

Moral: Those who throw themselves into an enterprise without sufficient thought not only fail, but even become the laughing stock.

Aesop
Fables, 6th century BC

Strategic victory is not dependent on the ability to vary operational tactics but on the adaptability of the force to respond rapidly to dynamic situations. Such adaptations have to emanate from the commander and the entire force should be able to respond to changing requirements as the campaign progresses. Creative planning and deliberate but adaptive strategy are essential to achieve consistent success. However, the strategy must have the built-in resilience to be able to deal with the inconsistencies of the battlespace and still triumph. This requires careful consideration of the strengths and weaknesses of both the forces, the advantages and disadvantages of contemplated actions and the identification of own and adversary centres of gravity. By leveraging the advantages, it is possible to ensure that a plan has a high assurance of success. Catering for the weaknesses and disadvantages of one's own force and position makes it possible to avert defeat even in very difficult situations. Extricating the force from a dangerous situation is dependent equally on the adversary's capabilities and one's own flexibility in exploiting identified opportunities. A commander must be imbued with versatility of thinking to be able to react rapidly to emerging situations and adapt the plan of action to turn unforeseen developments to one's own advantage.

This entire stanza deals with the implicit requirement for commanders at all levels to be professional masters of their domain. Only professional mastery at the appropriate level will be able to create the necessary adaptability in planning and flexibility in the execution of those plans. The fundamental tenet regarding the application of air power, ‘centralised control and decentralised execution’, derives directly from this stanza. In order to be effective in ‘centralised command’, the strategic commanders must be at the highest level of professional mastery and should be able to employ wisely the flexibility afforded by the air force’s capacity for decentralised execution. This reinforces the fact that the adaptability essential to success is better exercised from a higher level of command and the flexibility required to achieve victory at the operational level is more easily achieved in a decentralised manner.

We must not allow Centralized Control and Decentralized Execution to devolve to Centralized Control—Centralized Execution. That construct breeds excessive cautiousness at all levels, stifles initiative, and it is instructive to remember that it was the Soviet command model.

Major General David A. Deptula, 2001

Without professional mastery of the highest calibre, a commander, even if adept at the operational level, will not be able to employ the air force holistically to achieve victory. Similarly, it is the hallmark of a professional master of air power to consider the comparative merits and demerits of the opposing forces in an unbiased manner and only then devise the strategic plan for the campaign. Professional mastery at the grand strategic level also involves the monitoring of the progress of the campaign and the realignment of higher level operational goals with the laid down strategic objectives, if necessary, to achieve victory in an optimum manner. This also involves exercising professional judgement regarding the possibility of failure and initiating remedial action, even if it means extricating the force from an untenable position. The success or failure of each battle, campaign and war is a direct function of the professional mastery of the commanders of the force at all levels and only indirectly indicative of the calibre of the force as a whole.

The requirement for professional mastery of a high order is common to all Services and the development process of such mastery has its own peculiarities in each Service. For air power commanders, the requirement at the tactical level is not so much to be astute leaders of men, but to be skilled operators of machines which requires highly developed psycho-motor skills and careful nurturing of the man-machine interface. From this base, an air force commander has to develop a very different set of skills to transform into an operational level leader of a group of warriors, who operate individually and

yet are part of a collective whole. By the time an air commander reaches the strategic level of professional mastery, the breadth of his or her knowledge and vision will have to be sufficient to guide national security operations efficiently. Professional mastery of air power is perhaps the most complex and intangible quality that a commander could imbibe and is an ongoing, whole-of-life process. While air power was not even a dream when Sun Tzu wrote this treatise, the absolute need for air commanders to be professional masters could not have been better articulated than in this stanza.

In sum the leader has to achieve a balance between the essential need for professional competence in his own technical field and that broader understanding of human problems which can only be achieved from a wide and largely self-acquired education.

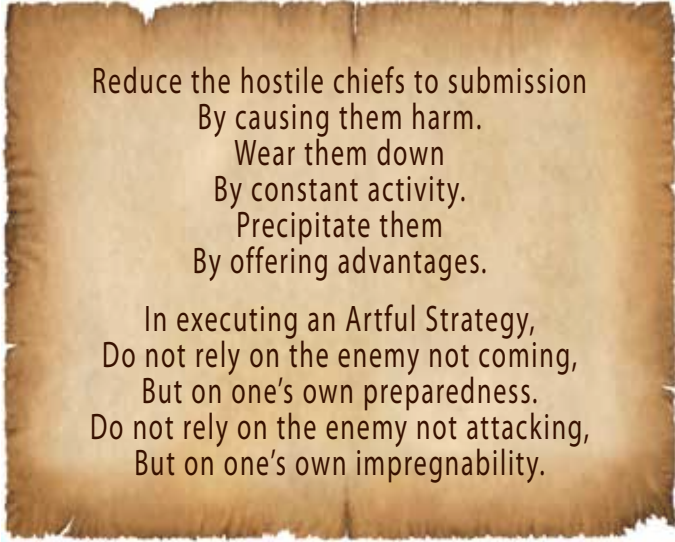
S. W. Roskill

Sun Tzu reinforces the fundamental tenet of the application of air power, 'centralised control and decentralised execution'

Creative planning and adaptable strategy are essential to achieve consistent success

Professional mastery of commanders at all levels is a foundational requirement for efficient and successful application of air power

Anticipating the Opponent



Reduce the hostile chiefs to submission
By causing them harm.
Wear them down
By constant activity.
Precipitate them
By offering advantages.

In executing an Artful Strategy,
Do not rely on the enemy not coming,
But on one's own preparedness.
Do not rely on the enemy not attacking,
But on one's own impregnability.

Plans and projects to intimidate, harm and make the enemy leaders submit are not confined to any one method. Wear enemies out by keeping them constantly occupied, and make them rush about by offering ostensible advantages. It is a doctrine of war not to assume the enemy will not come, but rather to rely on one's readiness to meet them; not to presume that they will not attack, but rather to make one's position invincible.

The adversary should be made to submit by adapting a number of methods to ensure that they are faced with one of the three basic situations, that is they should either face direct harm, or be worn down by constantly being engaged or lured into taking precipitate action by the deceptive offer of advantage. While it may not be always possible to influence or shape the security environment as much as needed, potential adversaries are not beyond one's own capability to influence. In fact, considering the volatility of the contemporary battlespace, challenging the adversary directly and indirectly so that they become reactive to one's own initiatives is a wise move. This will ensure that the initiative is always retained by one's own forces, thereby providing the opportunity to take the offensive and defeat the adversary. The underlying principle is once again that of adaptability. By adapting to the changing situations it is possible to find or even create opportunities that can then be exploited to one's own advantage.

A winning strategy is built on creating positions and conditions that can be effectively defended and from which offensive actions can be initiated without jeopardising one's own strong position. Such a strategy will depend first, on the force accepting the surety that, after a certain stage in the diplomatic manoeuvrings, the adversary will come to do battle—not debating whether they will or not—and being prepared to face the adversary at all times. The second requirement for the success of this strategy is for the forces to be in an unassailable and impregnable position to meet the attack that must surely come, once again not speculating whether an attack will materialise or not. The capability to defend is dependent on establishing well-developed positions and being aware of the fact that some natural positions are easier to defend than others that may have to be built up from scratch. The stanza explains that victory is achieved by a combination of both offensive and defensive strategies—the offensive being more indirect and opportunistic, and the defensive based more on preparedness and reliance on the invincibility of one's own position.

Readiness is everything. Resolution is indissolubly bound up with caution. If an individual is careful and keeps his wits about him, he need not become excited or alarmed. If he is watchful at all times, even before danger is present, he is armed when danger approaches and need not be afraid. The superior man is on his guard against what is not yet in sight and on the alert for what is not yet within hearing; therefore he dwells in the midst of difficulties as though they did not exist ... If reason triumphs, the passions withdraw of themselves.

The I Ching, China
8th century BC

There is certain subtlety in Sun Tzu's advice regarding the offensive actions that could be undertaken to make the adversary submit. The three examples given—of creating harm, constant activity and luring with lucrative bait—translate well into air power employment concepts, especially in pre-conflict situations. A conflict, irrespective of the suddenness of its eruption, will provide the astute commander with a certain, even though minimum amount of lead time to prepare the forces. During this phase, when conflict is certain, air power can be employed in a number of ways to harass the adversary and also gain advantage for oneself. The contribution of airborne surveillance has already been discussed in detail in previous chapters and, therefore, it is only necessary to mention here that air power will provide the commander with adequate situational awareness.

In air power terms, the three examples in the stanza would mean, one, to carry out discrete, but effective, precision attacks on adversary nodes of communications and other critical infrastructure centres; two, to facilitate clandestine special forces operations, to

disrupt adversary manoeuvre and concentration of force, through airborne insertion and extraction; and three, to initiate preliminary actions to ensure control of the air and to lure the adversary into taking precipitate action through probing raids. When carefully planned and executed in a concerted manner, these actions can have a cascading effect on the adversary and could lead to capitulation before actual conflict itself, or very early in the conflict phase.

Air power is inherently an offensive capability. Therefore, it is not surprising that the defensive part of the strategy being explained in the stanza, when extrapolated to air power employment, also has an element of offence in it. Accepting the fact that the adversary will come to battle, the optimum defensive posture of air power will include dedicated air defence missions flown to ensure that control of the air over friendly forces is not lost to adversary initiatives. Commencing both active and passive air defence measures will prepare the force to meet the adversary aggressively as and when they manoeuvre towards a conflict situation. Impregnability of one's own position is again a function of securing the air bases and other vital installations from sabotage, surface and air attacks, and is achieved through the deployment of surface air defence forces as needed and activation of airborne air defence measures. The option of carrying out pre-emptive counter air strikes to neutralise adversary air forces must also be explored in the strategic planning stage. Although this is being flagged here as an option, since it carries a high level of political ramifications, it is not discussed any further.

Space in which to manoeuvre in the air, unlike fighting on land or sea, is practically unlimited, and ... any number of airplanes operating defensively would seldom stop a determined enemy from getting through. Therefore, the airplane was, and is, essentially an instrument of attack, not defence.

Air Vice-Marshal J. E. 'Johnnie' Johnson, RAF

Another factor regarding preparedness of a force that must be highlighted is the fact that most air forces are always at some level of operational alert, even when the entire national security apparatus is said to be at 'peace'. This is because of the need to have adequate situational awareness at the grand strategic level of command in a nation at all times, which can only be provided by airborne assets. When security exigencies mandate moving to the basic level of alert for the surface forces, air forces normally move to a higher level, considering that they have already been at a basic operational tempo. The concurrency required to have this capability also gives air forces the strategic operational depth to assimilate the maxims that Sun Tzu has proclaimed in this stanza without unnecessary disruption of normal activities. Prepared through training, exercises and

ongoing peacetime operations, air forces have the capacity and flexibility to carry out all the actions that Sun Tzu advocates in this stanza.

Air power is ideally suited to carry out harassment activities against the adversary in the pre-conflict phase

Even defensive application of air power has an element of offence inherent in it

Air forces are always at an operational tempo and their capability for concurrency provides them with a virtual strategic depth

Leaders' Weaknesses

Five Weaknesses in Leaders can be exploited:

Recklessness can lead to destruction;
Cowardice can lead to capture;
Quick temper can be provoked;
Delicacy of honour can be shamed;
Over-solicitude for the men can lead to worry and trouble.

These Five Weaknesses are fatal flaws in a Leader
And catastrophic in the execution of a Strategy.

If a Force is defeated and a Leader destroyed,
It is certainly because of the Five Weaknesses.

They demand careful consideration.

There are five flaws in a commander's character that can be exploited by the adversary—recklessness, cowardice, hasty temper, delicacy of honour and extreme compassion. Reckless commanders can be destroyed, cowardly ones captured, hot-tempered commanders can be provoked, while ones who place

excessive emphasis on the preservation of honour can be shamed and solicitous generals can be made anxious. These are serious flaws in a commander and can lead to calamitous military operations. The cause for the defeat of an army and the slaying of the commander will always be found among these five fatal flaws. These shortcomings must be deeply pondered to avoid ruination of the army.

Although this chapter is mainly about adaptability, Sun Tzu finishes it by listing some of the major character flaws in a commander that could lead to disastrous consequences for the entire force. The flaws identified are as applicable in contemporary warfare as they were more than 2000 years ago when the treatise was compiled, indicating the timelessness of the command ethos and the role of the commander in conflict, irrespective of the changes that have taken place in the nature and conduct of war. This should not come as a surprise to any student of military strategy since all warfare is inherently a human endeavour. Sun Tzu has not merely listed the flaws, but in a different manner explained the specific response that must be created when any of these flaws are identified in the adversary commander. Implicitly inherent in the stanza is the exhortation for one's own commanders to steer clear of these pitfalls.

For what the leaders are, that, as a rule, will the men below them be.

Xenophon, 430–355 BC

All commanders have to be brave and courageous, but bravery without forethought is recklessness. A commander who knows only to fight to the death will not understand the nuances of a dynamic battlefield and is prone to leading his force into disastrous situations with no consideration of the long-term implications of such actions. A capable and astute adversary will be able to destroy such a reckless commander and the entire force. Cowardice is the other end of the spectrum in human behaviour and is equally disabling in a commander. Sun Tzu considered cowardice as the manifestation of the destructive extreme of intelligence, wherein the commander is intelligent and concerned with defeat to such an extent that the force can easily be captured. In essence, such commanders are virtual prisoners of their fears, a state that can be very easily turned against them.

Sun Tzu has already examined the need for commanders to control their emotions in the last chapter. The axiom here revisits the fact that the best decisions are made when the mind is in a relaxed state and that, when the mind is irritated and in an angry state, it is prone to making irrational and/or inferior decisions at best. Certain commanders

are easily angered—mainly the ones who are excessively disciplined and strict—and tend to take decisions without thinking through the long-term implications of such hasty decisions. It is relatively easy for the adversary to irritate these commanders into making irrational and prospectively disastrous decisions. Honour—in its traditional interpretation—is an old-fashioned concept in today’s world, but one that the military community still considers worth struggling to maintain. However, the concern with honour—that normally comes from an inflated sense of worth and ego—can become so overpowering that it can cloud judgements, obscuring the major objectives of the campaign. A heightened sense of honour could also be indicative of insecurity and will be too fragile to survive the rigours of the fast changing battlefield conditions. Commanders with inflated egos and suffering from a sense of insecurity will, even under normal circumstances, be ineffective and defeat-prone. Strategic success needs true humility.

A commander who is overly compassionate and filled with concern for the wellbeing of the troops will be afraid to risk casualties, thereby giving up long-term strategic gain to avert casualties in the short term. Sun Tzu does not mean to indicate that commanders should be careless about the welfare of the forces or that casualties should not concern them but only emphasises the danger of sacrificing any important military advantage for the immediate safety and comfort of the troops. This is at best a short-sighted policy because the same troops will suffer far more in the long term from a defeat crafted from the commander’s initial ‘compassionate’ decision. It is worth mentioning here that a commander’s attrition tolerance in conflict will be an echo of the national ethos regarding battle casualties.

The commander should practice [sic] kindness and severity, should appear friendly to the soldiers, speak to them on the march, visit them while they are cooking, ask them if they are well cared for, and alleviate their needs if they have any. Officers without experience in war should be treated kindly. Their good actions should be praised. Small requests should be granted and they should not be treated in an overbearing manner, but severity is maintained about everything regarding duty.

Fredrick the Great

Disabling the leadership is one of the keys to destroying the military forces of the adversary. However, in contemporary warfare the strategic leadership of the adversary is often beyond the physical reach of one’s own military forces and, therefore, the weaknesses that have been listed by Sun Tzu assume greater importance. They are character traits that can be exploited if carefully studied and analysed. The flaws and their implications are common to all commanders and, therefore, a separate analysis from an air power perspective is not considered necessary. Grand strategic command and the

professional mastery required to be competent at that level has already been discussed. Other than the unique requirements regarding the development of professional mastery in air power, the rest of the characteristics for command are the same in all arms of the Services. Awareness of the five flaws is mandatory for commanders to avoid them. This understanding comes with adequate study of the strengths and weaknesses that make for successful command and has to be done deliberately during times of comparative peace and tranquillity.

Sun Tzu identified five major weaknesses in commanders that could lead to defeat, which are valid even in contemporary times

A commander having any of these traits is susceptible to covert manipulation by the adversary

Professional mastery is only complete with a clear understanding of these weaknesses

Conclusion

Sun Tzu believed that well-formulated military strategy must be based on an appropriate and flexible plan and be capable of dealing with the dynamism of emerging security issues. The core competency of a force, that is to fight and win wars, is dependent on its demonstrated ability to plan and execute a winning strategy that incorporates methodologies to ensure that abrupt changes in the security environment do not create insurmountable obstacles for the force. From an air power perspective, such a strategy will be based on the fundamental tenet of air power employment, 'centralised control and decentralised execution'.

In developing a strategy that supports this central tenet, air commanders will have to ensure that planning is creative and sufficient flexibility is built into it to ensure that its execution is smooth. In other words, the strategy has to be adaptable at all levels for it to have the necessary assurance of success. Air strategies must also take into account the peacetime operational tempo under which all air forces operate. This places extra burden on the force to carry out adequate sustenance while continuing to operate at the required tempo, with a no let up. Air forces have to be capable of operating in concurrent campaigns to increase the tempo rapidly. This concurrency provides air forces with strategic depth that might not otherwise have been available.

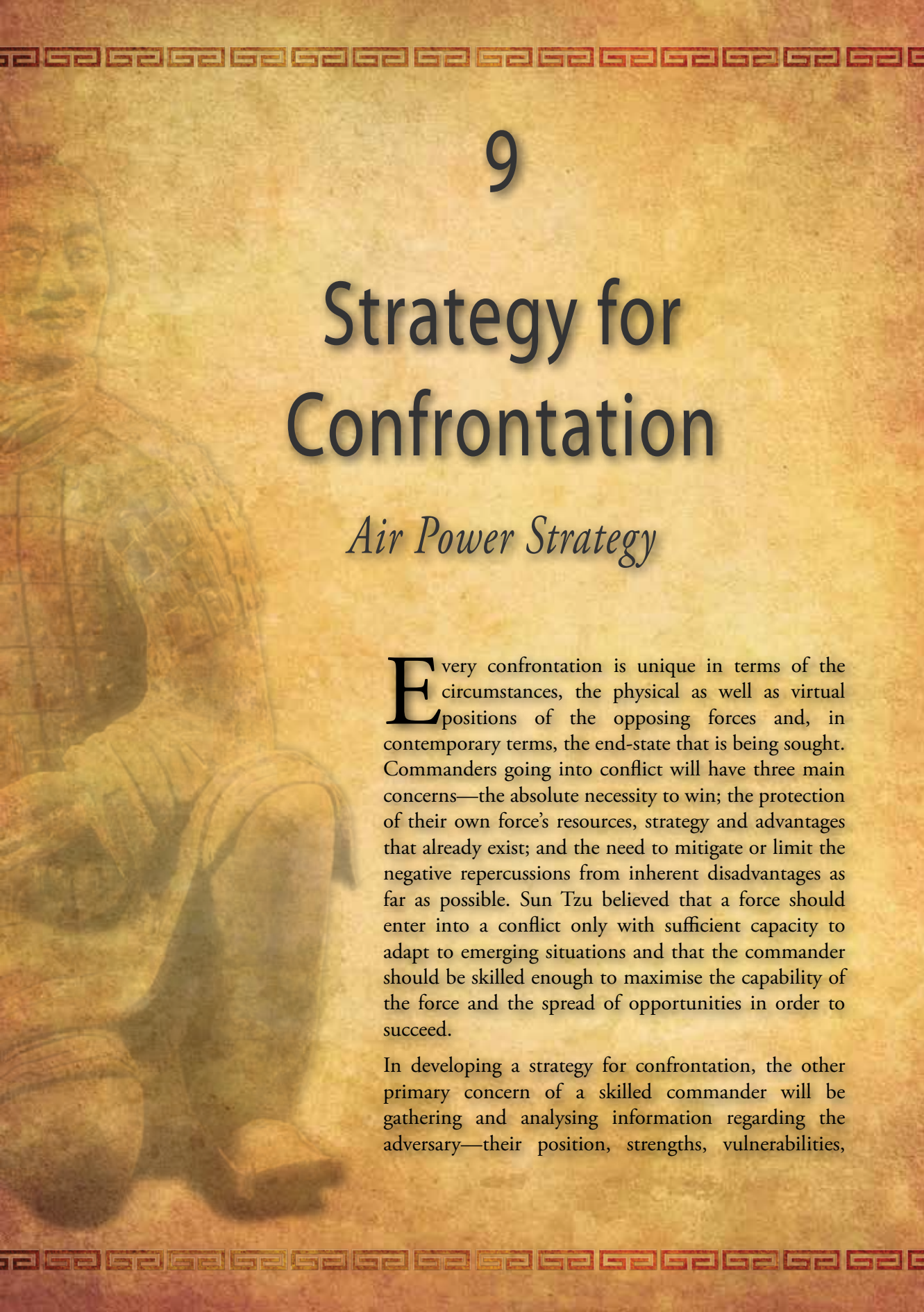
A majority of world air forces are small in size and limited in their capabilities. By forming alliances, these air forces can ameliorate the constraint of limited capability. However, the issues of interoperability and rules of engagement when operating together will need to be addressed comprehensively if the alliance is to provide air power capabilities beyond that resident in a single air force.

Sun Tzu emphasised the need for adaptability in this chapter, but ended the chapter by connecting the success of a force to the competency of its commander. He identified five major weaknesses in a commander that could lead to the force being defeated. In a departure from the norm in the treatise, he declared that there may arise the probability of the military commander disobeying the orders of the sovereign or, in contemporary terms, the civilian leadership. However, the concept is not so much disobeying the civilian leaders, but the capability of the military commanders at the grand strategic level to be able to guide the civilian leadership correctly during times of war.

In essence, Sun Tzu established the requirement for commanders to be professional masters in their field and the absolute need for them to be aware of the weaknesses that he has listed as being debilitating in a commander. In the conduct of an air campaign, the commander's professional mastery is the underpinning strength of the force and cannot be supplanted by anything else. A creative plan, implemented through an adaptable strategy that is flexibly executed by commanders with very high professional mastery is the surest way to ensure the success of an air campaign.

Strategy for Confrontation

Air Power Strategy



Every confrontation is unique in terms of the circumstances, the physical as well as virtual positions of the opposing forces and, in contemporary terms, the end-state that is being sought. Commanders going into conflict will have three main concerns—the absolute necessity to win; the protection of their own force’s resources, strategy and advantages that already exist; and the need to mitigate or limit the negative repercussions from inherent disadvantages as far as possible. Sun Tzu believed that a force should enter into a conflict only with sufficient capacity to adapt to emerging situations and that the commander should be skilled enough to maximise the capability of the force and the spread of opportunities in order to succeed.

In developing a strategy for confrontation, the other primary concern of a skilled commander will be gathering and analysing information regarding the adversary—their position, strengths, vulnerabilities,

strategies and concepts of operation—in order to adapt one's own plans to counter them. Strategic information regarding the adversary will provide a commander an insight into the optimum way to employ one's own forces to assure victory in the most cost-effective manner. In the application of force, obtaining and always retaining the initiative from the start of the conflict, thereby ensuring that the adversary is always reacting to one's actions, is of primary importance.

Conflict manifests both in the physical and cognitive domains. Even though Sun Tzu dealt with both the physical and psychological aspects of warfare in his treatise, in its later interpretations, the psychological aspects were not given sufficient emphasis. Simultaneously, intellectual debate regarding the conduct of war also gradually became dominated by the physical aspect that determined military victory and defeat. However, the wheel has come full circle and contemporary strategists lay equal emphasis on both the physical and psychological aspects of warfare. Even though Sun Tzu also dealt in the realm of psychology in his treatise, study of the cognitive domain in conflict can perhaps be considered a modern concept in certain ways. This is not to suggest that diplomacy, economic pressures and information warfare were completely ignored in the interim period between Sun Tzu's time and now. They were not, and some of the prime examples of diplomatic confrontations and information manipulation to gain victory come from deep in history. Sun Tzu definitely considered the cognitive domain in articulating the development and implementation of strategy and some of the axioms in the treatise deal only with the psychological aspects of warfare. However, in recent years the psychological aspects of warfare—actions that affect the adversary's cognitive domain—have come into prominence and their nuances are being explored.

In this somewhat long chapter, Sun Tzu discusses four types of environments and their impact on warfare that can be superimposed on contemporary conflict situations in the physical, social and cognitive domains. The cognitive domain by itself has two parts, those of behaviour patterns and belief systems. A commander will have to learn to deal with the three domains effectively if victory is to be assured. Dealing with the uncertainty of the cognitive domain is perhaps the most complex and, therefore, requires close attention from the commander.

The chapter takes a detailed look—at times at a very tactical level—at how forces can adapt to emerging situations as they move into unfamiliar areas. Sun Tzu has written about specific situations that an army could face in the field but they can be interpreted in an analogous manner to suit modern conflict situations because of the symbiotic relationship between the natural geographic world and the three domains in which confrontation takes place. The chapter has three distinct parts, although they are not delineated as such in the original treatise; the first about adapting to emerging situations, the second about understanding the adversary's intent through monitoring their actions in all the domains, and the third about optimising the capabilities of the force through efficient leadership and command processes. Sun Tzu believed that skilled leadership was

a foundational requirement in a victorious force and, therefore, constantly returned to the theme of the qualities required in a sophisticated commander.

In contemporary air power terms, the chapter is about ‘air campaigning’, which is the art of developing and executing a strategy for the optimum employment of air power capabilities, which is a multilevel function, straddling the strategic, operational and tactical.¹

Air power is, above all, a psychological weapon—and only short-sighted soldiers, too battle-minded, underrate the importance of psychological factors in war.

B. H. Liddell Hart

¹ A conscious attempt has been made to keep the contemporary explanations of the stanzas in this chapter at the strategic level, which has necessitated the omission of some examples from the original treatise being independently explained, although they form part of the verses. However, their underlying concepts have been included and care taken to ensure that no part of the original treatise has been arbitrarily omitted.

Positioning the Forces

When positioning the Force and evaluating the opponent:

Cross mountains by following the valleys.

Find security in the higher positions,

Fight downhill, not up.

These are positions in Mountain warfare.

Cross waterways and keep them at a distance.

If the opponent crosses a river to approach—

Never meet them midstream; let half the opponents cross before a strike.

In battle, do not confront near the river.

Occupy high ground; do not meet in flowing waters.

These are positions in River warfare.

Cross marshes rapidly; never lingering.

If the Force is engaged in the midst of a marsh—

Hold to the grassy banks, backed against the trees.

These are positions in the marshes.

Level ground is easy to occupy.

Put heights behind, and to the right

So that danger is in front, and the rear secure.

These are positions on level ground.

These are the Four useful branches of military knowledge.

Observation of the Four

Enabled the Yellow Emperor to excel among the Emperors.

When an army takes up a position and confronts the enemy, it has to observe and judge the type of warfare and the kind of operations that will have to be fought. Generally there are four main types—mountain warfare, river warfare, operations in marshes and swamps, and on the plains. Pass quickly over the mountains, camp in high places, fight downhill and do not ascend to attack. After crossing water obstacles, move some distance away and position on high ground, induce the enemy to cross over and do not move into the water to meet the enemy. Move over swamps at the fastest speed without lingering and stay close to grassy banks and trees. In level ground occupy a position that facilitates one's own action; with heights securing the rear, the field of battle will be to

the front. Study of the four positions gives advantage to the force. (The Yellow Emperor, Huang Ti, was a legendary ruler of China, believed to have reigned from 2698 to 2598 BC)

The part regarding the positioning of the forces is at the operational level of the art of warfare and focuses on how to understand different situations that a commander may face while manoeuvring the force immediately prior to conflict. While analysing the optimum manoeuvres in relation to terrain—divided according to the possible areas of operation in his time—Sun Tzu constantly reminds the strategist to consider the adversary and their manoeuvres at all times. The four terrains discussed—mountain, river or water, marshes and level ground—should be considered metaphorically in contemporary conflict. It is felt that, even during Sun Tzu's time, the stanza was not meant to be studied purely as the best practice to overcome natural obstacles at the physical level, but was meant to be pondered metaphorically at a higher plane of strategy, at least by sophisticated commanders at the highest level.

In any conflict there will be disparity between the high-end and the low-end capabilities and the 'sizes' of the forces in contention. This will also be the case between friendly and allied forces operating within a coalition. As well as being a guide to the physical action, mountains metaphorically indicate the high end of the spectrum of conflict and high-end manoeuvres across the entire spectrum. Irrespective of the resident capability of one's own forces, it will be necessary to operate at the high-end level under certain circumstances. Sun Tzu's advice in this case is to opt for the path of least resistance and to leverage the capabilities of the force after positioning them optimally. This means not fighting an uphill battle against the odds—physically, technologically or diplomatically—but if necessary resorting to asymmetry to neutralise the capability and technological edge that may be present with the adversary at the high end of the spectrum of conflict.

Sun Tzu often uses water as a metaphor symbolising change and the absolute necessity for a force to be able to adapt to emerging circumstances. In a dichotomous manner he uses water to also indicate some of the situations that cannot be changed and, therefore, should not be opposed. One's own force must be positioned in such a way that unchangeable dangers are avoided and do not impact on one's strategy or plans. The concept being put forward is that one must avoid all situations or circumstances that could change rapidly unless contingency planning has already catered for the possible shift. Change can be used as a friendly weapon and optimally leveraged to bring the adversary into a situation of rapid and unpredictable change. Under these circumstances the adversary will be forced to devote resources to cater for or counter the changes and thereby become vulnerable to well-planned strategic attacks. A commander should be wary of the corollary that one's own forces become vulnerable while they are in the midst of change.

Marshes are metaphors for positions that will bog down the force, making progress uncertain and represent the dynamic, complex and shifting ground of contemporary operations. The issue here is of uncertainty that brings in a level of instability to operations. Under these circumstances the commander should focus on moving the force away from these situations as rapidly as possible. The difficulty lies in recognising early enough the fact that the force is getting bogged down and initiating remedial measures. A skilled commander will not only be able to recognise the onset of such a situation but will also identify the best positions within the uncertainty from where the force will be able to respond to challenges while still endeavouring to stabilise the operations rapidly. Circumstances where forces could get bogged down should be converted rapidly to temporary positions and the force manoeuvred away. The essence of these manoeuvres is to maintain the continuity of operations. Static positions are the most difficult to defend and no victory is possible without manoeuvre.

The Americans, with minimum losses, attacked and seized a relatively weak area, constructed airfields, and then proceeded to cut the supply lines to troops in that area. The Japanese Army perfected direct assault, after German fashion, but the Americans flowed into our weaker points and submerged us, just as water seeks the weakest entry to sink a ship. We respected this type of strategy for its brilliance because it gained the most while losing the least.

Lieutenant Colonel Matsuchi Iino
Japanese Eighth Area Army

The level ground represents a position where the resident capabilities of the forces are equal with disparity only in skill levels of the personnel. This brings out a number of variables where success is dependent on one's own initiatives and manoeuvres. In this situation, the emphasis shifts to the employment of the force rather than to the prevailing circumstances, although the relative strengths of the forces should not be completely ignored. The commander must focus on the challenges that the adversary's manoeuvres pose to one's own forces and the capacity to counter them while retaining the advantage. Therefore, it is necessary to have an initial position that is flexible and amenable to rapid change; one that permits the observation and analysis of every action of the adversary. Of the four positions that have been discussed, this requires the maximum versatility—a direct product of professional mastery of the art of command—from the commander to manoeuvre the forces to victory. These four factors cover the entire spectrum of conflict at the strategic and operational levels. Sun Tzu exhorts commanders to study them carefully as the basis for excellence in the application of operational art.

Air power capabilities have a very broad spread in terms of their technological sophistication and the effects that they can create when employed efficiently. In order

to cover this full spread, the ideal situation for any force would be to possess high-end capabilities in the required quantities, which could be ramped down to suit the circumstances in a low-tech environment. However, air power capabilities are cost-intensive and, therefore, it is normally not possible for most air forces to achieve this. Nevertheless, all air forces of calibre must have a minimum quantum of high-end capabilities resident in them to be effective as strategic security instruments of the nation. Air forces must, therefore, be prepared to adapt their capabilities to suit the context of operations both towards the low end as well as to the high end of the spectrum, at a rate that is commensurate with the dynamics of the situation. High-end capabilities and the flexibility to move up or down in the capability spectrum are two of the most prized attributes of an air force. This flexibility in itself can be employed in an asymmetric manner against the adversary, if manipulated in a sophisticated manner by knowledgeable commanders.

Change is a constant in warfare. Skilled commanders will not only be able to align their forces to cater for possible change, but also be able to recognise the circumstances where change can be opposed. Further, they should be able to identify when change cannot be halted and, therefore, must be allowed to run its course before reacting to it. Air power is perhaps the most flexible military capability and also the most adept at perceiving and adapting to dynamic situations. This inherent advantage can be further enhanced by imaginative concepts of operations and employment of air power in a contextual manner. Catering to change—currently happening and possible future ones—is a critical function of command, and the fact that air power is more amenable to change should not in any way be allowed to dilute this cardinal requirement of command.

Slowing the progress of a force because of uncertainty leading to instability is a common feature, especially in contemporary operations against ill-defined adversaries. Air power can ameliorate the situation in a number of ways. At the operational level, air mobility can overcome physical obstructions of the terrain as well as adversary surface action in a particular area. At the metaphorical level, high-end air power has the capacity to position the force to fight ‘downhill’ by removing uncertainty through adequate and responsive reconnaissance and time sensitive targeting of adversary centres of gravity. Air mobility also provides the joint force with the capability to avoid areas of the adversary’s force concentration and to target relatively weakly defended areas. A single air strike—itself tactical in nature—on a critical centre of gravity can create cascading strategic effects. Uncertainty can be converted to certainty by seizing the initiative before the adversary can clearly perceive the manoeuvres that are being conducted. With effective air power, a force can avoid being ‘bogged down’ in its operations.

The flexibility and adaptability of air power makes it well suited to position itself and the joint force correctly, especially in difficult terrain, at the early stages of a conflict and then be able to retain the initiative reactively by countering all manoeuvres of the adversary. By monitoring and pre-empting the adversaries’ attempts to position themselves advantageously, air power can continue to control pre-conflict deployments. It can also

exercise control of the direction and tempo of conflict after actual combat operations have commenced. The last of the four situations discussed by Sun Tzu is the most volatile with the possibility of a large number of variations and dynamic manoeuvre. Under these circumstances the importance of air power's extremely versatile power projection capability—when employed in keeping with its basic tenets—cannot be overemphasised. The inherent agility of air power allows a force to adhere to Sun Tzu's security axioms, even in a dynamic battlespace.

Taken together, these cover the entire spectrum of contemporary conflict operations and must be carefully studied to develop the appropriate strategy for the employment of air power—as well as all military forces—and the planning and execution of the air campaign. Sun Tzu's stanza could perhaps be interpreted in slightly different ways, but it is felt that the essence of the maxims has been explained correctly and interpolated metaphorically into the application of contemporary air power within the broader military capability development and employment.

*Air power capabilities are technologically sophisticated and
have a very broad spread*

*Air forces must be able to adapt their resident capabilities to suit
the context of air power application*

*Air power can control the tempo of a campaign by employing
its high-end capabilities*

The Force prefers high grounds to low;
Values brightness and disparages darkness.
When security is cultivated and solid ground occupied,
The Force will thrive and triumph is certain.

So on mound, hill or embankment,
Occupy the light, with high ground to right and behind.
Use the help that ground affords, to bring advantage to the Strategy.

When rains upstream have flooded the waterway,
The Force wishing to cross waits for it to subside.

When faced with isolating gorges
Or natural hollows, cages, snares, traps and crevices:
Quit with all speed and do not approach.
Keep away from these, direct the opponent near them.
Keep them in front so they are at the opponent's back.

The force should stay in high places and avoid the low, likewise it should stay in the light and avoid the dark. Take care of physical health, ensure the security of the encampment and stay close to natural resources—the force will be healthy and victory will be certain. All advantages that the ground affords must be carefully grasped—keep to the sunny side of foothills and embankments, if the river is in spate, wait for it to settle before crossing and keep away from hazardous obstacles like precipitous cliffs and torrents. When own forces are distanced from these, the opponent will be near them; and when own forces face them, the opponent will be backed by them.

This stanza covers two main points regarding positioning the force in order to triumph—gaining advantage from the operating area and dealing with extremely hazardous obstacles. In the original Chinese version Sun Tzu introduces the concept of *yin* and *yang* (roughly translated to male and female principles) in this passage. The first part of the stanza deals with positioning the force to optimise the advantage that can be derived from the operating area through ensuring high visibility and providing adequate opportunities for forward movement. The second part is about overcoming obstacles when manoeuvring the force. Sun Tzu advises to keep one's own plans as secret and closely guarded as possible at all times. However, here a slight nuance has been added, in that he advocates openness and visibility to ensure freedom of manoeuvre while not revealing one's plans so that the force is positioned to ensure victory.

Where the strategist is empowered to seek a military decision, his responsibility is to seek it under the most advantageous circumstances in order to produce the most profitable result. Hence his true aim is not so much to seek battle as to seek a strategic situation so advantageous that if it does not of itself produce the decision, its continuation by battle is sure to achieve this.

B. H. Liddell Hart

Metaphorically, ‘brightness’ or high visibility means adequate and contextual situational awareness as opposed to ‘darkness’ or ignorance of adversary manoeuvre that leads to uncertainty. By modern management practices, high visibility of probable obstacles is also one of the methods that can be used to solve it. ‘Brightness’ can also be interpreted to mean keeping the internal functioning of the force efficient and open—avoiding secrecy that leads to internal divisions—thereby ensuring physical and moral unification of the force. ‘Brightness’ is also knowing oneself and knowing the enemy, an axiom that Sun Tzu has mentioned in the treatise before. Essentially, the advice is to position the force in such a way as to ensure that its vitality is nourished by being on ‘solid’ ground.

The second aspect of positioning, with high ground behind the force, provides the opportunity to use the strategic advantages of being on high ground. High ground is also about the commander ensuring that the rank and file of the force clearly understand the strategic aim of the campaign and thereby establishing the moral ground for the use of force. Once the soldiers understand what they are fighting for, they will not be susceptible to cynicism and the thirst for victory will be sharpened. Sun Tzu also alludes to high ground making it difficult for the adversary to initiate any severe action against one’s own forces. In combination, the metaphorical sense derived by these two factors—situational awareness and strong moral ground—about positioning the force is a very powerful one. It denotes a healthy and cohesive force with the moral authority to pursue its strategic goals by the application of force—lethal, nonlethal, kinetic or non-kinetic.

The second part of the stanza deals with obstacles, first water and then dangerous terrain.² Water represents change and Sun Tzu metaphorically differentiates between rivers and rain—as water on the ground and water from the heavens—one that creates an ever-changing operating arena and the other as a natural phenomena beyond the

² The part of this stanza regarding the physical obstacles is at the tactical level of warfare but, like the rest of the chapter, Sun Tzu uses physical terms metaphorically to allude to higher levels of warfare. However, even at the metaphorical level, most of the axioms are common to the military forces as such with few very delicate nuances becoming apparent when they are applied to air power employment. Explanations of these nuances might, at a cursory analysis, seem to be laboured but they have to be indicated and explained for a holistic understanding of the application of air power and its impact on the conduct of the air campaign in a contemporary context.

control of the commander. Sun Tzu also indicates a subtle connection between the two. Rains can create a flood in the river, which means that while rain by itself cannot be avoided, their after-effects can be managed if adequate and timely action is initiated. In combination, the essence is that change, by itself, is unavoidable in conflict situations, but the impact of change can be managed by a flexible force without it having created any lasting impact. The commander needs to analyse and decide the time and place to initiate action and, therefore, patience becomes an absolutely essential virtue in these circumstances. Hence, Sun Tzu's clear instruction to wait for the water to subside before attempting to cross—wait to discern and understand the dynamism of the battlespace before initiating action.

To undertake the military operations, the army must prefer stillness to movement. It reveals no shape when still but exposes its shape in movement. When a rash movement leads to exposure of the shape of the army, it will fall victim to the enemy. Therefore the wise man treasures stillness. By keeping still he can dispel temerity and cope with the temerarious enemy. When the enemy exposes a vulnerable shape, seize the chance to subdue it. Indeed, the army should not move without careful thought, much less take reckless action.

Sun Haichen (Tr), 1991

The Wiles of War: 36 Military Strategies from Ancient China

The second part of the stanza regarding overcoming obstacles also has a sub-element to it, where Sun Tzu points out that, while avoiding the obstacles, a clever commander will also try to direct—induce—the adversary to be trapped within the same obstacles. While manoeuvring the force it is possible to be led into a cul-de-sac situation wherein there are very limited options available to the commander to extricate the force from a weak position. While this is the physical aspect of manoeuvring a force, metaphorically this alludes to the need to retain as many options as possible at the strategic level of planning so that the flexibility of the force can be employed to the fullest. This will also facilitate denying the adversary cognitive flexibility to initiate any independent counter manoeuvres. The planning process must analyse strategic goals taking into account the possible risks involved in achieving them, which will permit the force to retain the necessary adaptability. The underlying assumption here is that every position that the force takes up is only the beginning of future manoeuvres. The crux of the matter is the art of military leadership and the perspicacity of the commander to have a broad vision of national goals and grand strategy so that superior operational skills can be exercised appropriately in manoeuvring the forces optimally.

The stanza is equally applicable to all military forces, in terms of the commander's leadership capabilities. However, air power has the capacity to inflict colossal damage

to life and property by the application of lethal force, through the employment of small elements of the force, even without sighting the adversary. Such application needs very clear thinking regarding the moral correctness of the actions being contemplated. This is not to suggest that the application of lethal force by either of the other forces does not need moral authority, but only indicates that, when air power is used to create catastrophic damage to the adversary, the moral and ethical dilemma in decision-making could become extremely vexing for the commander. Air power transcends the physical realm of Sun Tzu's treatise and has the ability to operate over long distances, create very high strategic damage and function at unparalleled tempo. However, this also creates a new environment of rapid change and enhanced awareness that may generate moral dilemmas, which in turn could degenerate into pitfalls—traps—in the conduct of a campaign. Decisions regarding the employment of air power at the strategic level, therefore, would have to be made at an unusually high level of the nation's leadership, even while the military forces are prosecuting a successful campaign facilitated by a well-developed air power strategy.

Our evidence goes to show that it is not the way force is applied but its effectiveness that is feared and to that extent resented. Once force is actually applied, the tribesman probably dislike[s] land and air operations equally, except that in the latter his prized inaccessibility is taken from him and his opportunities for hitting back are far more limited.

Rufus Isaacs, Lord Reading, 1925

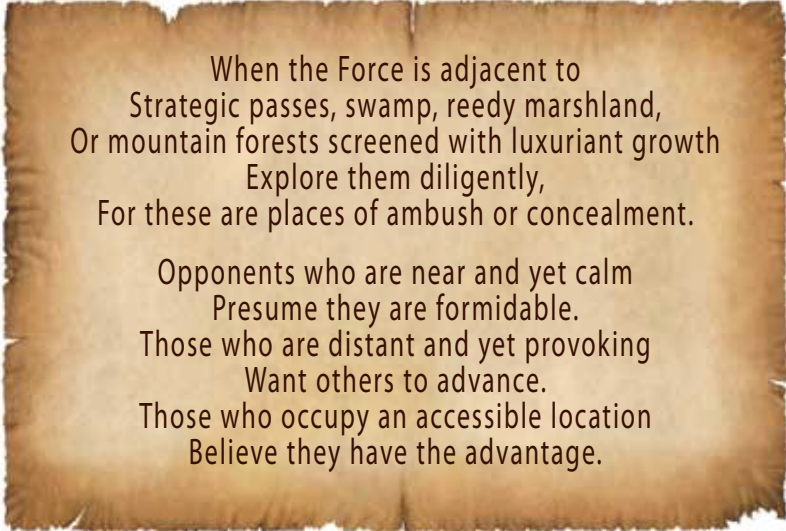
While overcoming physical obstacles is not an issue for air power, the question of planning to ensure adequate flexibility to meet the demands to understand the emerging situation and manoeuvre for advantage needs to be considered. A joint approach to the overall campaign planning will be the best way to produce a viable strategic plan for the employment of military forces. In such an approach, the air campaign plan will be an integral part of the larger task force plan which will provide air commanders a sufficiently adaptable strategic plan to employ their assets in the best possible manner to achieve the joint objective. The air campaign plan must have built-in adaptability to cater for possible changes that may become necessary to keep the broader military strategic plan aligned with the national grand strategy. The proper execution of the strategic plan will ensure centralised control and decentralised execution of the air campaign while retaining adequate flexibility within the force. Flexibility at the strategic and operational level of command and warfare is critical to the success of air power employment.

Even small elements of air power can inflict catastrophic damage at great distances and, therefore, should be controlled at the strategic level of decision-making

Air campaign plans must retain flexibility to be adapted during the course of the joint campaign

Air commanders must be aware of the moral and ethical dimensions of decision-making in conflict

Reading the Signs – Strategy



When the Force is adjacent to
Strategic passes, swamp, reedy marshland,
Or mountain forests screened with luxuriant growth
Explore them diligently,
For these are places of ambush or concealment.

Opponents who are near and yet calm
Presume they are formidable.
Those who are distant and yet provoking
Want others to advance.
Those who occupy an accessible location
Believe they have the advantage.

When the force is near terrain that is impenetrable, the area must be carefully examined because the probability of an ambush or concealment of adversary forces is high in such places. The enemy should be studied by judging their reaction to encounters, by their irregular actions, by the disruption their activities cause and by their attempts at interaction. Reaction to encounters can be threefold—when the enemy is close but remains quiet, they are confident in the natural strength of their position; when they are distant but challenging to battle, they are luring one to advance and when they are on easy ground they think they are in an advantageous position.

In this stanza the use of the word 'believe' rather than 'has' the advantage is important to understand. In previous stanzas Sun Tzu has listed the factors that make a force believe that they are secure. The use of this word, than the more definitive 'has', is indicative of the opportunity to manipulate or deceive the adversary's perception of these factors to create a false sense of security. Sun Tzu's treatise is replete with such nuances and subtle suggestions.

The first part of the stanza warns that when a force is being manoeuvred, especially near inscrutable areas, there is an ever-present possibility of hidden dangers. The second part alludes to the basic premise that deception is prevalent in all aspects of war and the adversary will always present illusions to confuse one's own strategy, planning and execution of the campaign. It is with the second part of this stanza that Sun Tzu begins the explanation of identifying and understanding the signs that can be derived from the actions of the adversary regarding their probable intent and manoeuvres for positioning the force advantageously.

Appearance and intention inevitably ensnare people when artfully used, even if people sense that there is an ulterior intention behind the overt appearance. When you set up ploys and the opponents fall for them, then you win by letting them act on your ruse. As for those who do not fall for a ploy, when you see they won't fall for the open trap, you have another set. Then even if opponents haven't fallen for your original ploy, in effect they actually have.

Yagyu Munenori, 1571–1646
Family Book on the Art of War

Inscrutable areas, like swamps and marshes, are the antithesis of clear visibility or 'brightness'. When one's own forces are highly 'visible' it means that there is trouble-free communication leading to cohesiveness within all elements of the force. It also means that there is clear awareness of the environment and, therefore, adequate understanding of the strategic objectives, rules of engagement and mission requirements at all levels of command. When the force has to move into an area where it is difficult to identify the adversary and their intentions, then it must look for hidden dangers. Sun Tzu delineates this situation from the one where he categorically advises to keep the force out. He indicates that this situation may still produce advantages if the hidden dangers are identified. Gathering information is a primary element in all aspects of warfare and this situation is no exception. Uncertain situations can be resolved and converted to advantage if adequate information can be obtained to identify hidden dangers, which can then be avoided.

The second part of the stanza is about analysing the adversary's actions, relating it to how they view one's own position and establishing their intent before deciding on the course of action to be adopted. In this context, there is an element of concealment of actual intent—passive action—rather than deception that requires active operations to mislead the adversary. If the adversary appears to be confident, even while one's own forces are visibly advancing on them, it is possible that their appreciation of the situation is completely different to one's own and obviously favours them. The possibility of one's own appreciation being incorrect, for any number of reasons should not be ruled out. Under these circumstances, it may be prudent to halt and carry out further analysis before proceeding with the advance.

Similarly, if the adversary challenges one's forces to attack, it is almost certain to be a bait to lure one's forces into a disadvantageous position. The temptation to attack, however easy victory might look at that time, must be resisted. An adversary who moves from a strong position to an exposed one obviously has a hidden advantage and is also luring one's forces into combat. In both the instances mentioned there is a passive element of concealment of actual purpose. The basic rule of employing military forces is to move away from the adversary's strengths and to seek out their weak spots, centres of gravity, for concentrated attack. A skilled commander will be able to identify the concealed pitfalls that the adversary crafts and ensure that the force retains a strong position for its optimum employment.

In the employment of air power, hidden dangers and concealment of intent together form a serious impediment to success if not identified in time and carefully ameliorated. This will be directly manifest at the operational level, wherein hidden dangers—undetected air defences, surprise attacks, wrong assessment of adversary force levels etc.—can lead to unacceptable losses to own forces leading to a dilution of strategic effectiveness. Not being able to ascertain adversary intent will impinge on the veracity of one's own strategic plans, which will percolate to wasteful effort at the operational level. Considering that air power assets are cost-intensive and limited in their availability, there is very limited scope for unintended waste of effort. Therefore, by pure passive concealment of their actual intent, the adversary will be able to reduce the quantum of air power that can be brought to bear on them. Under these circumstances the adversary will find it easier to defend their vital areas.

Understanding adversary's intent is an involved process. The examples that Sun Tzu provides to elaborate the concept of concealment of intent are as valid in contemporary conflict as they were during his time. For instance, even while one's own offensive air operations are being mounted, if the adversary continues to be fairly nonchalant about it, it must be suspected that one's own analysis of the adversary strength and positioning has been at fault. Similarly, if the adversary is openly luring one to attack, it must be understood that an advantage that one is unable to fathom rests with them. The relatively high speed of operations in an air campaign makes it all the more important to evaluate these factors before operations are launched.

The air strategy must be conceived with sufficient built-in flexibility to be able to absorb the surprises that a wily adversary could produce, especially when their intent is not fully and reliably known. The capability of airborne surveillance assets to create a detailed picture of the battlespace has already been discussed in detail in earlier chapters. Yet, the secrecy associated with adversary's intent and the pervasive use of deception mean that knowledge and situational awareness must always be considered incomplete. It is in this context that the skill of the commander will provide a winning edge, to a force that has inherent capability, and is flexible and agile enough to capitalise on that skill. A skilled air commander will ensure that his situational awareness is bolstered by experience and intuition to be as complete as possible. Such a commander will have the insight to constantly update and finetune the air power strategy to cater for the continuous changes taking place at the conflict area while keeping the air campaign fully aligned to achieve the strategic objectives of the joint campaign.

War is composed of nothing but accidents, and though holding to general principles, a general should never lose sight of everything to enable him to profit from these accidents; that is the mark of genius.

Napoleon Bonaparte, 1769–1821

*Air power's strategic effectiveness can become diluted
by unintended attrition*

Understanding adversary intent is critical to the success of air campaigns

*The air strategy must incorporate sufficient flexibility to be able
to absorb surprise in the battlespace*

If trees move, they are approaching;
They screen behind tall grasses to perplex;
Birds rising in flight—a sign of ambush;
And beasts startled—of surprise attack.

If dust clouds are,
Tall and swirling—indicates chariots approaching;
Low and spreading—infantry.
Dust in scattered strands—collection of fuel;
And drifting in small pockets—encamping corps.

There are four ways to judge the enemy's actions—when the woods move, it indicates an enemy approach or clandestine advance; when grass screens are massed together, it indicates smokescreens or enigmatic actions; when birds rise in flight, it indicates an enemy ambush or hidden foes and when wild animals are startled, it indicates a sudden attack or surprise flanking movements. There are four distinct ways to judge enemy actions to cause disruption by the dust they raise—dust rising high and sharp indicates vehicles approaching; if the dust is low and wide, it indicates foot soldiers; if scattered and streaked, it indicates wood being cut for firewood and when it is sparse, it indicates camp being set up for soldiers.

This stanza continues the study of adversary action to fathom their intentions in terms of contemplated actions through the physical observation of the operating theatre. The signs regarding the understanding of dust clouds that Sun Tzu explains can perhaps be superimposed on today's tactical level ground operations and retain a certain amount of validity. In a more conceptual manner, at the strategic level, the first part is about observing the larger operating environment and identifying and analysing the ongoing changes to judge the possible actions of the adversary. All changes in the environment must be presumed to have been created by the adversary, especially when it is observed in the immediate pre-conflict timeframe. If the environment is such that it provides only limited opportunity to gather information, it is more than likely that the adversary will exploit the situation and therefore one must anticipate an attack, even if there are no direct indications of an impending adversary manoeuvre. However, such suspicion must be confirmed by obtaining actual facts and a discerning commander will not initiate any action on scanty information. There is an implicit warning here that the absence of factual information does not mean that the adversary is not manoeuvring to surprise one's own forces. Through the entire treatise Sun Tzu repeatedly emphasises the need

to act only on confirmed and complete information, while at the same time warning against complacency in the face of obscure information.

Everything which the enemy least expects will succeed the best. If he relies for security on a chain of mountains that he believes impracticable, and you pass these mountains by roads unknown to him, he is confused to start with, and if you press him he will not have time to recover from his consternation. In the same way, if he places himself behind a river to defend the crossing and you find some ford above or below on which to cross unknown to him, this surprise will derange and confuse him ...

Fredrick the Great, 1712–86

Sun Tzu refers to observing the behaviour of birds and beasts, which is similar to observing the behaviour of the general population and provides an indication about the adversary's activities and intentions. Friendly peoples' silences as well as their changing allegiances are clear indications of the adversary working covertly against one's interests and forces. Such a situation must be carefully monitored because it indicates an almost certain upcoming attack—both direct and indirect. Some adversaries are more subtle than others and the only indications that such adversaries provide are to be gleaned from astute observation of the changes in the environment; some caused by the adversary themselves, and some extraneous.

The second part, analysing the formation of dust, while having a direct relationship to surface force manoeuvre, also provides an understanding of the pattern being laid by the adversary through the analysis of information as it is being gathered. The pattern as well as the manner in which it is being created will provide an intelligent commander with a great deal of information regarding the position and intent of the adversary. The key to developing successful strategy is to know how to understand, analyse and manipulate information. In conflict situations it is impossible to manoeuvre forces without leaving some trace, 'dust', however minute and trivial. Sun Tzu points out that even tiny bits of seemingly meaningless information must be gathered and that, even if they do not provide any direct knowledge regarding the adversary, they form part of the puzzle and will be useful in understanding the larger pattern. The source of the information, in terms of the level from which it emanates, its veracity, repetitiveness and regularity, and breadth and strategic depth will determine its usefulness in understanding the broader adversary manoeuvre pattern and intent.

At the grand strategic level, the observation of the actions of the adversary combined with judging the pattern being formed produces an understanding of the political situation in the conflict. Greater emphasis by the civilian leadership in bringing the

nation together in a bipartisan manner would indicate a preparatory stance towards possible conflict. In some cases internal political instability could also bring about aggressive and offensive external action from the incumbent government to contain the domestic volatility. Although directly linked to the operational level of warfare, Sun Tzu's maxims metaphorically straddle the strategic level. They provide a clear understanding of the necessity as well as the broad principles in recognising and analysing the visible and virtual signs that are continuously being created by the adversary.

From an air power perspective, the stanza is about situational awareness and the need for the extant air power strategy to be able to contain the manoeuvres of the adversary. Situational awareness is more than seeing the signs; it is interpreting the signs, patterns, and normalcy created by the adversary in order to know the environment that, in turn, enables the development of superior strategies. In a subtle indirect manner Sun Tzu permits the force commander to be reactive rather than be constantly on the lookout to identify the opportunity and seize the initiative. However, this is only a nuance and the underlying principle of leading the adversary to carry out actions that one wants them to, is still in evidence. In this stanza Sun Tzu provides advice with the expectation of a certain amount of maturity in the commanders, since there is a requirement to analyse very discreet information and form a larger picture from limited and disparate inputs.

While intelligence gathering and information management is not only an air power function, airborne assets play a critical role in both. It can be said that without adequate air power capabilities—both in intelligence gathering and the protection that such activities need—situational awareness can never be as complete or up-to-date as necessary for commanders to make vitally important decisions. However, it must be mentioned that this ability of air power to gather enormous quantities of information is only truly useful if it is accompanied by an equally robust analytical capacity. Monitoring the environment is a continuous activity and does not start or stop with the probability or otherwise of conflict. All air forces of calibre carry out surveillance activities to improve the situational awareness and through that the readiness state of the military force on a continuous basis irrespective of the status of security of the nation.

Situational awareness refers to, 'a decision-maker's awareness of the cultural, physical, geographical, meteorological and operational features of the operating environment upon which they make the decisions necessary to achieve their intent.'

As all decisions will invariably be based on the decision-maker's knowledge and understanding of the prevailing situation, situational awareness can be seen to underpin all decisions made by commanders at all levels of a

cont.

force. Situational awareness is not a binary concept; it cannot be said that a commander either has or does not have situational awareness. Rather, it should be seen as a continuum along which the situational awareness varies depending on the availability and the quality of information upon which it is based. A commander's situational awareness can never be considered absolute or perfect, a widely understood tenet of military thought generally ascribed to the 'fog of war'. Indeed, increasingly adaptive adversaries and the complexity of the modern operating environment make attempts at attaining perfect situational awareness an ultimately futile endeavour. It follows that in the operating environments of the future, successful commanders will continue to be those who are able to make effective decisions in spite of incomplete situational awareness.

Travis Hallen

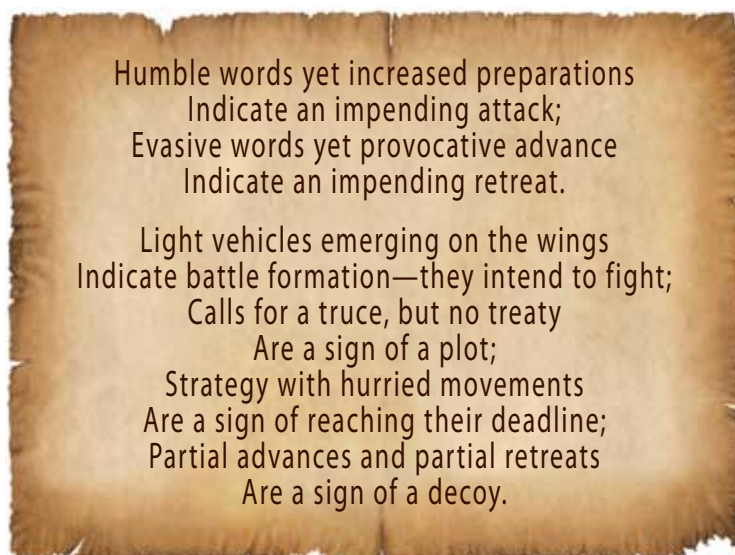
*Airborne Intelligence, Surveillance and Reconnaissance
for the Future Australian Defence Force, 2009*

In air power terms observation of adversary activity at the strategic and operational levels of conflict is not restricted to a particular set of assets and capabilities but spread through the force. Further, more than any other military capability, air assets cover the largest area in the conflict space in terms of their operational employment and therefore the information that they bring back is crucial to form a coherent and sufficiently broad pattern of adversary manoeuvre. Since the information is likely to be brought in piecemeal, confirmation of its correctness can often come from disparate air sources. In creating a picture and pattern of adversary activity and determining their further intent, air power provides critical inputs, without which it may be almost impossible for a commander to function effectively. Air power can be equated to the thread that connects information gathered through different sources to develop a strategic picture of sufficient clarity that a competent commander will be able to translate into decisive action for his force.

***Situational awareness involves interpreting even the most minute
information that is gathered to form a strategic picture
of the adversary's intent***

***Air power is critical to intelligence gathering that is fundamental to
situational awareness***

***Air power covers the largest area in a conflict space and, therefore,
gathers information that is crucial in monitoring adversary
manoeuvre and strategic intent***



Inferences from enemy attempts to interact are of two types—inference from their speech and behaviour, and inference from their activities. Humble words and increased preparations are signs that the enemy is about to advance; when their language is threatening and they pretentiously advance, they are planning to retreat. When light chariots first emerge on the flanks, it is a sign that the enemy is preparing for battle; when a ceasefire is requested without providing an agreement, it indicates a plot; when enemy troops march speedily, it is a sign that the adversary is nearing the culmination or a decisive point in their strategy and a partial advance or retreat are indicative of a decoy action.

The adversary's intentions can be judged through monitoring their communications, behaviour and activities when close to joining battle. Here again Sun Tzu elaborates on the concept of deception that the adversary will try to practise and, as an unwritten corollary, one must also be able to employ. While it is comparatively easy to say one thing while surreptitiously planning and executing manoeuvres that are contrary, it is more difficult to hide the true intentions of actions. In terms of understanding the adversary's intentions, it must also be kept in mind that the cost attached to speaking something or displaying emotion in communications is far less than the cost of actually taking action to mislead the opponent's thinking. Therefore, an adversary will be far more prone to attempt deception through verbal communications and emotions rather than through actual action. For example, being humble in communications could be an attempt to create the illusion of being non-threatening that could bring in a false sense of security while they use the time so gained to complete preparations prior to an intended attack. On the other hand, the adversary could resort to a public display of provocative communications accompanied by feinting attacks before an actual retreat.

In wartime, truth is so precious that she should always be attended by a bodyguard of lies.

Winston Churchill 1874–1965

When the adversary is changing the battle formation with emphasis on speed, it should be considered as preliminary actions prior to the force being committed to battle. These changes could manifest in terms of manoeuvres of elite troops, support arms or intensified reconnaissance and probing raids. Changes in adversary formation and how their resources are positioned can provide indications of their intentions, if the commander is astute enough to make the correct inferences from the information being provided. Changes in formation by themselves are not indicative of an impending attack; however, if the changes are oriented towards increasing the force's speed in manoeuvre, then it could be considered as indicative of an intention to attack. Normally defensive positions are more likely to be built solidly and require longer time to change from or into, whereas speed and coordination are critical to the success of an attack. This is what Sun Tzu means by concluding that observing the positioning of the chariots at the flanks indicates that the adversary is planning to fight.

Observing the activities of the adversary provides information regarding their actual intentions as opposed to what they want others to believe. If the adversary wants to negotiate but does not have any tangible agreement proposals to discuss, it must be inferred that they are planning a plot and are only bargaining for time to implement it. It may also be that they are attempting to gather further information regarding the disposition of one's own forces to make a decision regarding their subsequent course of action. When the opposition starts to manoeuvre with haste, it could indicate any or all of three factors—that reinforcements are arriving and a rendezvous is imminent, that the strategy has reached a phase beyond the build-up phase and is moving into the action phase, that their strategy is not proving successful and the manoeuvres are desperate actions to ward off conclusive defeat.

Similarly, when advance or retreat is being feigned to give an appearance of confusion, then the adversary is trying to lure one into taking precipitate action. In this stanza Sun Tzu is indicating the pitfalls that could be encountered in dealing with ambiguous situations and the importance of interpreting the signs correctly. The instances given are those regarding possible deception at the operational level, but once again they are meant to be extrapolated to the strategic level of war and command. Like the previous two stanzas in this subsection of 'strategy', this stanza is also about the capability of a commander to make the correct inferences from the observation of the communications, behaviour and activities of the opponent. The inferences can be at the operational level from observation of manoeuvre signals and actions, and at the strategic level wherein

the rushed implementation of a strategy could indicate either a surge in capability or the high command losing composure.

The most superficial way of trying to influence others through talk that has nothing real behind it. The influence produced by such mere tongue wagging must necessarily remain insignificant.

The I Ching,
China, 8th century BC

The stanza is fairly simple to interpolate with the challenges of air power employment at the operational and strategic level of air campaigning. Air power can be used to carry out provocative attacks of strategic significance without endangering surface forces, thereby keeping the possibility of casualties to the minimum. In the case of the joint force being forced to retreat, air power can be employed to thwart aggressive pursuit by the adversary and ensure the safety of one's own troops. Offensive action by air power elements can be critical for the success of a planned retreat. When the adversary is observed to be forward deploying their air power assets while the surface forces are comparatively static, it could indicate that the adversary is contemplating a strategic withdrawal. When adversary combat air power is being allowed to range free and starts to contest control of the air aggressively, it must be surmised that an attack is imminent.

Reading the signs and inferring adversary intentions correctly is absolutely critical for the optimum employment of air power. Being drawn into air action—especially the ones where all aspects of the campaign have not been carefully considered, and therefore should have been avoided—will drain resources, at times even faster than they can be replenished. Precipitate action could have adverse strategic impact and long-term consequences. For example, such action could lead to the loss of moral authority of the nation in international forums. On the other hand, delay in initiating action could lead to the adversary seizing the initiative and dominating the conflict. For example, the speed and lethality of adversary air power could cause such damage to one's own nation that it may become impossible to recover and win the war. It is critical for the success of the air strategy that commanders must be able to have sufficient situational awareness to ensure that actions are initiated at the most opportune time.

In contemporary joint campaigns, the positioning and employment of adversary's air power, when carefully monitored, will provide a clear indication of the strategy that they are contemplating. This is because of the extremely high responsiveness of air power and the fact that its combat elements can be employed with the minimum logistic footprint. There is also the added advantage that the offensive use of air power in strategic actions will limit the political fallout that normally accompanies the employment of

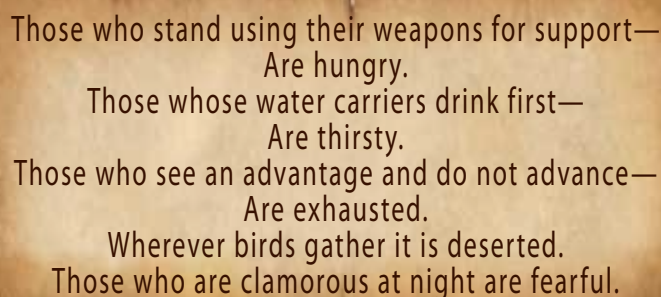
military forces by avoiding physical incursion into adversary territory. Observing the positioning—deployment—of the adversary's air forces and combining the information with other disparate indications, such as diplomatic overtures, will provide a fairly accurate idea regarding their intent, both strategic and operational.

Air power can carry out offensive attacks of strategic significance

Precipitate air action undertaken without considering all aspects of the campaign can create adverse and long-term strategic effects

The deployment of the air force is an important indicator of a nation's strategic intent

Reading the Signs—Vulnerability



Those who stand using their weapons for support—
Are hungry.
Those whose water carriers drink first—
Are thirsty.
Those who see an advantage and do not advance—
Are exhausted.
Wherever birds gather it is deserted.
Those who are clamorous at night are fearful.

Distress is brought about by starvation, dehydration and fatigue. Underfed troops lose their energy and brace themselves on their weapons, which is an indication of starvation in the force. When those sent to draw water, first drink themselves, the army is thirsty. The condition of the entire army can be understood from the behaviour of a single soldier. If the enemy does not take advantage of a weakness that is apparent, then they are exhausted and too worn out to fight. Camp conditions indicate withdrawal or terror. When birds gather above the enemy's encampment, it indicates clandestine evacuation. Fear makes men restless. They call to each other at night to keep up their courage.

The first part of the ‘judging from observations’ was with regard to inferring the strategy from the observations and this part is about understanding the vulnerability of the adversary by observing the behaviour of the force. The opponent’s vulnerability can be judged by observing their physical state, camp conditions and command structure. This stanza explains the factors that display distress within the force and the camp conditions that indicate withdrawal and fear. Sun Tzu relies on metaphors to indicate the lack of resources within a force. By explaining that troops who use their weapons for support are starving and that the water carriers drinking first is indicative of thirst within the force, he is putting forward the concept of judging the adversary’s resource level by monitoring the actions of the troops in combat or in its immediate aftermath. When the resources available to a force fall below the minimum required, it is human nature that individual insecurity will come to the fore, which will invariably lead to the breakdown of cohesion in a force. The water carriers’ drinking the water first is a metaphorical allusion to this situation wherein selfish individual interests overtake organisational priorities. In this situation, the force is not being supported, but the supporting elements themselves use up the already scarce resources. Under these circumstances, the force is extremely vulnerable. When the adversary has clearly identified a weakness and an opportunity to exploit it but does not do so, thereby failing to seize the advantage, it is a clear indication of their troops being ‘exhausted’ and limited in the quantum of effort that they can produce. In a military force this is indicative of lack of adequate resources and capability requiring the re-prioritisation of strategic objectives that need to be achieved.

An adversary abandoning a position that had been occupied will indicate a shift in either the strategy being employed or a decision to withdraw. In the contemporary conflict scenario, when the battlespace is not clearly demarcated and combat takes place within the population, the indication of irregular adversaries withdrawing will be difficult to notice immediately unless the general population is constantly and carefully monitored. Depending on the manner in which the irregular fighters have been interacting with the larger population and the support they enjoy, the signs indicating their change in position will vary. However, in all cases the sign of opportunistic people filling the vacuum and looking for short-term gains will be noticeable to the astute observer. The skilled commander will not be tempted to occupy the position that has been vacated by the adversary, but will be concerned with where they are headed in order to understand clearly their future intent. Distress is also indicated by the state of fear of the adversary combatants and can be judged by the manner in which they utilise sympathetic allies and mediators to ease their situation. Crying out at night is metaphorically indicative of seeking sympathy from outside sources so that the dire situation they are in can be somewhat eased.

Those governments that were able to create effective intelligence organisations and use them efficiently were normally successful in their counterinsurgency efforts. This was particularly true of the British campaign in Malaya from 1948 to 1960 and the Philippine operations against the Huks from 1946 to 1954. In both instances, accurate and timely intelligence was a crucial factor in defeating the insurgents. On the other hand, inadequate intelligence was a significant weakness in the French campaign against the Viet Minh in Indochina.

Dr Charles A. Russell and Major Robert E. Hildner, 1973

Air power is a resource-intensive military capability and, therefore, in contemporary situations will be the first to show signs of resource exhaustion. Analysis of the readiness and the overall operational activity of their air force will provide a fairly accurate estimation of the adversary's resource levels. Resource limitations that will translate to a decrease in the adversary's warfighting capabilities, which if correctly identified in time, can make strategic planning much simpler. Further, it will also provide the opportunity to optimise the utilisation of one's own forces by re-assigning them as required, thereby becoming a virtual force multiplier. This is particularly important in the employment of air power because of the scarcity of air assets and their multi-tasking capabilities. If the demise or weakness of the adversary air power can be anticipated, own forces can be employed elsewhere, thereby optimising their employment. Air commanders must be professionally competent to identify correctly indications that the opposition is starting to suffer from resource limitations and then judge and exploit the window of opportunity in two ways—one, to deliver a mortal blow and two, to utilise surplus assets in other theatres as required.

*Air power will be the first to exhibit signs of resource limitations in
a nation during times of war*

*A skilled commander will be able to exploit the diminishing air power
capabilities of the adversary*

A resource-starved air force can be quickly defeated

Confusion among the troops
Indicates a commander without significance;
Moving banners and flags
Are a sign of disorder;
Those whose officers are easily angered are tired.
When horses are fed grain and the troops on meat;
When cooking pots are not hung up;
When troops do not return to their shelter;
The opponent is desperate.
Troops whispering and murmuring in closed groups
Indicate disaffection;
Repeated rewards indicate desperation;
Frequent penalties indicate distress.
Initially ferocious and later fearful of own troops,
The commander is unrefined and incompetent.
Those who desire cessation
Send conciliatory messages.
Protracted, fierce, confrontation
Without engaging and without retreating,
Great vigil is essential.

If the commander lacks authority, the army will be disorderly and if the banners used to unify the army are unsteady, it will lack discipline. Enraged officers indicate mental weariness and psychological weakness. When the army does not cook, gives horses grain and the soldiers kill cattle for food, it indicates a desperate foe, in the throes of a crisis, who will fight to the death. Troops whispering together in small groups point to dissatisfaction amongst the rank and file, leading to disobedience. Continuous granting of awards indicates leadership dilemma and frequent punishments are signs of demoralisation. When officers are tyrannical towards the men and subsequently fearful of mutiny, it shows incompetence and lack of intelligence. When the adversary offers a humble compromise without being subdued in battle, it demonstrates their anxiousness for an armistice because their strength is exhausted. However, if they angrily confront but delay actual engagement without retreating, they are preparing a surprise attack. The situation demands great vigilance and circumspection.

This stanza deals with inferring the adversary's vulnerabilities through observations of their command structure. Detailed study of the command structure of an adversary through the prism of leadership, discipline, psychology and morale will indicate the state of the adversary forces. By feigning confusion an adversary can lure one into taking precipitate action, which is contrary to Sun Tzu's advice. In this stanza he explains the different indications that will confirm that there is actual and not feigned disarray within the adversary forces that can be exploited. Each of these signs by itself can be falsely demonstrated, but to do so simultaneously and repeat the pattern formed by a combination of these will be extremely difficult. Therefore, the skilled commander will observe the various signs and their combinations and only then make the necessary judgement regarding the future course of action. Sun Tzu elaborates on the signs that indicate lack of leadership, loss of discipline, psychological weakness of the leaders and the troops, when the adversary is facing a crisis of resources, rebelliousness within the force, loss of morale and imprudent leadership.

In contemporary warfare, the signs that indicate vulnerabilities explained in this stanza are easily visible to a careful observer and analyst. When such forces lose confidence in their leadership, their actions will be undisciplined and erratic, not aligning with the broader aims of the group. Further, as the mutual trust within the force reduces, they will factionalise, become increasingly angry and prone to irrational acts. As the availability of resources becomes constrained, the individual members will tend to take the maximum out of the organisation before leaving it. Sun Tzu uses the metaphor of killing cattle for food to indicate an adversary drawing desperately from the nation's long-term resources for short-term gain in conflict, cattle being a measure of wealth in olden times. These are sure signs of the collapse of morale and opportunities to be exploited to defeat such an adversary will be readily apparent to a skilled commander.

Communications within a force are its lifeblood and a failure of communications will be accompanied almost immediately by a loss of morale. Information dissemination has to take place vertically through the chain of command as well as laterally across the force for effectiveness. Breakdown of communications will slow this process and ultimately fracture the cohesion of the force leading to the loss of unity of command. Moving banners—incoherent communications—are indicative of a disunited force. Effective communications are the only way to ensure that the entire force shares a single strategic campaign objective, further refined to the levels at which they operate.

The Wolves and the Dogs at War

One day, enmity broke out between the dogs and the wolves. The dogs elected a Greek to be their general. But he was in no hurry to engage in battle, despite the violent intimidation of the wolves. 'Understand,' he said to them, 'why I deliberately put off engagement. It is because one must always take counsel before acting. The wolves, on the other hand, are all of the same race, all of the same colour. But our soldiers have very varied habits, and each one is proud of his own country. Even their colours are not uniform: some are black, some russet, and others white or ash-grey. How can I lead into battle those who are not in harmony and who are all dissimilar?'

Moral: In all armies it is unity of will and purpose which assures victory over the enemy.

Aesop
Fables, 6th century BC

While the concept of rewards and punishments is an effective tool to motivate the force, Sun Tzu warns against its excessive use to achieve short-term goals. It may lead to an immediate spurt in morale and the fighting ability of a force, but will create substantially larger problems of morale in the longer term and exacerbate weaknesses within the force. Any commander who resorts to such a strategy can be immediately considered as incompetent, a characteristic that can then be exploited to one's own benefit. However, in all fighting forces there is a need for a just system of incentives and penalties that is administered judiciously by a commander of accepted qualities to ensure that the troops do the right thing without having to be goaded to do so. This sort of self discipline by itself becomes a war-winning trait within the force.

If the adversary approaches with requests for cessation of hostilities, it can mean one of two things—one, that the request is genuine because they are exhausted and want to rest and recuperate or, two, that the conciliatory move is part of a larger deception plan, aimed at gaining time to put their altered or refined strategy into practice. An astute commander should be able to distinguish the two based on other indications and observations. It must be remembered that the adversary has entered the conflict with a belief of their capacity to win and also the will to win. Therefore, sudden changes in attitude and behaviour must be considered suspicious. In most cases the adversary will be trying to buy time to improve their position and even a withdrawal should be considered a delaying or deceptive move. Deception—physical and virtual—is central to warfare and deceptive reconciliation, treaties and alliances, must always be considered as attempts by the adversary to delay the actual onset of conflict to enable them to regroup or bring up more reinforcements.

The last sign that Sun Tzu puts forward is the most important and indicates the vulnerabilities stemming from the command structure of the adversary and deals with ambiguous situations wherein the intent of the adversary is not clearly discernible by their actions. When the adversary appears confrontational without actually engaging in battle and yet does not yield or withdraw from the battlespace, it is necessary to exercise great care in formulating one's own course of action. The two possibilities in this situation are that the adversary is setting a trap and trying to lure one to attack or they are awaiting the arrival of reinforcements. Reconciling the apparent dichotomy in the adversary behaviour requires more information, which can only be obtained by engaging the adversary and being close to them. Essentially, the advice here is to be patient and to analyse the situation in great detail while being vigilant and observant of ongoing adversary actions.

Command structure and leadership have common foundations across the three arms of the military. Observation of the leadership, discipline, communications and morale of the force will provide a picture of the overall efficiency of the force in all three cases. However, at the operational level, air power has the capability to influence and control the process and speed of information dissemination, which will directly affect the cohesiveness of the force. In contemporary conflict scenarios, wherein the military almost always operates as a joint task force, this is very significant. The second situation when air power assumes added importance is when either the adversary's or one's own intent is to feign attacks and offensive actions in order to gain time for the larger force to build up to the desired level before engaging the enemy.

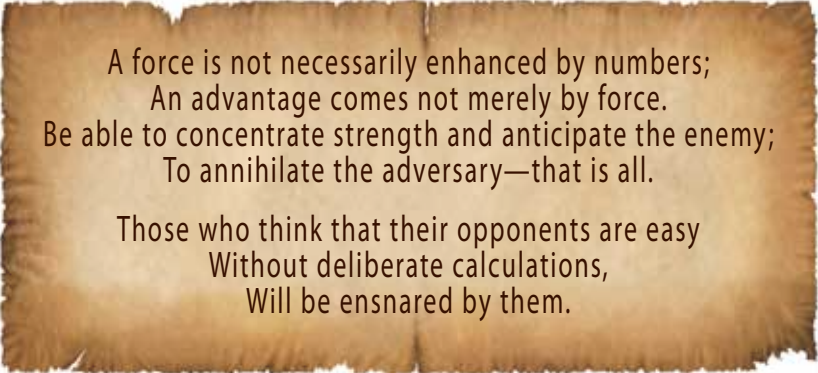
Air power, if used intelligently, is an extremely flexible and versatile capability that can enhance the deceptive actions being undertaken. Strategic level deceptive measures can perhaps only be attempted with sufficient air power capability, both to deny the adversary their surveillance capability and to enhance the feigned demonstration of one's own deployment activities. The extremely wide perspective resident in air power compounds the adversary's difficulties in attempting to deceive. Imaginative use of air power, especially its strike capabilities, can create the illusion that there is an impending offensive being contemplated. Although this might involve the employment of high-value air assets in perpetuating ruses, it will be easier than deploying large numbers of troops to support such a move. It also has the added advantage that, in the case of air power, such actions can be ceased very rapidly, avoiding long-drawn operations or physical presence of the force that in itself would defeat the purpose of the ruse.³

³ There are also a number of tactical level actions that can be undertaken by air power assets in carrying out physical and virtual deception at the operational level, that are not being discussed here because they are beyond the scope of this interpretation and discussion, although the principles of Sun Tzu apply to them as well.

Air power can control information dissemination, which directly affects the cohesion of the force

Air power can feign strategic offensive action in a relatively cost-effective manner

When employed imaginatively, air power can create the illusion of an impending attack



A force is not necessarily enhanced by numbers;
An advantage comes not merely by force.
Be able to concentrate strength and anticipate the enemy;
To annihilate the adversary—that is all.

Those who think that their opponents are easy
Without deliberate calculations,
Will be ensnared by them.

In war, numbers alone confer no advantage. It only means that a force larger than the adversary's does not automatically confer victory and that, as far as possible, direct attack on a numerically superior adversary should be avoided. It is more important to be able to concentrate all available forces while constantly watching the adversary to defeat them comprehensively. Underestimating even a weak enemy and not analysing the prevailing situation carefully can lead to defeat.

You know, I am sure, that not numbers or strength brings victory in war; but whichever army goes into battle stronger in soul, their enemies generally cannot withstand them.

Xenophon, 430–355 BC

The outcome of a battle, campaign, conflict or war is not merely dependent on numerical superiority, although one has to be cognisant of the comparative numerical situation with respect to the adversary to avoid being overwhelmed by superior numbers. The use of the term 'numbers' is also inclusive of resources other than people and, therefore, Sun Tzu's advice is to be aware of one's own resource constraints. From a strategic perspective it is as important to know the limitations of one's own forces as it is to know their capabilities and how they can be optimally employed. In this stanza Sun Tzu provides a process that can be adopted to counter even a resource-rich adversary. He advises identification of their weaknesses by constantly observing them and to concentrate forces to confront the adversary's weakness with sufficient forces to defeat them. As a corollary, when the adversary is constrained, one must be able to utilise one's own superior position to deny them the chance to concentrate their forces and to annihilate them for good. Thus, victory is assured and the adversary denied opportunities to regroup. In the context of resources and their influence on the outcome of the conflict, the fact that vastly superior resources are not necessarily foolproof assurances of victory over even infinitely smaller adversaries must be borne in mind.

The Vietnam War

The United States was (and continues to be) the richest nation in the world and their armed forces were considered the best in the world in terms of capability and technological sophistication. However, the armed forces of North Vietnam and associated irregular forces, considered to be extremely resource constrained, were able to defeat the US forces and achieve their strategic goal of unifying Vietnam. This is a classic example of the 'soul' of an inferior army overcoming numerical superiority and extraordinarily high capabilities of the adversary. The will to fight and prevail is primarily dependent on the morale of the force and its leadership.

Even after having gained the upper hand, the possibility of going forward further should not be taken for granted. Sun Tzu has earlier cautioned against taking the momentum of victory for granted and here he again advises that one must be cautious about the plans being made to consolidate victory. Even defeated adversaries must be carefully observed and possible ways in which they could return to the conflict analysed. It will be an imprudent commander who underestimates even a smaller adversary since, through illusion and deception, they too can become effective forces with the capacity to undermine the capability of a much larger and overconfident force not observant of all the nuances of war.

In the conduct of an air campaign, at the operational level, numerical superiority—in its simple meaning of 'numbers'—is only one of the contributory factors to victory,

especially when the operational capabilities of the contending forces are almost equal. At the strategic level, numerical superiority can create a war-winning edge for an air force, provided the numbers and capabilities of the force are developed in keeping with contemporary technological developments, sophisticated employment concepts and modern training standards. However, there is absolutely no assurance that such numerical superiority will bring victory in conflict. A numerically inferior force, when employed with innovation and élan, can devastate vastly superior forces and pave the way for the nation's victory in war. One of the defining characteristics of air power is its capability to concentrate overwhelming force at the time and place desired by the commander. In a joint campaign the effect of this transcends domain boundaries and can comprehensively change the direction and tempo of the conflict to one's own advantage. Therefore, the capabilities of even a numerically inferior adversary air force, that has already been contained, should also be carefully monitored at all times to avoid being surprised by their actions.

Pre-emptive Strike – Israeli Air Force 1967

From the beginning of 1967, and even prior to it, Egyptian and other Arab national armies had been massing near the Israeli border and threatening to annihilate the nascent state. On 22 May 1967, Egypt closed the Straits of Tiran to all Israeli shipping and all ships bound for Eilat, Israel's only port. The blockade cut off Israel's only supply route and stopped the flow of oil to the nation. This was the *casus belli* for Israel to go to war.

Israel was outnumbered and decided to pre-empt the expected Arab attack, since to wait for an Arab invasion would have been catastrophic. On 5 June 1967 the entire Israeli Air Force, with the exception of just 12 fighters assigned to defend Israeli air space, took off at dawn and attacked the Egyptian Air Force while they were being refuelled and armed after the first missions of the day. In less than two hours the Israeli Air Force had destroyed more than 300 Egyptian aircraft. A second wave a few hours later dealt similar devastating blows to the Jordanian and Syrian Air Forces. The surprise achieved was unparalleled and the Arab air forces were never able to recover from the debilitating blow delivered on the first day of the war.

The Israeli Air Force demonstrated that by audacious and imaginative employment a small force can rapidly defeat a numerically superior adversary.

In contemporary conflict, overall victory hinges to a great deal on gaining and maintaining adequate control of the air irrespective of the size of the air forces involved. Air power's ability to concentrate forces rapidly should be used to achieve numerical parity if necessary. When faced with a numerically superior force, the planning and execution of the air campaign becomes much more complex because it will be necessary

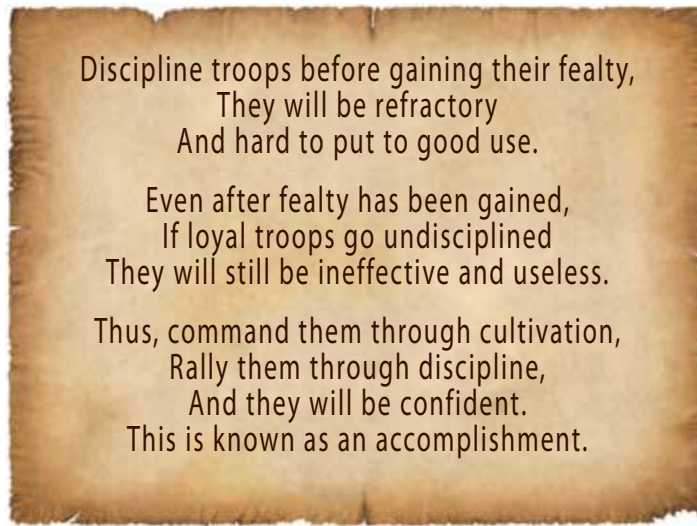
to tailor the requirement for control of the air in terms of time and space. However, control of the air, even when it is tenuous, is a prerequisite for the success of all other operations and therefore will have to be obtained, by contesting it and fighting to win it if necessary. Even a vastly numerically superior force can be defeated by a relatively small, but well-constructed air force that has obtained satisfactory control of the air. In this situation, numerical comparison will only be one of the factors in planning and may not be the determining element in the formulation of the overall plan. By monitoring the deployment and overall operational activities of the adversary air force, particularly one that is operating under resource constraints, it will be possible to discern their strategic plan. Their offensive air operations will indicate their future intent and the concentration of defensive assets will provide a clue as to what the adversary considers their vital areas and weaknesses. By following the underlying broader ethos of Sun Tzu's advice, air forces can become strategically effective elements of national power, especially when employed by professionally sound commanders with a deep understanding of the constraints and advantages that are inherent in the force.

In an air campaign numerical superiority is only one of the contributory factors to victory

Air forces must be developed in keeping with contemporary technological innovations and sophisticated concepts of employment to ensure their efficacy

Even numerically small air forces can be strategically efficient elements of national power

Leadership



Discipline must be based on loyalty. If troops are punished before their loyalty is obtained, they will be disobedient and difficult to employ. As a corollary, if discipline is not enforced, then even loyal troops will be ineffective. An accomplished leader commands with civility, humanely and benevolently, but keeps troops under control with iron discipline. This is the sign of a truly great leader.

In this and the next stanza Sun Tzu emphasises two factors regarding leadership. The first, explained in this stanza, is the establishment of authority through discipline. Discipline itself is based on the loyalty of the troops and should be built up on a judicious combination of kindness and fair martial toughness. Civility, benevolence and humane treatment go hand in hand with enforcing martial discipline and all of them contribute equally to the effective functioning of the force. It is necessary for commanders to develop a discernible relationship with the forces under their command and for the troops to feel a reciprocatory emotional attachment to the force and the commander for them to believe in the righteousness of the cause for which they are going to war. If tough disciplining is done before the force feels it has become sufficiently cohesive, it can lead to disobedience and further to complete incoherence in the force. On the other hand, even a completely unified force, if left without sufficient enforcement of discipline, can become inefficient and useless in battle. Therefore, the acumen of the commander is in being able to lead the force with civility while enforcing discipline, with the award of

punishments if necessary. Sun Tzu felt that to attain this is a great accomplishment for a commander.

‘Do you think every Greek here can be a king?
It is no use having a carload of commanders.
We need One commander, one king, the one to whom Zeus,
Son of Cronus the crooked, has given the staff
And the right to make decisions for his people.’
And so Odysseus mastered the army. The men all
Streamed back from their ships and huts and assembled
With a roar.

Homer
The Illiad, 9th century BC

There is also an element of building *esprit de corps* in this stanza. Training is essential for a military force to function effectively and trust across all levels is a binding factor, but these are not adequate to create the *esprit de corps* that can alter the behaviour pattern of a body of troops. The primary factor that coalesces a body of troops into a single fighting unit is pride in shared victory. Troops will believe in commanders who have demonstrated their capability to lead the force to victory in an honourable manner and there is no substitute for triumph in battle to create the necessary *esprit de corps*. The development of military strategy is heavily based on human psychology and targets the cognitive domain of the adversary to create the necessary effects. At the same time, Sun Tzu describes techniques of leadership to strengthen the defence of one’s own cognitive domain. A well-formulated strategy should always provide a winning result, thereby providing the sense of advancement to the force at all times, which a successful leader will carefully nurture to cultivate the necessary *esprit de corps* within the force.

In contemporary military forces, leadership issues have a common base and cannot be separated in terms of the three Services. The leadership model transcends all levels of command, from the grand strategic at the national level through to the military tactical level. The art of leadership at all levels is the techniques used to motivate the force and the delicate balance between cultivation, loyalty and discipline. In the military forces this is embodied in the professional mastery of the commanders. They must understand and be able to resolve leadership issues, be capable of balancing disparate requirements and be operationally savvy in order to nuance their leadership into successful command. Professional mastery of one’s own domain is necessary for commanders to be considered by their subordinates to be worthy of following, a factor that gains prominence in times of conflict. There is an intangible shift that takes place in the assessment of leaders within the force when it transits from peacetime activities to conflict situations. Similarly, there

are certain elements of leadership traits that cannot be clearly quantified but which change the command ethos of individuals when leading the force into war. While some of these changes can be studied, there is no assured way to measure how a commander, and through him the force, will react to extreme combat situations.

In war it is not men, but the man, that counts.

Napoleon Bonaparte, 1769–1821

At the operational level, training and well-imposed discipline form part of the core of the efficiency of a force. Considering the highly developed skills required in the employment of technologically sophisticated equipment within an air force, both these factors assume greater importance. For air forces—shaped by air power principles—their technical nature, speed of application, precision required to produce discriminatory effects and the strategic consequences of failure emphasise the centrality of these activities to effective employment of air power. Considerate but disciplined command, based on professional mastery at the appropriate level, is the underpinning requirement for a force to succeed. In commanders this will be considered the pinnacle of accomplishment.

The art of military leadership is complex

Training and discipline form part of the core of efficiency in an air force

*Professional mastery of commanders is the underpinning requirement
for a force to be victorious*

Consistent, effective and straightforward commands
Will enlighten and inspire obedience.
Inconsistent, ineffective and obtuse commands
Provoke disobedience.
When commands are set forth with absolute credibility
General and troops come together in trust to success.

Commands should be effective, consistent and easy to understand for the troops to be inspired to obey them. They should also be habitually enforced to ensure that the troops are well disciplined. Leadership is dependent on the mutual trust between the commander and the troops and therefore commands must always be consistently trustworthy and dignified. Mutually rewarding relationships lead on to success.

This is the second factor on leadership that Sun Tzu puts forward, the exercise of leadership itself. In times of peace the commander should show understanding and confidence in the troops and make his authority flow from respect rather than imposing it. This will build mutual trust that will lead to disciplined execution of orders in war, a critical factor in assuring victory. Orders must not be confusing or vacillating but clear, concise and within the capability of the force to execute effectively. It is also necessary for the commander to ensure that each order, when correctly executed, contributes to the overall progress of the battle, campaign, conflict or war to victory and triumph, without unnecessary hardships to the troops. Mutual trust, built up in peacetime, will last in times of war only as long as the troops continue to have confidence in the commander and believe that their best interests are always taken into account in the planning process of the campaign. The nature of the orders can either reinforce or destroy this confidence very rapidly. Loss of trust will have a spiralling effect on morale and lead to disastrous consequences.

Hannibal was the greatest general of antiquity by reason of his admirable comprehension of the morale of combat, of the morale of the soldier, whether his own or the enemy's. He shows his greatness in this respect in all the different incidents of war, of campaign, of action. His men were not better than the Roman soldiers. They were not as well-armed, one-half

cont.

less in number. Yet he was always the conqueror. He understood the value of morale. He had the absolute confidence of his people. In addition, he had the art, in commanding the army, of always securing the advantage of morale.

Colonel Charles Ardant du Pico, 1821–70

Establishing effective leadership at the strategic level in contemporary military forces is a difficult and complex task requiring a number of non-quantifiable qualities to be resident in the commander. This is especially so in a democratic nation that has an all-voluntary military force which is a microcosm of the nation at large and, therefore, directly responsive to it. While the skill sets required at the operational levels will vary, there is no difference in the leadership requirements between the three Services at the strategic level. Sun Tzu advocates the use of simple-to-understand orders to further the cause of the force in the field, even in complex situations. This means that commanders at all levels should be able to break down the complexity of the situation at their appropriate level to ensure that the orders are straightforward and not confusing to the fielded forces. The conduct of the campaign must be done with a clear understanding of its strategic objective, achieved through a series of uncomplicated orders that taken together will form an unbroken chain of action, starting from the tactical to the strategic. The professional mastery required to achieve this is of a very high order and must be resident in the strategic command level of each Service for them to function together as a joint force and achieve the necessary victory in conflict and the stability that is required thereafter.⁴

*A commander's authority should stem from respect and
cannot be imposed*

*Mutual trust between commanders and troops must be assiduously
cultivated and nurtured*

*Commanders should be able to give simple and connected orders to
achieve complex strategic objectives*

⁴ In both the stanzas, leadership has been discussed as applicable to a joint force at the strategic level. It is clear that leadership at the tactical level will require different skill sets from commanders in the three Services. In the explanations, a generic or 'principles only' approach to leadership at all levels has been taken.

Conclusion

A nation must always be prepared for conflict because it is as inevitable as the changing seasons. There are two primary factors that must be considered by the politico-military leadership prior to committing the nation to an overt conflict. First, is the capacity of the military forces to conduct a campaign with a sufficiently high probability of being victorious and, second, the skill levels of the commanders who would be undertaking the campaign. If either of these is found to be deficient, the nation should not be moved forward on the path of confrontation.

Air forces, even small ones, are strategic elements of national power and therefore must have a tangible air strategy that is constantly updated in line with laid down national security imperatives. The air strategy should not only form part of the larger joint campaign strategy, but should also be so aligned with it to further the strategic objectives of the nation. In actuality, the air strategy of a nation is a clear indicator of national intent vis-à-vis the security stance of a State. One of the major considerations in formulating an air strategy is the need to have sufficient flexibility built into it to absorb the dynamic shifts that are common place in modern conflict. The basic requirement is for the air element of the joint force to be able to adapt rapidly to emerging surprises that the adversaries create in furthering their interests.

The numerical strength of an air force is only one of many factors that contribute to its overall 'strength' and small air forces can also be built to be extremely potent in their employment of air power. Air power is by nature, intrinsically technology-enabled and cost-intensive. However, the 'strength' of a small air force will be directly dependent on the high-end capabilities that it can bring to bear in a contextual manner. Therefore, an air force's national security obligations, as laid down by the government, can only be met by providing it the wherewithal to obtain and maintain the quantum of capabilities that would meet the requirements. Often this becomes a vexed balancing act between the political and military leadership. Nonetheless, even small elements of an air force are capable of creating catastrophic effects, making air power a coveted capability in the overall national security equation.

Accordingly, air commanders must possess sufficient professional mastery to be proficient in the complex art of leadership. They must also have a clear understanding of the moral and ethical aspects of the application of force, especially since air power can create disproportionate damage if employed without restraint. Effective commanders will have the ability to earn the respect of the forces that they lead and thereby develop and cultivate mutual trust and confidence with the troops, an essential ingredient to success in battle. Further, air commanders must be able to exercise patience even under extreme pressure and avoid initiating precipitate action that could prove to be disadvantageous in the long term.

An optimum combination of flexible air strategy, adaptable forces with sufficient high-end capabilities and astute commanders will always assure victory in the air campaign.

The Air Force can deter, deliver a tailored response, or punch hard when required—over great distances—with quick response. We can provide a presence, or put ordnance on a target worldwide in a matter of hours.

Global Reach—Global Power
USAF White paper, June 1990



10

Situational Positioning

Strategic Situational Awareness

At a time of confrontation, positioning the force to gain full advantage of its potential as well as the contextual situation is of cardinal importance. A skilled commander will be well versed in optimising the strengths of the force while making sure that weaknesses—however slight they may be—are adequately mitigated and not identifiable by the adversary. Positioning the force correctly to achieve these objectives that will lead to victory requires the highest level of situational awareness. Strategic situational awareness is the most formidable capability that a commander can possess and one that, when cleverly manipulated, will produce the edge that wins battles and wars. Sun Tzu believed that every situation could be analysed to identify the most opportunistic position that would capture the advantage inherent in it. In this chapter he describes the basic six variations that any situation can produce and explains the manoeuvres to position the force in ways that are

appropriate to each, while exhorting all leaders to study them as one of their primary duties.

The second part of the chapter is dedicated to explaining the importance of superior leadership during a confrontation. Sun Tzu explains that brilliant leaders ensure victory by ascertaining that every single action that they initiate will bring advantageous effects for the force without even slightly jeopardising its safety. The acumen of such leaders is such that their ability to position the force based on situational awareness is unparalleled, thereby ensuring that the force is ever victorious. Their ability to evaluate the adversary enables them to choose the time and place of confrontation in such a way that the result is preordained and defeat of the adversary devastating. In other words, Sun Tzu believed that brilliant leadership was embodied in exploiting situational awareness to position the force in an unbeatable manner.

Sun Tzu has written this chapter based on the principles of manoeuvring a force across different types of terrain, emphasising the careful study of 'topography' to utilise it to one's advantage. He placed very high stress on the value of awareness of the real situation in winning the conflict, using the verb *zhi*—to know—in the text 13 times. Considering that this amounts to 2.4 per cent of the entire number of characters in the original text, an unusually high frequency of usage for a verb in traditional Chinese writing, it can be surmised that Sun Tzu was deliberately trying to place a great deal of emphasis on the need for a commander 'to know'.

Formulation of the appropriate strategy depends on knowledge and, therefore, the leadership with better situational awareness will be able to develop better strategies for the employment of forces. Such strategies will have to transcend the physical battlespace. The six characteristics that Sun Tzu enumerates in this chapter must be considered in terms of the physical and, metaphorically in the virtual realm of battle. Sun Tzu did not use the term 'terrain' to mean its literal definition but as a concept which combines the modern terms of 'topography' and 'military geography' in the physical and virtual sense—the contemporary battlespace. In the military context, the understanding and use of this 'geography' to enhance manoeuvre capabilities and situational positioning is an essential element of strategic planning. Strategic situational positioning is the combination of the commander's knowledge and employment of forces to gain control of the area of operations, which in contemporary air power terms will be control of the air.

Sun Tzu acknowledges and emphasises two major factors in this chapter. The first is that conflict situations are always ever-changing and never constant. This requires continuous evaluation to ascertain strengths and weaknesses that could be exploited to one's own advantage when they become apparent. The second is that even advantageous positions will be degraded over time because of the dynamic nature of the environment in a conflict. Considering both these factors, the importance of assuming a position from which it is possible to move forward to more advantageous positions becomes clear. Sun Tzu puts forward six situations as the basis for understanding the issues that situational positions pose in the employment of forces and their advancement. The acme of

leadership lies in being able to deal with these issues effectively, with minimal disruption to one's own forces while ensuring that victory is never in doubt.

The terrain of war is generally mapped using one of two 'projections': those of art and science. As with other maps, detailed study of both projections leads to more complete understanding of the terrain. The science of war (knowledge); the art of war (application of knowledge).

Wallace P. Franz and Harry G. Summers
Art of War Colloquium

Situations

There are six forms of Situational Positions;
Accessible, Entangled, Indecisive, Narrow, Obstructed and Distant.

Accessible means both sides can move freely.

In an Accessible Position,
Those who occupy the heights and the light
Can secure supply routes.

A challenge then will be advantageous.

Entangled means advance is possible, withdrawal hard.

In an Entangled Position,
If the opponent is unprepared, move first and triumph.
Against a prepared opponent, if the move fails there is no retreat.
The outcome is of no advantage.

Indecisive means neither side finds advantage in manoeuvre.

In an Indecisive Position,
Despite any advantage over the opponent, do not move first.
Lure with a retreat, causing the opponent to move out.
Strike then to advantage.

Battlespace can be classified into six types according to its nature—accessible, entangled or entrapping, indecisive, narrow or constricted, obstructed or precipitous and distant. Military manoeuvres that determine victory and defeat are directly affected by the formation of the land and should therefore be studied. When both sides can traverse with ease, the ground is accessible. On accessible ground, be the first to reach and take up position. Choosing the high ground on the sunny side and ensuring that the supply routes are unimpeded will be advantageous in battle. When it is easy to go in but difficult to come out, the ground is entrapping. On such ground, an unprepared opponent will be defeated if attacked. However, if the enemy is prepared and if one attacks without prevailing, disaster will ensue because retreat is difficult. When it is disadvantageous for both sides to enter, the ground is indecisive. The nature of this ground is that one should not go forth even if a clear advantage over the adversary is visible, but should entice the enemy by withdrawing. When a substantial part of the enemy force is drawn out, they can be attacked advantageously.¹

Sun Tzu enumerates and then explains six situations that will affect the manoeuvring of the force in different ways. He elaborates the advantages that can be derived from understanding them and the disadvantages of taking ill-considered actions without giving full cognisance to them. Sun Tzu's basic intent here has been to clarify the connection between the present situation and the future and to evaluate, in a long-term perspective, the difficulties involved in ensuring that each manoeuvre is aligned with gaining advantage and bettering the current situation.

Accessible Situations

The first is a position that is open to all the protagonists and where it is easy for the forces to be manoeuvred at will. However, since such freedom is available to all the forces involved, one has to be constantly on the watch for signs of offensive action from the adversary, which means that situational awareness has to be optimum. Sun Tzu mentions securing lines of supply when in such a situation, which can be extrapolated to mean not merely logistics, but strategic support from allies, and the political dimensions—both domestic and international—of the conflict. The fact that the adversary has equal access means that it will be necessary to seize the initiative and position oneself in an

¹ Although the six Situational Positions or Forms of ground can be considered together, for ease of explanation and understanding as well as for uniformity and tidiness in the layout, three have been dealt with in this first stanza and the other three in the next.

unassailable position, in the physical battlefield and in the virtual conflict domain. Shaping perceptions and creating cognitive effects are two important ways of achieving virtual positional superiority. The characteristic of being fully accessible to one's own and the adversary's forces is at one extreme of the spectrum that defines the situational positions.

From an air power perspective, assured success in an area of operations that is fully accessible hinges on winning the contest for control of the air. By obtaining control of the air at the earliest opportunity, one not only reduces the attrition that accompanies a long drawn contest but also enhances one's own situational awareness. Further, the robustness of the supply lines that are critical for the success of further manoeuvres is also relatively easier to ensure. Therefore, taking the high ground—obtaining adequate control of the air—brings with it the advantage of retaining the ability to determine the tempo and direction of conflict. Under these circumstances air power contributes directly to the deterrent capability of the nation by being able to project an offensive and controlling posture.

Once the command of the air is obtained by one of the contending armies, the war must become a conflict between a seeing host and one that is blind.

H. G. Wells

Entangled Situation

The second position is such that advance is possible but withdrawal or return to original position of comparative safety and stability, if necessary, will be problematic. In such a condition, it is necessary to ensure that the manoeuvre being contemplated will always be successful since even a slim chance of failure could rapidly become calamitous for the force. At the operational level this could indicate an adversary ambush and inadequate situational awareness that rapidly permit one's forces to be enveloped, thereby negating any chance of withdrawal. However, in strategic terms Sun Tzu is providing a warning to commanders that the grand strategic direction of national security imperatives should not be altered without careful analysis of the consequences because of the extreme difficulty in returning to earlier and safer positions, once a change in direction has been initiated. In air power terms, it indicates that the employment of air power sets in inexorable motion a series of consequences and effects. In contemporary conflict, this encompasses the effect of the media that at times tend to demonise even the legitimate use of force. This is further exacerbated when the adversary is well versed in manipulating

international perceptions at the strategic level. Political, diplomatic, economic and social factors become very important when dealing with entangling positions to further national interests.

Objectives vary considerably in war, and the choice of them depends chiefly upon the aim sought, whether command of the air, paralysing the enemy's army and navy, or shattering the morale of civilians behind the lines. This choice may therefore be guided by a great many considerations—military, political, social and psychological.

Giulio Douhet

When an entangling position is encountered it must be ensured that a stronger new position is available to move into before forces are committed. This is the only way to avoid being overwhelmed by the adversary's manoeuvres while being entrenched in a static disadvantageous position. At the operational level, air power plays an important role in ensuring that the momentum of the force forward towards a stronger position is maintained irrespective of the adversary's actions. This achieved by having adequate situational awareness through the optimum employment of airborne surveillance and reconnaissance to avoid being trapped in an ambush and by offensive air strikes to weaken the adversary's position. Air power's long-range interdiction capabilities will be able to shape the deep battlefield in one's favour and thereby ensure that victory is assured when the force is moved out of the current stable position into a more advantageous one. At the grand strategic level of national security, air power is only one part of the broader military capabilities that determines the nation's posture. However, air power has the capacity to play a disproportionately large role in the pursuit of coercive diplomacy and in carrying out actions that emphasis deterrence. In all cases where a move out of the existing situation carries an inherent risk of not being able to return to it in stability, air power capabilities provide a wide range of options to the commander. For example, the relative impermanence of air power creates the ability to avoid being compelled into a disadvantageous engagement. Further, its responsiveness and speed, when employed professionally, has the capability to extricate a force that is surrounded by the adversary.

Indecisive Situation

The third position, of being in an indecisive situation, could be interpreted in three ways—one, that the position is so stable and convenient for one's own purposes that it should never be vacated; two, that the adversary will try to outmanoeuvre one's forces because of the advantages inherent in the position; and three, both sides are in such secure positions that it is improbable that either would mount an attack. The decision in this case should be to never leave the position, even if a clear advantage is identified through observations and analysis. Sun Tzu mentions that along with entangled positions, indecisive positions are also dangerous. However, indecisive positions provide much greater flexibility in that while advancing to a more advantageous position may be difficult, the option of coming back into the original stability is always open. In such a position it would be prudent to build it up and expand rather than giving it up completely to move forward. Sun Tzu advises that one should patiently lure the adversary out from such a position, and then occupy the position that has been vacated. Thereafter, the exposed adversary can be attacked and defeated. At the strategic level this situational position indicates—one, that the national security posture is stable and well aligned with future requirements, needing no major changes to be incorporated; and two, that even the adversary's elements of national power are strong, thereby leaving no obviously decisive avenue for attack.

A military force finds it advantageous to hold fast to its position of strength while not providing the adversary with any indications of weaknesses. This is a situation of stability from which the force should only manoeuvre with great caution while maintaining the advantages that are already inherent. Under these circumstances, the commander should exercise patience and forbearance in waiting for the adversary to manoeuvre first and then capitalise on possible mistakes that may be made. In a number of ways this is shaping the battlespace to create an advantage, like drawing the adversary away from a secure base, in either the physical or the cognitive domain. Superficially, this concept might seem to be a defensive posture, but its implementation is oriented offensively and its successful implementation is completely dependent on the veracity of offensive actions.

A recipient of a PGM [precision guided munition] does not know or care if the weapon came from near or far, or from what kind of a platform, or what kind of base.

Brigadier General David A. Deptula, 2001

Air power is an offensive entity with its capabilities, characteristics and concepts of operations being optimal when offensively employed. Therefore, air power contributes

directly to the offensive security stance of a nation even from a position of comparative and durable stability. Further, air power assets can be used to provoke the adversary to initiate precipitate action and contest the stable position that one's own forces occupy. Thereafter, air power can carry out effective strikes to gain advantage. Air power is an effective shaping tool with rapid response capabilities that can seize even momentarily visible advantages. At the grand strategic level, air power can be used to enhance the offensive security posture of the nation by utilising its capacity to carry out punitive strikes to enforce containment and demonstrate coercive deterrent capability, when necessary.

Control of the air is a prerequisite for all other military activities

Air power can shape the deep battlespace during a campaign

*Air is an offensive capability ideally suited to pursuing coercive
deterrence at the strategic level*

Narrow means only one can occupy it effectively.

In a Narrow Position,

Be first to occupy it fully and lie in wait for the opponent.

If the opponent occupies it first,

Never pursue if they fill it; pursue only if not yet full.

Obstructed means there are heights that limit manoeuvre.

In a Obstructed Position,

Occupy the heights and position with a good view to await the opponent.

When the opponent is first to occupy these,

Never pursue; but lure with a retreat.

Distant means the grounds are open and both forces are equal.

In a Distant Position,

It is difficult to provoke challenge,

And so a challenge will not be advantageous.

Generally these six are the Tao of Situations.

It is a leader's greatest duty to study them diligently.

When only one side can effectively occupy it, the ground is narrow. On such ground, if one is the first to occupy it then garrison it completely and await the enemy. If the opponent is there first and is garrisoned well, do not pursue or attack, but if their defence is incomplete, attack them. When the ground has heights that can be occupied, it is obstructed. In this case, if the first to reach, one should occupy the high and sunny side and await the enemy. If the opponent is there first, do not pursue but lure them by withdrawing. When the opposing forces are far away from each other, it is distant. When the ground is wide open and the enemy is of equal strength it is difficult to provoke battle and disadvantageous to fight since manoeuvre options will be limited. Understanding these six situations is the highest responsibility of the commander and it is imperative to examine them carefully.

Narrow Situation

The fourth is the narrow situation wherein only one force can fully occupy the area. These are good defensive positions and can be fully enclosed to prevent the adversary's offensive actions. From a strategic perspective, in such a situation it is necessary to maintain the full spectrum of combat capabilities since the effectiveness of a defensive stance is dependent on being able to anticipate adversary initiatives against any gaps in one's own capabilities. As a corollary, if the adversary has occupied the narrow position, frontal attacks should never be launched because they are bound to fail against well-prepared defences. The only option available under these circumstances is to identify the weak spots in the defences, if they seem to be incomplete, and target them with as much subtlety as possible. Sun Tzu advises that offensive action should only be initiated if the narrow position is not fully occupied and there are visible gaps in the defensive capabilities of the adversary. At the grand strategic level, occupying the narrow area could be the beginning of an offensive campaign that progresses to maintaining control thereafter by building up an unassailable defensive posture using all elements of national power with sufficient and demonstrated offensive capability. This is particularly important in a region where there is only room for one nation to dominate, necessitating the formulation and implementation of an appropriate national security strategy. A national security strategy that recommends building up defences when the nation is in a stable condition makes immense sense. However, historically it is seen that democratic nations that go through long periods of tranquillity tend to neglect rather than improve the capabilities of their military forces. In these cases, a future deterioration in the security situation will have a detrimental effect on the overall progress of the nation.

The Golan Heights

Israel's occupation of the Golan Heights from 1973 is a classic example of how positioning in a narrow situation can be converted into a strategic advantage. The Golan Heights were the key to Israel's defence against Syrian attacks in both 1967 and 1973. In 1967, the Syrian forces were unable to 'fill' them fully, thereby providing Israel with the opportunity to move into the gaps and exploit them to capture the entire area. From an operational assessment of the area of operations, it can be very clearly noticed that the force that controls the Golan will be able to control the tempo and direction of combat in that region.

At the operational level, air power can play a pivotal role in creating a credible defensive posture. However, defensive posturing in air power employment is comprehensively based on very definitive offensive capabilities. Fully occupying the narrow situation will require maintaining control of the air across the entire theatre of operations. For a capable air force, even a widely spread theatre becomes the metaphorical equivalent of the narrow area that it can completely fill. If this is achieved before the adversary has initiated any action, it will be necessary to carry out offensive operations to maintain the control and ensure that the adversary desists from initiating offensive action. The level of control of the air will determine whether the adversary perceives any openings that can be exploited.

On the other hand, if the adversary already has control of the air, fighting to reverse it may not yield the desired result. Wresting control of the air from a force that has already claimed it and has adequate resources at its command is not an easy task and fraught with the very real risk of failure and/or unacceptable attrition. Strategic situational awareness is a prerequisite to resolving this challenge. The course of action to be adopted will be determined by the adequacy and assurance of accuracy of the situational awareness at the grand strategic level of command. Under these circumstances it would be more prudent to start with attempts to obtain a lesser level of control of the air, designated in time and space by one's needs and adversary vulnerabilities, to cater for one's own surface manoeuvres. Once a tolerable air situation has been obtained for a period of time over designated areas, increasing its spread can be contemplated, keeping in mind adversary activities and identifying noticeable gaps in their air superiority network. When the situation is one of restricted areas of operations, the best option is to try and obtain control of the air at the earliest and then to deny the adversary any opportunity to contest it. Metaphorically, such control of the air is the equivalent of truly filling a narrow position.

Obstructed Situation

The fifth situation is similar to the second, the difference being that in this situation it is difficult to enter as well as exit. Here Sun Tzu is laying the emphasis not so much on the difficulty in moving into this position, but the relative ease with which it can then be defended since the adversary will also face the same barriers to manoeuvre to contest the position. Strategy is always opportunistic; however, it should not be construed as taking the easiest developmental path. Strategy development and implementation processes must incorporate sufficient observation and analysis to identify the possible barriers and the force must be robust enough to overcome them. The greater a nation's capability to evolve strong, well-aligned strategy in support of security imperatives, the greater will be its capability to secure itself. Sun Tzu lays down the axiom that in case an adversary has already attained the heights and formulated a strategy that apparently seems insurmountable, then the optimum way forward is not to pursue them, but to lure them out of their safe environment. This would mean evolving a strategy that could have a certain amount of deception incorporated in it, to coax the adversary to manoeuvre by providing false indications of one's own forces' retreat, confusion etc. Getting an adversary who is ensconced in an impregnable position to move out willingly requires a great deal of acumen in formulating the strategy and laying of the plans.

One general inference to be drawn has been that in twentieth-century war, defeat will almost always be avoided (and outright victory likely gained) by the side that has secured air superiority. Indeed, a more comprehensive perusal would probably show that virtually the only exceptions concern counterinsurgency warfare.

Neville Brown

In an air campaign, the heights are a position that is enviable in that it indicates a situation of impregnable strength and could be translated to uncontested control of the air. However, in contemporary conflict unchallenged control of the air will be hard to obtain, even when the adversary is a non/quasi-state entity with almost no air assets. This is because of the proliferation of light and portable air defence systems that can and do contest control of the air in a particularly lopsided manner. Control of the air entails that own forces are never threatened from or through the medium of air, and in that sense even surface-to-surface long-range missiles could be considered an air threat, which at least for the moment cannot be completely contained by air power. A capable air force can provide the necessary degree of control of the air to assure the required freedom of manoeuvre for one's own surface forces through dedicated air operations if

necessary. The level of freedom of manoeuvre is metaphorically the new high ground in an environment where absolute control becomes unachievable. This requires the implementation of a strategy that has been developed after taking into consideration the context of the campaign and the situational position of the force.

The concept of luring out an entrenched adversary provides an opportunity to use the resident flexibility of air power to underpin the deception part of a strategy. Air power can be used to feign attacks and also to concentrate overwhelming fire power at the required time and place with minimal warning. Further, pre-emptive attacks that follow a deceptive move have the capacity to neutralise the defensive barrier that the adversary has erected. This could create an opportunity potentially to contest the control of the air from a relatively equal position. However, coordination of these actions is complex and will need careful planning at the highest levels of command to ensure even partial success.

Distant Situation

The sixth situation is about the contest against an adversary with parity in capabilities in a space with no special physical features that shape the conflict space. In such an environment, advantage is gained only by superior positioning and manoeuvre. Sun Tzu indicates that even when one has superiority in forces—numerical or capability—it may not be possible to exercise the superiority at all times because of other commitments and preoccupations. Therefore, this situation covers the contingency when one may be temporarily weaker than the adversary and can still create advantageous positioning through innovative strategy. Under these conditions it is fairly certain that provoking a physical conflict will lead to defeat. Here the strength of a force should emanate from its unity, not so much from numerical superiority. Conflict winning cohesiveness in a force stems from unity of command at the highest levels and unity of purpose at all levels. When the force is compelled to spread—physically as well as philosophically in terms of operational goals—the gaps will be apparent to any intelligent adversary. It is necessary under these conditions to gather the force closer, even at the cost of retreating to a defined defensive position, and re-evaluating the campaign objectives vis-à-vis the supporting operational goals.

Conditions are such that the hostile forces favoured by the time are advancing. In this case retreat is the right course, and it is through retreat that success is achieved. But success consists in being able to carry out the retreat correctly. Retreat is not to be confused with flight. Flight means

cont.

saving oneself under any circumstances, whereas retreat is a sign of strength. We must be careful not to miss the right moment while we are in full possession of power and position. Then we shall be able to interpret the signs of the time before it is too late and to prepare for provisional retreat instead of being drawn into a desperate life-and-death struggle. Thus we do not simply abandon the field to the opponent; we make it difficult for him to advance by showing perseverance in single acts of resistance. In this way we prepare, while retreating, for the counter-movement. Understanding the laws of a constructive retreat of this sort is not easy. The meaning that lies hidden in such a time is important.

The I Ching
China, 8th century BC

Air power has the capacity to produce effects far in excess of the physical assets available to it, provided the force has mastered the technological edge that provides such force multiplication. For two air forces that are evenly matched—able to exercise air power wherever they need to—the advantage will lie in the appreciation of the strategic application of the force. One of air power's greatest qualities is that, even with limited asset availability, it can intimidate and overwhelm a numerically superior force if its employment concepts and strategy are clearly focused. This factor is not as well understood, even by air power exponents, as it should be, because it alone makes air power a coveted force projection capability. In the situation of being at a disadvantage by virtue of being spread out or overcommitted, air power, enhanced by technologically empowered force multipliers, can provide at least temporary reprieve. When such a situation is superimposed onto control of the air, it once again points to conducting a contextual, well-defined quest for a favourable air situation at the time and place of one's own choice rather than confronting an adversary with superior strength and capability enjoying an advantageous position.

Achieving control of the air is a primary objective and of critical importance in an air campaign

Strategic situational awareness will be the deciding factor in aligning the air campaign to the grand strategic objectives

Air power characteristics can be optimally employed to underpin the deceptive aspects of the overall strategy

Conclusion

Sun Tzu has generalised positions into six situations but clearly indicates that each emerging position will be unique, and should be treated as such. The positions that are explained in the text form three pairs that show the extremity of each of the spectrums in terms of the dangers involved, the obstacles to be countered and the distances—physical and cognitive—to be covered. They provide a baseline from which to analyse positions that emerge during conflict. The pairs are accessible and obstructed, entangled and indecisive, and narrow and distant, and almost all manoeuvres can be evaluated using the ambit of these positions. Sun Tzu exhorts all commanders to study these positions with the utmost diligence.

The contemporary air power explanations of these six situations and associated positions have centred on the concept of control of the air being critical to the success of all other operations, including achieving sufficiency in situational awareness. From an air campaign perspective, control of the air is the most important and primary mission that an air force must undertake—and perhaps the biggest contribution to the joint campaign, although not fully appreciated at times—before it can divert its capabilities to contribute more directly to joint objectives at the operational level. Sun Tzu's six situations provide a broad foundation to assess the various difficulties, patterns that emerge and the challenges that a force attempting to obtain and maintain control of the air will encounter.

Strategic Mistakes²

In Strategies of War,
Six results are not natural catastrophes
But derive from the mistakes of the leaders:
Flight, insubordination, collapse and disintegration, disorganisation and rout.

Other conditions being equal,
One confronts another ten times more powerful;
The outcome is Flight.

When the team is strong and the officers weak,
The result is Insubordination;
Strong officers but a weak team,
Leads to Collapse.

The force can be exposed to several natural calamities but there are six strategic mistakes that are the purely the responsibility of the commander and not attributable to natural calamities—flight, insubordination, collapse, disintegration, disorganisation and rout. Other conditions being equal, when a force attacks another that is ten times its strength, the result will be the flight of the former. When soldiers are strong and the officers weak, the force will be insubordinate. When officers are valiant and the soldiers ineffective, the force collapses.

In Sun Tzu's time, natural calamities had a significant impact on the manoeuvre capabilities of both the adversary's as well as one's own forces and their ability to win wars. In this stanza, however, he has consciously listed six conditions and the results of their manifestation on a force stemming from the mistakes of the commander, if they are not recognised and corrected in time. The conditions listed are not minutely exhaustive, but in a generic manner cover all the possible situations that a force could encounter. There is an indelible connection between the six categories of leadership failure that are identified and the six characteristics of situational positioning that have been explained in the beginning of the chapter. The impact of wrong decisions by commanders and their

² As in the previous subsection, the six strategic mistakes have also been dealt with three at a time for ease of explanation and understanding as well as uniformity and simplicity in presentation.

lack of focused leadership on the force is a constant theme throughout the treatise, as are descriptions of the characteristics that a superior leader should possess and cultivate.

Flight

The first mistake that is listed stems from the failure of the commander to carry out an assessment of adversary capabilities and make a realistic comparison with one's own forces. Sun Tzu mentions numerical superiority of the adversary, but the couplet should be understood in terms of comparing the total capability of both the forces to determine relative superiority. In a conventional conflict, overwhelming superiority—numerically ten to one in Sun Tzu's estimate—will normally lead to the inferior force being put to flight. The responsibility for the force being put to flight will rest with the commanders since it is their primary duty to analyse and assess the adversary capability, identify weak areas and only then decide the optimum course of action. A direct frontal attack on a superior adversary can occur when the assessment has been incorrect or when the commander is foolhardy. In either case, the end result will be flight and the blame will rest conclusively on the incompetence of the commander. When faced with a superior adversary the options available are many—avoiding direct confrontation, adopting asymmetry to neutralise the adversary's advantage, guerrilla warfare and, in extremis, suing for peace to gain time—and must all be evaluated, at the grand strategic level, before deciding on a course of action.

When faced with an adversary air force which has overwhelming superiority in the air, it will be difficult to even contest control of the air without being annihilated as a force. Therefore, it would be a blunder to attempt to wrest control of the air through direct action. The situation must be carefully analysed before any action is taken, and the decision to implement the chosen course of action must come from the strategic level of command because of the great risk to the force. However, under certain circumstances it will be necessary to contest control of the air, even against a superior air force. Under these circumstances, action must be initiated after obtaining the maximum amount of strategic situational awareness possible. It might also be prudent in these cases to try to obtain the bare minimum level of control of the air required rather than risk the force in its entirety in an attempt to gain complete air superiority. It will indeed be an incompetent air commander who will not be able to appreciate the situation and commits the force to actions that could lead to its oblivion.

On the other hand, air power has its own asymmetric qualities and a commander must leverage them to subvert the adversary as far as possible. This will provide an opportunity for own forces to operate in comparative safety. Asymmetric capabilities must be a major factor in calculating the relative strengths of the competing air forces. Both nuisance raids and highly targeted attacks on adversary centres of gravity can create asymmetric effects with minimal risk to own air power assets. Air insertion and extraction of Special

Forces groups to carry out clandestine disruptive missions are also examples of air power's asymmetry. All these are factors that a skilled commander must consider in determining the optimum course of action when faced with a superior adversary and in deciding the opportune moment to attack when so desired.

The Emperor [Napoleon Bonaparte], while he was quite prepared to 'break eggs to make omelettes,' as von Clausewitz puts it, was always eager to gain total victory for a minimum expenditure of manpower and effort. Consequently he disliked having to force a full-scale, fully arrayed frontal battle—that is to say, marching directly against the enemy to fight him on ground of his (the adversary's) choosing, for such battles were inevitably expensive and rarely conclusive (Borodino in 1812 is a case in point). Instead, whenever possible, after pinning the foe frontally by a feint attack, he marched his main army by the quickest 'safe' route, hidden by the cavalry screen and natural obstacles, to place himself on the rear or flank of his opponent. Once this move had been successfully achieved, he occupied a natural barrier or 'strategical curtain' (usually a river line or a mountain range), ordered the blocking of all crossings, and thus isolated his intended victim from his rear depots and reduced his chances of reinforcements. Thereafter, Napoleon advanced relentlessly toward the foe's army, offering him only two alternatives—to fight for survival on ground not of his choosing, or to surrender.

The advantages afforded by such a strategy are obvious. The enemy army would be both taken by surprise and almost certainly demoralized by the sudden apparition of the enemy army in its rear, cutting its communications.

David G. Chandler
The Campaigns of Napoleon, 1966

Insubordination and Collapse

The second and third mistakes are interrelated in that they consider forces that have strong soldiers and weak officers, and vice versa. The force with strong soldiers but commanded by incompetent people would lack management and effective leadership leading to insubordination. On the other hand, strong officers and weak soldiers would lead to micromanagement and overall collapse which is equally debilitating for the overall performance of the force. Weak leadership will translate to poor decision-making at all levels of the force leading to the inability of the force either to take the initiative in shaping and dominating the battlespace or improve its situational positioning. While the strength of such a force is the dedication and ability of the troops, under dubious leadership it is not likely to become a war-winning capability. Unified command is

essential for realising strategic objectives and is the source of strength for the entire force. Lack of a strong strategic leadership—itself a major flaw at the command level—exacerbated by lackadaisical middle and lower level command, will leave the force without the vision and focus needed to mould it into a competent fighting entity. Such a force will not only be unable to identify opportunities, but will also lack the capability to adapt to emerging changes—a sure recipe for failure.

The other side of the coin is a force with strong leadership and weak and incompetent troops, which require hands-on management from the command structure at all levels. The success of a force is dependent on the overall competence it has vis-à-vis the combination of leadership qualities of the officers and the capacity of the troops to perform at the required level, at all times. When the troops are incapable of delivering the required capacity at the right time and place, and to the right quantum, the force fails. Strategically, this position is also the indirect result of unimaginative leadership. As well as poor troops, it could also be due to the strategic leadership's failure to assess clearly national security needs and challenges and therefore not generate the required force levels.

A force, even with well-drilled 'soldiers' and the latest technology, will still be weak if the combination of training and technology is not aligned completely with correctly identified national security needs. If a force has been allowed to deteriorate to a situation wherein the troops cannot support the strong leadership, the onus of responsibility lies with the commanders, since it is their duty to have noticed the lacuna early enough and instituted remedial action. This kind of weakness is the result of a lack of focus and unified understanding regarding strategic objectives and clarity regarding the thread that connects all elements of national power. Sun Tzu indicates that the weakness of the troops could either be because of the selection of the wrong people or the failure to impart appropriate training. These are both remediable and the leadership should concentrate on these two aspects to build the force back to competence.

The strength and weakness of the leadership and the troops, and the combinations of the two, have no direct bearing on a force achieving control of the air. However, the efforts to balance the force will indirectly affect the situation. The first requirement is for the senior leadership to be able to identify the status of their own force and have a clear comparative idea of the adversary forces. Thereafter, it will be possible to build the force that is required to win, the only caveat being that air forces take an inordinately long gestational period to incorporate new capabilities or change their focus. From Sun Tzu's assessment it is possible to deduce that a balanced force, wherein the leadership and troops are matched and adequately capable, will be a force with the potential to win wars. From an air power perspective, the composition of a balanced force would have to incorporate high-technology capability generating assets that in combination with the human element of the force will be able not only to gain and maintain control of the air, but also to create all the necessary effects in pursuing national security objectives.

The scientific and technical talents of the contemporary world are spread rather evenly among all potential contenders. This means that whoever invents whatever new device to supplement his power, the other will not be long in shaping it himself for his own uses. While he is doing it, his primary interest will be not in bringing the device to maximum effectiveness, but in the study of its deficiencies.

J. M. Cameron

When faced with an overwhelmingly superior air force, the decision regarding the course of action to be adopted should be taken at the highest strategic level

A skilled air commander will leverage air power's asymmetry through strategic situational awareness to bridge the capability gap with a superior adversary

A balanced force, with effective leadership, efficient soldiers and high-technology capability generating assets will be able to create the necessary effects to support national security objectives

When superior officers are angry and insubordinate,
And charge in to battle—
Before victory is ascertained by the leader;
The outcome is Disintegration.

When the leader is weak and undisciplined,
And orders are not enlightened by the Tao;
When both officers and the team have no principles,
And the Strategy is indulgent and illogical;
The result is Disorganisation.

When the leader misjudges the opponent;
And throws the few against the numerous,
Makes the weak confront the strong;
When the Strategy is flat and unfocused;
Rout will result.

These Six constitute the Tao of Defeat.
It is the leader's greatest duty to study them diligently.

When senior officers are angry and insubordinate and on encountering the enemy give battle on their own account from a feeling of resentment, without awaiting orders from the supreme commander and with no understanding of the feasibility of victory, the force will disintegrate. When the commander is morally weak and without authority, when his orders are not clear and distinct and guidance not enlightened, when there are no consistent rules to guide or fixed duties assigned to officers and men, and when the strategy is ill-developed, the result is utter disorganisation. When a commander, unable to estimate the adversary's strength, uses an inferior force to engage a larger one, or weak troops to strike the strong, and fails to develop and implement a focused strategy, the result is rout. When any of these six conditions prevail, the force is on the way to certain defeat. It is the commander's greatest duty to study them carefully.

Disintegration

By virtue of their role and composition, military forces have always been hierarchical irrespective of their size and spread. The effectiveness of a large force is, therefore, dependent on the focus of its 'sub-commanders' in both understanding the strategic objectives and achieving their own operational aims in support of the higher goal. By classifying them as 'angry and insubordinate', Sun Tzu is indicating a greater malaise within the officer corps, that of the quest for personal glory, which is inimical to the cohesiveness of the force's overall strategy. A military force is only as united as the common acceptance of its philosophy and sense of shared mission which gets diluted when middle level commanders do not function in unison. A large military force faces the possibility of lack of cohesion both because of increased physical distances between individual units as well as from psychological distance between different commanders who may not subscribe to the same fundamental strategic objective, either because of a lack of understanding or by consciously pursuing a separate agenda.

A contemporary joint military task force will always be composed of disparate units and forces from all three Services. Maintaining the cohesion of such a force is much more difficult than if the force is a homogenous whole. In the case of air forces, the primary tenet of centralised control and decentralised execution makes it necessary to develop subordinate commanders with a very clear understanding of the strategic objectives of the military campaign. Centralised control is necessary to ensure that air power is not frittered away by being employed in small force elements to cater for minor areas of local interest, rather than being concentrated on the theatre aspect of the campaign. Superior leadership in employing air power is a product of professional mastery of a very high order.

The central commander of air forces must be able to allocate and employ the resources under his control in such a way that it is fully aligned with the overall military strategy. Air forces that do not follow this tenet and where the subordinate or local commanders do not focus on the broader picture of the campaign will provide the most demonstrative example of a force in the throes of disintegration. It will be fairly easy for an intelligent adversary to identify this weakness and then exploit it to the fullest to their advantage. Under these circumstances, control of the air will at best only be highly localised and short term. Such a situation is a precursor to the impending failure of the entire campaign in the long term when an adversary is able to counter the piecemeal approach effectively.

Nothing is so important in war as an undivided command. For this reason, when war is carried on against a single power there should be only one army, acting upon one base, and conducted by one chief.

David G. Chandler

Maxim LXIV, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

'Better one bad general than two good ones' was another of Napoleon's best-known utterances. On the evening of the battle of Lodi in 1796 he learned that the command of the Army of Italy was henceforth to be shared between Kellermann the Elder and himself. He successfully challenged the ruling. He was also adamant in later years that the French Army was a single entity, *la Grande Armée*, from which component parts, the *corps d'armée*, would be temporarily detached to form regional groupings.

In modern wars the lesson has been well applied to alliances as well as to national armies. Thus General Eisenhower was Supreme Allied Commander Europe (or SACEUR) during 1944–5 against Hitler's 'Thousand Year Reich', while Admiral Mountbatten was Supreme Allied Commander South-East Asia against the Japanese Empire.

Disorganisation

The strategic commander must be a person with moral authority to enforce his well-thought-through orders so that the cohesiveness of the force is always maintained. A military force functions best when the directions and orders are clear and unambiguous from the highest to the lowest level of command. There will be confusion in the force if individual commanders focus on narrow personal goals and quest for glory rather than on the strategic objectives. This will lead to the force being disorganised, leading to loss of unity of purpose. It is the responsibility of commanders at all levels to make sure that the strategic objectives are never lost sight of, thereby ensuring that the force functions in a unified manner. The focus for the force must be clearly provided by the highest level of command and responsibilities devolved to the lower levels while ensuring that the strategic objectives are well understood. Failure to provide clear orders, that are achievable within the capability of the force, and to develop and implement a strategy that provides a war-winning edge to the force will lead to the force becoming disorganised through lack of focus.

In the conduct of the air campaign, lack of clear instructions and orders that focus the available air forces to achieving strategic objectives will lead to the dissipation of

the force's capabilities. Further, it will become disorganised because of the conflicting initiatives that subordinate commanders will try to implement. Under normal circumstances the air power assets available to a theatre will only be sufficient to achieve the desired level of control of the air and perform other priority tasks. Therefore, utilising these assets in any manner less than the optimum will only lead to the joint force facing a situation of not having the desired level of control of the air. Centralised control, exercised through unambiguous orders and enlightened guidance that facilitates effective decentralised execution, is the only way to assure adequate control of the air needed for the success of the military campaign. Rigorous training goes a long way in ensuring the performance of the force, but only competent leadership at all levels will keep the force focused, avoid mission overlap and descent into disorganisation.

Rout

The sixth mistake of a commander is perhaps one of the most common—the underestimation of the adversary, both in regards to numbers and combined capability. This could be the result of inadequate effort or resident capability within the force to identify and analyse the adversary's size, capability and intent or the incapability of the commander and his staff to appreciate correctly the situation, even when adequate information is being provided. In both cases, the fault is the commander's and the result will be a resounding rout of the force. This strategic mistake brings the six mistakes—organisational and leadership weaknesses—to a circular close, in that the list of mistakes starts with commanders who jeopardise their forces through indecisiveness and finishes here with those who make wrong decisions and place their forces in danger. Both stem from ignorance of the adversary's capabilities.

Under normal conditions all military forces—however well trained, equipped and commanded—will be routed when pitted against overwhelmingly superior forces. This has been demonstrated over and over throughout history. In this case, overwhelmingly superior means that the adversary is better than one's own forces in all aspects of warfare and is also numerically larger. A commander must at all times be able to make the correct judgement in terms of the relative capability of the adversary vis-à-vis one's own, to be able to make the appropriate decisions that will lead the force to success.

A general of ordinary talent occupying a bad position, and surprised by a superior force, seeks his safety in retreat; but a great captain supplies all deficiencies by his courage, and marches boldly to meet the attack.

David G. Chandler

Maxim XVIII, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

Mediocre generals holding poor positions and seeking refuge in retreat before even inferior forces, never mind superior ones, are not hard to discover in 20th century military history. One thinks of such Italian commanders as Generals Maletta and 'Electric-Whiskers' Berghenzoli being forces out of position after position in Egypt and then Libya by General O'Connor's Western Desert Force in 1940–1, which never numbered more than 20,000 men. Similarly, the British defence of the Malayan Peninsula against the smaller Japanese army of General Mutaguchi in late 1941 to early 1942 left something to be desired, although Japanese air superiority and continuous enveloping marches through 'impenetrable' jungle had much to do with the incessant British retreats over some 500 miles down to Singapore island.

In air power terms, the appreciation of the overall capability of the adversary air force is cardinal to the effectiveness of the employment of own forces. One's own air forces must only be made to contest control of the air after careful consideration of the prevailing situation and the adversary's capability to retain it. Further, the level of control required should be tailored according to one's own force's relative strength as compared to the adversary's air forces. In an obtuse manner here Sun Tzu is also indicating that the commander must be able to recognise not only the time and place where favourable air situations must be obtained, but must also identify the areas where the adversary opposition will be the minimum so that this weakness can be exploited at an opportune moment. A skilful air commander will be able to appreciate the situation and decide the course of action which may even be to recommend the postponement of operational action. This may necessitate not obtaining the desired level of control of the air vis-à-vis the adversary intent and capabilities. This is a far more responsible action than a decision to employ the air forces in an unequal struggle that they are sure to lose.

Maintaining the cohesion of an air force requires adherence to the tenet of centralised control and decentralised execution

Superior leadership in employing air power requires professional mastery of a very high order

Air power application must be tailored according to the relative capabilities of the adversary to ensure success

Conclusion

Throughout the treatise, Sun Tzu draws a common thread regarding the need to estimate the adversary capabilities, the requirement for comparative analysis, identifying the weaknesses—both of own and adversary forces as well as those of the commanders—and the critical importance of knowledge and vision to military success. In very general terms the six flaws of the commander, outlined in this subsection, can be grouped into three sets—poor decision-making abilities, inability to manage correctly the human factors or people issues within the force, and mismatch in capability and communications between the higher and middle level leadership. Sun Tzu exhorts all commanders to be aware of these pitfalls, which if not studied, understood and avoided, will surely bring failure to the force.

Superior Leadership

Situational Positioning is an aid to Strategy.

A Superior Leader who follows the Tao,
Evaluates the opponent's formula for triumph
Calculating the difficulty and distance of dangers and obstructions.

Those who employ this knowledge
Will surely be victorious;
Those who do not employ this knowledge
Can be certain of defeat.

The situational positioning in relation to the natural formation of the country is a potential source of assistance in battle. Sizing up the opponent's strategies and shrewdly calculating difficulties, distances and dangers in overcoming them is the proper course of action for commanders. Those who go into battle with such knowledge, and put the knowledge into practice, will surely be victorious. Those who do not, are certain to be defeated.

After describing the generic situations that will prevail in a conflict and the six strategic mistakes that can be attributed to commanders which will result in the defeat of the force in different ways, Sun Tzu now turns to the characteristics of leadership that will lead to victory. The leadership section has two parts—one dealing with the duties of the commander and the other with the art of command itself.

The situational position, if well understood with all the implications of its nuances, can be a potential source of assistance—it can be manipulated in one's own favour—in a conflict. Utilising the situation to improve one's existing position is in keeping with Sun Tzu's basic axiom that all strategy must be oriented to advancing one's own position in the long term. In the following stanzas Sun Tzu enunciates the distinct connection between victory and professional mastery of the commander, having already covered generic leadership mistakes to be avoided.

The Opponent's Strategy

It is critically important for the commander to be well versed in assessing the potential resident in the adversary that makes them think that they will be victorious, for only if they believe that they will be victorious will the adversary embark on a conflict. Knowledge regarding their history, culture, available resources, combined capability and operational concepts will help in identifying their possible weaknesses and predicting their possible course of action. Simultaneously, the commander should also be calculating the difficulties—physically in terms of distances and obstacles, and metaphorically in terms of virtual dangers like superior capability and unfathomable strategies—that will either slow one's own force's progress, place them in danger or even deny victory. Only a combination of the two abilities will assist in formulating and executing an appropriate strategy. Sun Tzu is clear that only commanders who are competent in both these activities—carrying out accurate assessments and employing the knowledge so gained—will be victorious. The primary duty of a commander is to be victorious under all circumstances and, therefore, it is critical for the commander to be proficient in the art of assessment and the science of the employment of forces within a well-formulated strategy in anticipation of adversary manoeuvres.

The source of all erroneous views on war lies in idealist and mechanistic tendencies. People with such tendencies are subjective and one-sided in their approach to problems. They indulge in groundless and purely subjective talk, basing themselves upon a single aspect or temporary manifestation [and] magnify it with similar subjectivity into the whole of the problem. Only by opposing idealistic and mechanistic tendencies and taking an objective all-sided view in making a study of war can we draw correct conclusions on the question of war.

Mao Tse-Tung, 1893–1976
Selected Military Writings

The first element of superior leadership that Sun Tzu mentions is professional mastery of the environment in which the force is operating. The underpinning factor in creating the necessary level of professional mastery is the absolute knowledge of the capabilities of one's own forces within the prevailing situation. Based on this and the professional assessment of the adversary intentions and strategy for victory, the shrewd commander will formulate the strategy to be employed.

In the case of air power this will involve understanding the requirement to achieve the strategic goals of the air campaign, prioritised according to the joint campaign objectives. The first priority obviously would be to obtain and maintain control of the air over

the designated area for the stipulated duration. The second would be the careful and optimum use of scarce air assets that may require redeployment to meet diverse demands. A commander also needs clear vision to successfully carry out simultaneous operations to obtain control of the air in different areas or even theatres with the same assets. Air commanders must have professional mastery of a very high order in order to achieve the correct prioritisation of the employment of air power to ensure that the effects so created are completely aligned with national strategic objectives. Sun Tzu is very clear that only commanders with adequate 'professional mastery' who have the competence to effectively use the knowledge and expertise that they possess will be able to lead the force to certain victory, with those who lack either or falter in their implementation being sure to face defeat.

Professional mastery is underpinned by absolute knowledge of the capabilities of one's own forces

Successful strategy can be devised only after carrying out a realistic comparative analysis of own and adversary capabilities

Prioritisation of campaign goals must be in alignment with national strategic objectives

When the Tao of challenge is certain triumph,
Yet the Sovereign forbids a challenge,
Fight;

When the Tao of challenge is certain defeat,
Yet the Sovereign orders a challenge,
Do not fight.

The One who advances without seeking fame,
Who retreats without avoiding blame,
The One whose aim is the security of the People
And service of the Sovereign,
Is a Jewel of the Realm.

If the situation is one of certain victory, even if the government prohibits entering into conflict, it is appropriate to engage. If the laws of war do not indicate victory, but the government has ordered battle, it is appropriate for the commander to refuse. The commander who advances without seeking glory, retreats without avoiding blame, and whose only purpose is to promote the best interests of the government and protect the country is to be prized in any nation.

The Ideal Commander

This stanza is about the primary duties of military commanders and their relationship with the government and the people or nation at large. It is clear that, even during Sun Tzu's time, there were tensions between the sovereign and the military commanders and that, at least during times of war, an upright and skilled commander exercised a strong enough authority that could effectively question and at times even overrule the orders of the 'government'—the basic presumption being that the commander always kept the security of the people and the national interests paramount. Sun Tzu believed that the responsibility of committing a force to conflict must devolve on the commander alone. He states very clearly that the duty of a commander is victory and the ideal commander's ethic—the selfless fulfilment of one's duty.

There are two very important leadership traits that are implicit in this stanza. First is the commander's ability to assess the probability of victory in a given situation and further analyse the overall impact of a particular battle or campaign on the grand strategic

objectives to be achieved. This requires a very high level of professional mastery of the strategic conduct of operations. The second is the moral courage required to carry out whatever actions are required to ensure national security. The greatest commanders display such courage even if it means disobeying the orders of the government. They either keep away from a conflict that cannot be won or enter it based on their own calculations regarding not only the assurance of victory, but also the broader impact that such an action will have on the successful culmination of the campaign or war. A combination of the two is the acme of holistic professional mastery at the strategic level of command. Tempered clearly with the broadest ideal of ensuring the security of the people and sovereignty of the nation, these characteristics will make a commander irresistibly upright and a person of great stature.

In a democratic nation, wherein the military forces are by constitutional law subservient to the civilian authority, this kind of a decision—one that will definitely lead to a stand-off between the civilian and military leadership—has the potential to divide a nation already under the strain of a war. To a lesser degree, in terms of impact on the nation, it will also have personal repercussions for the commander involved. Therefore, it is incumbent on commanders at the highest strategic level to be aware of the impact of their actions on national security while exercising their professional mastery and moral courage. There is of course no doubt that such commanders are the foundational inspiration for the military forces to perform their duties and should be considered national assets.

Professional mastery and moral courage in commanders are not characteristics unique to any one Service; nor can it be envisaged that commanders of one or the other Service will require them more or less. Professional mastery is the result of a well-planned training and development program that includes not only military training, but also the opportunity and requirement to pursue independent and individual academic studies. Moral courage—although existing within the realm of professional mastery—is a trait inculcated in a commander over a period of time and cannot ever be tested for its veracity other than in actual conditions. It is incumbent on each generation of commanders to ensure that the next generation is developed in such a way as to have even greater moral courage than the previous ones. In the prevailing international security environment, anything less will lead to a spiralling deterioration of military ethics and erode the moral right that democratic nations claim in employing their military forces in the pursuit of national security.

Moral Courage

The dialogue between the Air Force and the ADO (Australian Defence Organisation), and the Air Force and the Government, requires Air Force's people to have the moral courage to provide honest advice, even when they are aware that such advice might be unwelcome or has the potential to become politicised. Exercising moral courage is fundamental to fulfilling our obligation to the Australian people and the Government, and underpins the professional responsibility that forms part of the performance of our duties. Dialogue with the ADO and the Government is founded on their acceptance that the Air Force will accord the highest degree of professional judgement to air power and space power matters that are key to Australia's security. This includes advice on force development, managing force transition to new capability, long-term strategic planning issues and the provision of relevant and realistic air options in response to crises and emerging conflicts.

Moral courage bolstered by professional mastery allows personnel to make decisions in complex circumstances where information is imperfect, and adapt their approach as situations evolve. These decisions must be guided by career experience and based on a thorough, contextualised assessment of all known factors. Decision-makers must be prepared to take responsibility for the consequences of their decisions, even when they have been proven incorrect or harmful. These qualities are essential for decision superiority and the conduct of operations in an environment characterised by uncertainty and ambiguity.

[Ref: AAP 1000—D—*The Air Power Manual*,
Air Power Development Centre, Canberra, 2007, pp. 27–28]

Commanders must have absolute confidence in their professional mastery for them to be able to exercise their moral courage without fear or favour. The reputation of the military forces, and by extension that of the nation itself, is completely dependent on the professionalism, courage and fortitude of its military commanders. In contemporary scenarios, this transcends the current battle or war being fought and is an ever-present yardstick by which a nation is judged. It will be a wise nation that treasures its military and its commanders.

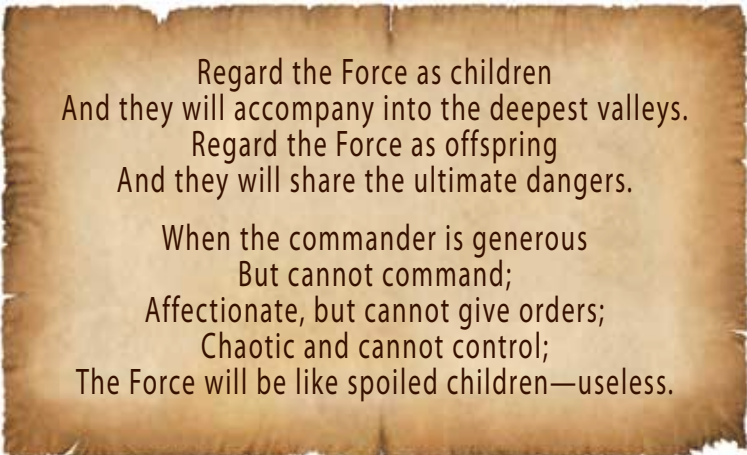
Sun Tzu teaches that, in times of war, there will always be internal pressures on the military commander, at times a national clamour for tangible victories. The diligent commander will not succumb to these pressures and seek battle—that has no influence on the final outcome of the war—purely to enhance the prestige of the force or the nation. Professional mastery and moral courage is necessary first to understand and accept that all battles and campaigns cannot culminate in victory and then to identify and delineate the ones that can be won and the ones that will lead to defeat in a long-term perspective. This is the mark of a true commander.

Professional mastery and moral courage are two primary characteristics of a great military commander

Commanders must take into account all factors and the impact of their decisions before considering actions contrary to the government's directives

Moral courage is an intangible quality in a commander that can only be tested in actual conditions of war

The Art of Command



Regard the Force as children
And they will accompany into the deepest valleys.
Regard the Force as offspring
And they will share the ultimate dangers.

When the commander is generous
But cannot command;
Affectionate, but cannot give orders;
Chaotic and cannot control;
The Force will be like spoiled children—useless.

Be compassionate. When a commander regards and treats the soldiers as infants they will follow him to the deepest valley; when they are looked upon as beloved sons they will willingly die in battle. Treat them well; they will deliver their utmost power. Never overindulge subordinates. If a commander is indulgent with his soldiers but unable to make his authority felt, kind-hearted but unable to enforce commands, and incapable of quelling disorder, then the soldiers are like spoilt children—useless for any practical purpose.

Command Ethos

Leadership and the art of command are intangible elements that are intertwined and critical to the success of the force. Sun Tzu offers a few implicit ideas regarding the art of command in the first part of the stanza. First, he emphasises that if the force is looked after with affection—like small children—they will reciprocate by being loyal to the commander. Commanders must carefully consider the impact of their decisions on the troops before deciding on a course of action in combat. The troops will then follow without hesitation. Second, the commander must be able to lead with magnanimity and must be aware of what needs to be done, and when, in order to ensure success in all encounters with the adversary. Commanders must be able to create trust throughout the force. It is seen that forces that are led by strong leaders are strategically more united and perform well in adverse situations. Third, commanders must understand that their decisions can have devastating effect on individual soldiers—because they trust the commanders' decisions enough to risk their lives in following them. The responsibility to make the right decisions is very great and cannot be taken lightly.

The other part of the stanza is a direct warning that if the commander truly cares about the welfare of the troops, then discipline must be enforced within the force to ensure that the troops will always do the right thing. Sun Tzu explains that the next step in effective command is to limit the indulgence of the troops to a level where orders will always be obeyed. This is a fine balance. It requires the supreme commander to set up a broad framework within which the subordinate commanders can then function effectively. A good commander will delegate both authority and responsibility downwards while retaining an oversight role. Such a commander will not be averse to enforcing discipline within the force as required, and will have the moral courage and authority to remove subordinates who are incapable of performing at the required efficiency. A force that is led by commanders who do not have the capability to ensure discipline and lack the moral courage to enforce orders will be useless in combat.

The central feature of the 'exterior manoeuvre' is to assure for oneself the maximum freedom of action while at the same time paralyzing the enemy by a multitude of deterrent checks, somewhat as the Lilliputians tied up Gulliver. As with all operations designed to deter, action will of course be primarily psychological; political, economic, diplomatic and military measures will all be combined towards the same end.

The procedures employed to achieve this deterrent effect range from the most subtle to the most brutal: appeal will be made to the legal formulae

cont.

of national and international law, play will be made with moral and humanitarian susceptibilities and there will be attempts to prick the enemy's conscience by making him doubtful of the justice of his cause. By these methods, opposition from some section of the enemy's internal public opinion will be whipped up; the result will be a real moral coalition and attempts will be made to co-opt the more unsophisticated sympathizers by arguments based upon their own preconceived ideas.

It is a point worth noting that, just as in military operations one captures a position on the ground and thereby denies it to the enemy, on the psychological plane it is possible to take over abstract positions and equally deny them to the other side.

Andre Beaufre
Introduction Strategy, 1963

The art of command varies at the operational level in different Services, mainly because of the differences in the operating environment, equipment and mission details. However, as the level of command goes up, these differences narrow down and at the grand strategic level they do not exist at all. Further, even at the operational level, the basic concepts of caring for the troops and enforcing discipline at all times in a humane manner are common foundations for all Services. The art of command has increased in complexity over the years and in contemporary military forces, command is perhaps the most difficult aspect of warfighting. Therefore, it is incumbent on the military forces of a nation to nurture and develop leaders carefully at all levels of command during times of relative peace, because success or failure in the battlefield will definitely rest on the capabilities of the commanders. Commanders, irrespective of their Service and level, must be courageous, credible, humane, and professional masters of their domain. Only these traits will ensure that contemporary troops—who are themselves technical masters of their profession—follow orders and fight to win battles, campaigns and wars even under very adverse conditions.

Commanders must be able to lead with magnanimity, fully understanding the devastating effect their decisions can have on individual soldiers

Commanders must have the moral courage and authority to enforce discipline within the force

The military should nurture and develop commanders in peacetime to ensure victory in war

If we know our Force is able to confront,
But do not know if the opponent is vulnerable,
We are but halfway to triumph.

If we know the opponent is vulnerable,
But do not know our force is not able to confront,
We are but halfway to triumph.

If we know the opponent is vulnerable,
And know our team is able to confront,
But do not know Situational Positioning,
We are unable to challenge
Because we are still halfway to triumph.

If the commander knows that the soldiers are capable of attacking, but does not know whether the enemy is vulnerable or not, there is half a chance of victory. If the commander knows that the enemy is vulnerable, but does not know if his own soldiers are capable of making an effective attack, there is half a chance of victory. If the commander knows the enemy is vulnerable and his own soldiers are capable, but does not know if the lay of the land—adversary force disposition—is suitable for combat or not, there is only half a chance of victory.

Knowing the Enemy

In this stanza Sun Tzu very clearly states the factors that commanders must know and the actions that they must carry out to ensure victory in conflict. First, is the ability to identify the adversary's weaknesses and strengths through diligent analysis and to predict their vulnerability to attack. Even when one's own forces are capable of conducting a credible attack, ignorance regarding the adversary's vulnerability can only provide 50 per cent assurance of victory. Second, is the knowledge required to understand the capabilities and current status of one's own forces in relation to an adversary that has already been analysed as vulnerable. In this case also, the chances of victory are only 50 per cent if there is uncertainty regarding the capability of own forces. Third, the situational positioning must be understood before victory can be achieved, even when one's own forces are known to be ready to attack, and the adversary's weaknesses have been identified and are seen to be vulnerable. Lack of knowledge of the situation will also reduce the chances of victory to 50 per cent. Successful strategies are based on adequate

situational knowledge, a clear understanding of both one's own and the adversary's forces, and the ability to carry out accurate comparisons of their relative strengths and weaknesses. Lack of any of the three basic requirements in the commanders will invariably lead to the chances of victory being halved.

The art of command is fundamentally based on knowledge—of one's own capabilities; the adversary's strengths, weaknesses and vulnerabilities; and the relative positions that the forces occupy. In contemporary conflict scenarios, this is strategic situational awareness. However, in these scenarios the commander is normally inundated with information and faces the very real risk of information overload. It is therefore necessary to have a robust system of filtration to ensure that the commander is provided with the necessary information to make correct decisions, but not overloaded with unnecessary details. In contemporary conflict, knowledge is central to effective command. It is therefore necessary for commanders to be versatile in the application of their professional mastery to retain the knowledge edge even when faced with conflict situations wherein only partial information is available. Essentially, this amounts to adequate situational awareness at the strategic and operational levels. Once again, this stanza is applicable to all three Services and command at all levels. Command in war is a complex undertaking.

*Strategic situational awareness in conflict is based on three
fundamental inputs:*

- adversary capabilities and vulnerabilities,*
- realistic assessment of own capabilities, and*
- relative positional situation*

Knowledge is central to effective command

*Professional mastery is essential for commanders to retain the
knowledge edge in conflict*

The Wise Warrior understands Strategy
Moves without delusion and progresses without
tiring.

Hence the saying:
'Know the enemy and know yourself:
Triumph is never in doubt.
Know Nature and know the Situation:
Victory is complete.'

Therefore, when those experienced in war move, they make no mistakes; when they act their resources are limitless. So it is said, 'Know the enemy, know yourself; your victory will never be endangered. Know the ground, know the weather; your victory will then be total.'

Sun Tzu concludes the chapter by stating that sophisticated and skilled commanders, who know their own forces and understand the strategy of warfare, will be able to act without confusion and take limitless action when necessary. This is a statement regarding the confidence of the commanders on their decision-making skills and their ability to anticipate the future better than the adversary. In essence, the commander must be able to make decisions that have a higher probability of success than the adversary. This is important because Sun Tzu also teaches that attacks can fail and that a planned campaign may not work exactly as envisaged. Sun Tzu provides a very direct method to analyse and evaluate the situation and then to choose the right course of action—that of assessing relative strengths and the prevailing environment. This is applicable at the strategic and operational levels of war.

Victory is assured when the commander is fully knowledgeable regarding the strengths and weaknesses of one's own forces and also that of the adversary, permitting the identification of the centres of gravity that should be neutralised. Decisions made considering only these two factors in isolation could result in large losses to one's own forces or the expenditure of resources far in excess of the advantages gained from the victory. Sun Tzu therefore exhorts all commanders to be knowledgeable of the environment—terrain, weather and other extraneous factors—to ensure that victory is achieved with minimum effort and loss. The environment is not only physical, but a combination of time and place, situational positioning and risk assessment regarding the resource requirement. When this assessment is also completed and swings in one's favour, victory will not only be assured, but achieved in optimum conditions.

If you concentrate exclusively on victory, with no thought for the after-effect, you may be too exhausted to profit by the peace, while it is almost certain that the peace will be a bad one, containing the germs of another war. This is a lesson supported by abundant experience.

B. H. Liddell Hart
Strategy, 1954

From a contemporary air power perspective, the stanza very clearly indicates the need for professional mastery at the command level to retain the flexibility necessary to manoeuvre the force seamlessly and yet be able to have the capability to offer multiple courses of action—all of which will be successful, if employed. The assurance of victory if the strengths and weaknesses of own as well as adversary forces are known, translates to being able to tailor the air campaign objectives according to the relative strengths. This could mean that under certain circumstances the level of control of the air that can be achieved will be constrained in time and place, but will still be an assured ‘victory’. The underpinning caution that strategic situational awareness is necessary for complete victory means that the employment of air power will need to be fashioned in such a way as to have adequate control of the air at all places and times that one’s own forces require. The key to this is the versatility of air power itself buttressed by professional mastery of the air commander.

Victory is assured when the commander’s knowledge is complete
Knowledge must encompass both the physical and virtual environments
A commander must have the necessary level of professional mastery to
retain the flexibility of air power to provide multiple
options to the government

Conclusion

This chapter has two clear parts, one that deals with the importance of strategic situational awareness and the other with issues and challenges of command in conflict. Metaphorically, the 'situational position' vis-à-vis the topography of the battlespace to which Sun Tzu refers, could also be understood to encompass, at different levels, the strategic shaping of the destiny of a state, the environment and the battlespace. He also lists and explains the many character flaws of which a commander should be aware so that they can be avoided, while enumerating a number of elements that contribute to the success of a commander.

Military leadership is at best a complex enterprise, made more difficult by the necessity to place a single individual at the apex of every military venture. While a number of characteristics contribute to the development of a skilled commander, two of the most important are professional mastery and moral courage. These are primary essentials for a commander to succeed in any situation. There is a viewpoint that considers moral courage as a vital ingredient to professional mastery, but it merits a separate explanation because of its overarching importance as an essential character trait in commanders.

Moral courage is an intangible quality that can never be tested except in actual conditions. Therefore, whether or not a commander possesses the necessary moral courage will only become apparent when the need arises to exercise it. Failure of a commander in this aspect would always lead the force into a calamitous state, the consequences of which will depend on the level of the commander who failed. On the other hand, professional mastery can be developed, tested and refined to ensure that commanders at the operational and tactical level have adequate professional mastery of the level required. This process becomes a bit more complex at higher levels as strategic level professional mastery is a truly multifaceted capability and individuals who aspire to such mastery need to be extremely well developed in a number of unconnected areas of expertise and knowledge.

A third element that affects the performance of a military commander is knowledge. Knowledge, while an innocuous term in normal usage, encompasses a number of sub-elements when it is employed to denote a military commander's capability. Knowledge in this case is a judicious mix of situational awareness, professional mastery, understanding of the relative capabilities of the opposing forces and a clear focus on the strategic objectives of the campaign. It must be mentioned here that these are the major inputs to a commander's knowledge base in times of conflict and there are a number of minor, but important ones not listed here. The essential requirement is for a commander to always have a knowledge edge over the opposing commander, thereby being able to anticipate, counter and defeat all adversary manoeuvres. Effective command is centred on knowledge.

The conduct of an air campaign is an involved process and its success depends to a great degree on the commander's ability to be a visionary planner capable of developing a sophisticated strategy that the operational elements will be able to execute effectively. The air campaign must be fully aligned with the joint campaign plan. The prioritisation of the air campaign objectives must take into account the grand strategic objectives and must be coordinated through a strategic situational awareness that is commonly shared with other elements of national power. Control of the air, with all the caveats placed on it in terms of time, place and duration, will remain the primary objective and responsibility of the air force while executing an air campaign. The criticality of control of the air to the success of the overall campaign is considered to be well understood and is not being belaboured here.

Through the ages, conflict has always been ever changing. It is this nature of conflict that has been the focus of attention of all strategists, warfighters and students alike. The dynamism of a conflict also means that even an extremely well-formed defensive position will gradually erode because of its static nature. All winning forces are in a state of constant manoeuvre or realignment at all times. Such movements underpin their victorious status. Air power provides the joint force with the ability to dynamically shape the battlespace—asymmetry that can alter the outcome of a battle or campaign—to support the deceptive aspects of a broader strategy, and to create coercive deterrent effects when needed. The inherently offensive nature of air power makes it a capability that no commander will want to do without in a contemporary conflict scenario.

A balanced air force that can create strategic effects in direct support of national security objectives, centrally controlled at the strategic level, is worth its weight in gold when the nation has to go to war.

Strategic Situations

Decision Superiority

This chapter is the longest in the entire treatise and is mainly concerned with how forces can be manoeuvred in different 'situations', a combination of terrain and circumstances, as opposed to the description in previous chapters of the obstacles and advantages that different types of ground present to the forces. This and the next two chapters are focused on the conduct of operations and, therefore, have been written at the higher operational level. However, the maxims and explanations are such that they are readily transformed into the strategic level of conflict and leadership. The attempt here has been to extrapolate Sun Tzu's advice to the primary functions of air power at the strategic level within the ambit of a joint campaign.

Considering that Sun Tzu compiled the tenets nearly 2300 years ago, his preoccupation with the impact of the physical level of the terrain in manoeuvring the forces is understandable. By the same token, the

stanzas in this chapter are open to a number of interpretations, especially when Sun Tzu's concepts are superimposed on a contemporary conflict scenario. Up to this point in the treatise Sun Tzu's rules, advice and discussions have been in regard to the preparation for conflict, with a great deal of emphasis on the use of deterrence to avoid open conflict as far as possible. This chapter now delves into the realm of actual combat operations and describes nine classic situations that determine the nature of all conflict and explains the criticality of superior leadership in achieving victory.

This chapter also describes the paramount importance of speed and tempo in military operations and the critical need for the commander to identify the centres of gravity of the adversary and have the ability to exploit them fully without dissipating one's own forces. In the contemporary conflict scenario, this amounts to the strategy to conduct effective offensive campaigns.

Although the literal translation of the chapter's title is 'Nine Grounds', in Chinese, 'ground' is also a euphemism for physical condition or situation. The chapter describes how forces must be manoeuvred through nine distinct, but commonly encountered strategic situations that must have been all encompassing in Sun Tzu's time. At a philosophical level, each situation is a strategic challenge and demands a particular strategic response. The purpose of studying them is to be able to respond rapidly to emerging situations. Sun Tzu has presented the situations in the order in which they probably will occur during a military campaign, with each subsequent situation becoming more difficult and complex as the campaign progresses.

This chapter emphasises three elements in the conduct of a campaign; rapidity in decision-making, conduct of offensive manoeuvre and the leadership traits that successfully combine these. Sun Tzu not only logically analyses the strategic system as a deliberate process that emphasises the advantages of correct 'positioning' but also explicitly states that victory in conflict is completely dependent on the speed and aptness of the commander's decision-making ability. Therefore, understanding the strategic situations is only an aid to decision superiority, which is critical to victory.

As in the previous chapters that delineate the strategic art of warfare, even in this chapter Sun Tzu explains the art of command in conflict. It is apparent that the commander's ability was the fulcrum around which the success or failure of an operation depended—a truism as valid in contemporary conflict as in Sun Tzu's time. The connection between decision superiority and the commander's skill and professional mastery is undeniable and is the linchpin to the success of any military campaign.¹

¹ A number of commentators and translators have opined that this particular chapter is long, disorganised and at times repetitive. Lionel Giles points out that, 'One would like to distinguish the Nine Kinds of Ground from the Six Forms of Terrain of Chapter 10 by saying that the Six Forms refer to the natural formation or geographical features of the country, while the Nine Kinds have more to do with the condition of the army, being "situational" as opposed to "grounds"'. But it is soon found impossible to carry out the distinction. Both are cross-divisions, ... while in the present chapter there

The Boyd Cycle

Named for Col. John Boyd, the term refers to the understanding that war consists of the repeated cycle of observation, orientation, decision, and action. Colonel Boyd constructed his model as a result of his observations of fighter combat in the Korean War. He had been investigating why American fighter pilots had been consistently able to best enemy pilots in dogfights. His analysis of opposing aircraft led to some startling discoveries. Enemy fighters typically outperformed their American counterparts in speed, climb and turning ability. But the Americans had the advantage in two subtly critical aspects. First, the hydraulic controls allowed for faster transition from one manoeuvre to another. Second, the cockpit allowed for a wide field of view for the pilot. The result was that American pilots could more rapidly observe and orient to the tactical situation moment by moment. Then having decided what to do next, they could quickly change manoeuvres. In battle, this ability to rapidly pass through the observation-orientation-decision-action loop (the Boyd cycle) gave the American pilots a slight time advantage. If one views a dogfight as a series of Boyd cycles, one sees that the Americans would repeatedly gain a time advantage each cycle, until the enemy's actions become totally inappropriate to the changing situations. Hence, the American pilots were able to 'out-Boyd cycle' the enemy, thus outmanoeuvring him and finally shooting him down. Colonel Boyd and others began to question whether this pattern might be applicable to other forms of warfare as well.

Robert R. Leonhard
The Art of Manoeuvre, 1991

is even greater confusion.' (Ref: Lionel Giles, *Sun Tzu on the Art of War*, Graham Brash, Singapore, 1988, p. 114.) The chapter shows definite signs of having been assembled from disjointed fragments from various inputs and thought processes, and is at times extremely dense when interpreted, rather than translated, as this book attempts to do. However, in this book no effort has been made to rearrange the order of the verses and the author has also retained the generally accepted translations of the text.

The Nine Situations

Sun Tzu said: In executing an Artful Strategy,
There are Situations that are:
Scattering, Simple, Disputed, Open, Intersecting,
Dangerous, Obstructed, Surrounded, and Deadly.

When other leaders challenge from their own territory,
The Situation is Scattering.

When the force enters the territory but not deeply,
The Situation is Simple.

When the advantage is offered to either side,
The Situation is Disputed.

When each side can come and go freely,
The Situation is Open.

When the first one to reach the dependent domains
Can have mastery of the empire and its multitudes,
The Situation is Intersecting.

When the force enters and penetrates deeply
With many fortifications behind them,
The Situation is Dangerous.

When the path runs through mountains, forests, passes, or marshes
Where the way is generally difficult
The Situation is Obstructed.

When the approach to a location is narrow and the return is circuitous,
And a small number of others can counter our larger numbers,
The Situation is Surrounded.

When a swift challenge is necessary for survival
And even a delayed challenge results in extinction,
The Situation is Deadly.

The art of war recognises nine classic strategic situations: scattering, simple, disputed, open, intersecting, dangerous, obstructed, surrounded and deadly. Where a commander is fighting inside his own territory the situation is scattering; when the adversary's land is shallowly penetrated it is simple; when the possession of the territory imports great advantage to either side it is disputed; when each side has liberty of movement it is open; when a state is enclosed by three other states, the first to gain control of it and gain the support of the majority of neighbouring states, it is intersecting; when the

force has penetrated deep into the adversary's land, leaving behind many enemy fortifications that can challenge from the rear, it is dangerous; when the force encounters obstacles like mountains, swamps and forests, and the way is difficult, it is obstructed; when access is constricted, exit is circuitous and a small force can strike a larger one, it is surrounded; and when the force survives only if it fights with the courage of desperation, the situation is deadly.

In the first stanza of the chapter Sun Tzu lists and then defines the nine classic strategic situations that will generally be encountered in the process of offensively manoeuvring a force. These are not physical positions as discussed in the previous chapter, but indicators of how the conflict will develop with time. The nine situations together combine and describe three factors that impact all offensive campaigns—the conflict environment, the planning and execution of the offensive, and one's own capabilities relative to the adversary. Good strategy requires that a commander is able to respond comprehensively to any emerging situation. The first requirement to formulate a successful strategy is for the commander to identify the situation. Since all conflict situations are complex, it will be necessary to analyse and break them down to the basic elements to identify clearly the situation and understand the state of progress of the force within it. Sun Tzu provides definitions and explanations for each situation to assist this process.²

Scattering Situation

The first situation is 'scattering'. Sun Tzu used the term scattering to indicate loss of unity and focus in the force; a breakdown of cohesion. This is most likely to happen when the nation is invaded and the conflict takes place in one's own territory, and there are multiple, simultaneous threats to be countered. In this situation, the adversary is on the offensive and therefore has the initiative and also controls the tempo of operations. Further, multiple threats tend to scatter defensive actions. This is one of the fundamental reasons why a successful strategy is always built around the offensive. Defending one's own territory is the biggest challenge of a commander.

Defending one's own territory in air power terms involves the conduct of both active and passive air defence to start with and then waiting for the opportunity to initiate the offensive. Air power's flexibility can provide multiple responses simultaneously, thereby

² Since there are nine situations to be considered, and the explanations are somewhat lengthy, the structure of the explanatory text has been changed in this chapter to ease the reader's correlation of the two. For the next two stanzas, each situation has been expanded from the verse form and immediately thereafter provided with the air power related explanation. It is hoped that this will make easier reading and understanding.

reducing the probability of multiple threats diffusing the defensive actions. Even if no overall offensive campaign is planned, it is necessary for the air campaign to assume an offensive posture at the earliest opportunity to be able to provide comprehensive defence of the nation. This is unique to air power. The air commander should be able to discern the right time and identify the opportunity when the transition from the defensive to the offensive should be made. This needs adequate and timely situational awareness to ensure decision superiority at the strategic level.

Air power's flexibility can provide multiple responses simultaneously

Air campaign planning must always be offensive

The air commander must have adequate situational awareness to maintain strategic level decision superiority

Simple Situation

The second situation is 'simple'. At the beginning of an offensive campaign, when one's own force holds the initiative, has adequate resources and is psychologically well prepared, the situation is simple. Further, the force would not have gone very deep into adversary territory, thereby making the advance easy. If this is combined with the element of surprise, this condition will last longer and deeper penetration into adversary territory will be easier than otherwise. However, the commander should anticipate the oncoming change to the situation as the adversary forces mobilise and commence the defence of their territory.

Air power is perhaps the ideal military capability to assume the offensive at the outset of a campaign. In fact, pre-emptive air attacks, when planned and executed with panache and without losing the element of surprise, have been historically seen to provide the offensive force with an immediate advantage. In an offensive campaign the first quest must always be to establish control of the air, which will be easier and more sustainable over smaller areas as in this situation. Control of the air provides the joint force the necessary freedom of action to pursue broader campaign objectives. In the early stages of an offensive air campaign it will be easier to neutralise adversary's centres of gravity, considering that, in shallow incursions, air power will have lesser transit time and greater on-station time, maximising the element of surprise.

World War I – The Emergence of the Air Battle

Since the outset of the 'proper' counter air contest, The Royal Flying Corp's (RFC) strategy had been the pursuit of a strategic air offensive against the German Air Service. Offensive patrols went deep into German territory, often 10-15 miles behind the lines. Attacks were made on the German aircraft wherever and whenever they were encountered including the bombing of enemy aerodromes. While the basic aim of this offensive was to maximise German losses, the more immediate reasons [sic] was the need to allow observation aircraft 'elbow room' to support the ground forces without enemy interference. Thus the RFC was engaged in an air freedom and air denial contest.

AAP 1000—*Fundamentals of Australian Aerospace Power*,
Aerospace Centre, Canberra, 2002, p. 164

Further, the air defences of the adversary would not be at their peak performance, at least in the initial phase, thereby providing one's own offensive capabilities a greater opportunity to optimise their attacks. An astute air commander will therefore concentrate on strategic strikes that will have long-term effects on the adversary's war-making capacity during this stage of the campaign, especially since adversary defences can be expected to improve with time. A simple situation can be subdivided into different phases dependent on the progress of the campaign. Commanders will require decision superiority to establish the priorities and, more importantly, to identify the appropriate time to transition from one phase to the next. Decision superiority is once again the key to achieving the optimum advantage in this situation.

Successful pre-emptive air attacks invariably give the attacking force an advantage

Control of the air must be the first priority in any air action

Decision superiority is essential for commanders to conduct a successful air campaign

Disputed Situation

The third situation is 'disputed'. When the adversary has the same advantages as one's own force and will therefore contest every move, the situation is disputed. This concept is also aligned with Sun Tzu's ideas on strengths and weaknesses. The commander must carefully analyse the adversary dispositions to identify their weaknesses while consciously keeping one's own weaknesses hidden from the adversary. In disputed situations, conflict is inevitable, irrespective of who makes the first move. Therefore, a commander must be aware of the very limited influence that can be brought to bear on controlling the situation. Disputed situations invariably are resource intensive to contain.

In air power terms the disputed situation is what could be termed as having 'air parity'. In this circumstance obtaining absolute control of the air is not a possibility. A commander will have to be content with achieving adequate control of the air to ensure interference-free operations for one's own air and surface forces for a designated mission or operation. It is not an easy task to maintain control of the air when faced with an equally capable air force and will always involve having to fight for it. In this situation, the commander's decision-making ability is critical to the success of the air superiority campaign, especially since it must be launched with a sufficiently high level of assurance of success. This would mean that the adversary's weaknesses and vulnerable points must not only be known, but carefully exploited through the air commander influencing the joint campaign planning process to maximise the strengths of one's own air forces. 'Disputed' is one of the more contentious situations and requires careful planning, adequate situational awareness and highly developed decision-making abilities from the air commander to be effectively executed.

Control of the air was essential to every major military operation. Control of the air allowed surface vessels to sail the seas as far as that control extended, even within range of enemy land-based airplanes. Control of the air permitted amphibious landings at any point where that control could be assured. Control of the air permitted close air support to ground forces, the effectiveness of which was decisive wherever fully employed. Control of the air over lines of communications [blocked enemy interdiction of them] and preserved them to ourselves. Control of the air over the Japanese home islands permitted the destruction by long-range bombers of such of her industries and cities as we chose to attack. The first objective of all commanders in the Pacific War, whether ground, sea or air, whether American, Allied or Japanese, was to assure control of the air.

Major General Orvil A. Anderson, USAF
Deputy Director for Operations, Eighth Air Force, in World War II

When air parity exists, control of the air must be qualified in terms of time and space

When faced with an equally capable air force, maintaining control of the air will require constant combat operations

Joint campaign planning process must encompass the strengths of one's own air force

Open Situation

The fourth situation is 'open'. In an open situation all forces involved can make progress without impinging on each other and thereby avoiding conflict. However, a commander must bear in mind that easy progress does not automatically translate to a force achieving its strategic objectives and victory. The situation only provides an environment where manoeuvres are easily conducted, but this does not create an advantage because the adversary is also able to manoeuvre at will. Open situations are dynamic and there is a constant risk of one's own strategic situation being degraded unless the position of the force is constantly advanced. A commander's acumen in observing the adversary manoeuvre to always stay ahead is critical to success in this situation.

In air power terms, this is essentially a pre-conflict situation wherein the forces are being positioned to ensure advantage. It requires sufficient surveillance of the adversary to be carried out in order to determine their dispositions and subsequently deploying one's own forces not only to counter them, but also to be in a position to exploit their weak areas. However, in doing this the air commander has to bear in mind three factors—that the air campaign plan must be aligned with the strategic objectives of the joint campaign; that the adversary also has the same freedom of manoeuvre as one's own forces; and that the manoeuvring of the forces must be a continuous process to ensure that initial advantages are not neutralised by the adversary. Although it is inherently dynamic in nature, the open situation provides an air commander who possesses adequate situational awareness with the opportunity to establish an unassailable position.

*The air campaign plan must be aligned with the strategic objectives
of the joint campaign*

*Situational awareness is of cardinal importance to ensuring one's
own positional advantage*

*Forces should be constantly manoeuvred to ensure that advantages
are not neutralised*

Intersecting Situation

The fifth situation is 'intersecting'. This situation dictates that even when one's forces have entered an area first, the attempt must be to create alliances rather than confrontations. Essentially, this is a situation wherein the strategic objectives of a number of disparate forces, some that maybe antagonistic to each other, are aligned with each other in this instance and by joining together as a coalition the cumulative strength is increased. Here the seizing of a 'key state' lets one assume the lead, making it easier to create a coalition unified by campaign aims that is advantageous to all parties. This will also increase the availability of resources. If seizing a key state is not possible, creating dependencies that permit one to assume the lead and building coalitions will be that much more difficult. By intersecting situations, Sun Tzu alludes to the strategic objectives of different forces being aligned, at least for the immediate campaign ahead.

Coalition Operations

In many cases coalition partners will have drawn on the same historical material, read the views of the same theorists and have access to similar technology. And yet their doctrine will be quite different. We need to remember that different cultures provide a different lens for viewing conflict and different doctrine may be the result. The challenge for everyone involved will be to recognise how these differences have influenced doctrine. Only then will coalition partners be able to adapt, to demonstrate the flexibility that is such an important part of aerospace power, and to work together as an integrated team. That will be the true test of professional mastery.

AAP 1000—*Fundamentals of Australian Aerospace Power*,
Aerospace Centre, Canberra, 2002, p. 247

Strategic air operations are ideally suited to contributing directly to seizing a 'key state', thereby creating a winning situation. However, air forces will have to consider a number of factors before agreeing to the formation of a coalition—doctrine, interoperability both in equipment and operational ethos, rules of engagement, tactical procedures and the contribution of each force to the coalition. Some of these factors are common to all military power, but some are unique to the application of air power. The air commander needs highly developed professional mastery to be able to function within a coalition while ensuring that one's own national interests are in no way compromised, especially in the application of the rules of engagement. In the application of air power, within the ambit of a coalition, holistic situational awareness—at the tactical, operational and strategic levels—is an absolute necessity for the commander to ensure that focus on national objectives is not lost. In the all-encompassing planning and execution of a coalition campaign, it is perhaps the air campaign that can get completely diffused, thereby increasing the chances of individual national requirements getting subsumed.

Air forces must consider a number of factors before forming a coalition

*Air commanders need a very high calibre of professional mastery
to operate effectively within a coalition*

*There is an inherent risk of the air campaign becoming diffused when
being planned and executed within the joint coalition campaign*

Dangerous Situation

The sixth situation is 'dangerous'. In an offensive campaign, when the force has advanced deep into adversary territory, it is almost certain that there will be many adversary towns and villages that will have been enveloped but not fully captured. As the force advances, these enclaves in the rear of one's own forces, could become areas of concentrations of force for the adversary and the situation will become dangerous. Sun Tzu advocates short and swift campaigns to ensure victory and this axiom once again alludes to the problems of a prolonged campaign. This stanza is also about the need for a commander to lay down an achievable strategic objective and a very clear course of action to follow, without which the campaign can become unfocused and meandering, the very opposite of a short and sharp campaign. This will result in failure without actually having been defeated in battle.

From an air power perspective, there are two aspects to this situation, both of which bring danger to the force. The first is the extent of penetration of the force, the range at which air power is operating to neutralise adversary's strategic centres of gravity. This range determines the total area over which one must exercise control of the air and be able to carry out other air power and joint tasks that, in turn, will determine the air effort required to be assured of success. The deeper one has to penetrate into adversary territory, the greater the chances of control of the air being contested, thereby increasing the effort required to meet the basic air power objectives. While distance has a distinctive impact on the security of the lines of supply for surface forces, air power has its own peculiar issues that impact long-distance campaigns. The need for force multipliers like air-to-air refuelling assets and the increase in the number of combat assets and operating personnel required to sustain the campaign are two major challenges in this situation.

The Shooting Down of U-2 flown by Captain Gary Powers

Even though the Soviet Union made its land borders virtually impenetrable after World War Two, the United States was able to use U2 aircraft to gather data on Soviet capabilities and deployments. In 1960 the Soviet air defences had determined that the U2s used a standard route between Pakistan and Norway. They then shot down [a U2B piloted by USAF Captain] Gary Powers and created a major international incident. To the Western air forces this affair initially suggested that well-prepared anti-aircraft defences would reduce the pervasiveness of air power considerably. It was only later that Western intelligence organisations discovered that the SA-2 Guideline missile that hit the U2 was the 14th to be fired at Powers' aircraft. 12 had missed altogether, and the 13th shot down a MiG 19 fighter aircraft that was trying to conduct an air intercept of the U2.

Ian MacFarling,
Air Power Terminology, Aerospace Centre, 2000, pp. 93–94

The second aspect is the duration of the campaign. Air power, in most forces, is finite and, therefore, has to be carefully conserved to ensure that sufficient quantum of capability is available at critical junctures in the campaign. Since there is always an element of uncertainty in the conduct of all military campaigns, which increases proportionately with the duration, the critical moments in a campaign, where the optimum and skilful employment of air power will tip the balance in one's favour, cannot always be prejudged. The obvious solution to this is to adhere to Sun Tzu's exhortation to ensure that campaigns are kept short and swift. The onus of responsibility on the air commander to conserve air power while also meeting the requirements of an ongoing joint campaign can become very heavy. Air commanders have to be able to take a broad

view of the joint campaign's strategic objectives and then allocate air power resources accordingly. For an air commander, decision superiority is crucial not only in this aspect, but also in determining the appropriate time and space to ensure control of the air for other operations to succeed unhindered.

The penetration required to neutralise the adversary's centres of gravity will determine the effort required to maintain adequate control of the air

Force multipliers can be double-edged swords

As far as possible, air campaigns must be kept short and swift

Obstructed Situation

The seventh situation is 'obstructed'. In every offensive campaign there is bound to come a time when difficulties arise in furthering one's advance. Every campaign is unique and the commander must carefully study the nuances of the one that is being embarked on, if success is to be assured. Only by having evaluated all possible obstacles, both physical and virtual, will the commander be able to adapt the strategy and thereafter the course of action to ensure that the required momentum of advance is maintained. A certain amount of slowing down must be expected and factored into the strategy, but the force must be capable of surmounting the obstructions to achieve the objectives.

In an air power context, obstacles are generally not related to the physical or geographical layout of the theatre. The greatest obstacle, in a virtual sense, is the offensive capability of the adversary's air power. Air campaigns are normally offensive in nature and the air commander's first quest is to establish control of the air. In most conventional conflicts this will be contested and, therefore, the campaign for control of the air may itself have to be conducted independent of the broader military campaign. While the concept of control of the air is universal, each campaign will be unique in terms of adversary capabilities, characteristics of the operating environment, and duration and a number of other strategic, operational and tactical nuances. These will have to be balanced by one's own capabilities in an optimum manner.

Optimising one's own capabilities and contextually applying sufficient air power to ensure victory could test the skills of the most professional of air commanders. Further, the commander will also have to make decisions regarding the allocation of air power resources to the simultaneous but disparate operational objectives that will have to be met in directly contributing to the joint campaign. Identifying the obstacles to the

smooth progress of the air campaign—both in terms of adversary opposition and own constraints—and thereafter overcoming them from within the capabilities of one's own force will require professional mastery of a high order and superior decision-making capabilities from the air commander.

*The greatest obstacle to the progress of an air campaign is the
adversary's air power capabilities*

*Each air campaign is unique in its characteristics and needs to be
planned and executed independently*

*Professional mastery and superior decision-making of the air
commander are vital to the success of the air campaign*

Surrounded Situation

The eighth situation is 'surrounded'. In the course of an offensive campaign there will be situations wherein the force will only be able to deploy limited resources to achieve a secondary, supporting objective but one that is crucial for the further advance of the force. Since the full strength of the force cannot be brought to bear in this instance, the deployed element of the force, essentially small, could become vulnerable. However, this is only a transitory stage and the objective must be achieved as rapidly as possible because a small element of the force can become trapped very quickly, significantly reducing the chances of their being able to succeed. In Sun Tzu's time, and even now, smaller surface forces could use the physical aspects of the theatre of operations to position themselves advantageously and thereby hamper the manoeuvre of a larger force.

This has a resonance for the employment of contemporary air power since in a number of cases a small force element will be required to cover a large geographic area within the broader theatre of operations. Air power achieves this by surrounding the theatre 'virtually' through responsive manoeuvring, rather than through long-term physical presence and encirclement. Smaller elements of air power, deployed further away from the main body, will find it difficult to maintain adequate control of the air for any protracted length of time and therefore must either be reinforced or withdrawn. As a corollary, a small force that has gained sufficient control of the air may be able to dilute the impact of a numerically much larger force. However, such a situation is not conducive to overall victory and must be avoided. Pre-planning based on sufficient analysis of the adversary capabilities and intentions will create the foundation for victory.

The decision to detach small elements and the allocation of assets to these detachments to ensure a reasonable assurance of success will have to be made by the air commander. In this situation, the tenet of centralised command and decentralised execution has particularly high relevance. Since the detachment will be operating on its own there is a need to monitor the developments at a sufficiently high level of command in order to ensure that their actions are in alignment with the overall campaign objectives. Close monitoring is also necessary to ensure that reinforcements can be despatched at the appropriate time, if required. The air commander's decision-making ability is critical to the success of these actions and to ensuring that the smaller elements are not placed in unnecessarily vulnerable situations.

*Small force elements of air power can 'virtually' cover
large geographical areas*

*While small elements can dilute the impact of a large force, they
do not have extended staying power*

*Air commander's decision-making ability is critical to the success
of small force element deployments*

Deadly Situation

The ninth situation is 'deadly'. This is a situation wherein the survival of the force is directly threatened and, therefore, it must commence combat operations if not already doing so. Sun Tzu advocates avoiding conflict as far as possible, but he also states clearly and emphatically that there are situations where a force must fight without delay in order to avoid being annihilated and to retain some chance of success. A situation which is deadly is when one's own resources are starting to run low and the adversary is becoming stronger; in other words, one's own forces are overextended in terms of supplies, reserves and opportunities. Even though the picture that emerges is one of almost certain defeat, Sun Tzu believed that desperate action taken at the right moment will lead to success. A deadly situation is when the force faces destruction and, by implication, the nation faces total defeat.

The Greeks met the Trojans without a tremor.
Agamemnon ranged among them, commanding:
‘Be men my friends.
Fight with valour
And with a sense of shame before your comrades.
You are less likely to be killed with a sense of shame.
Running away never won glory or a fight.’

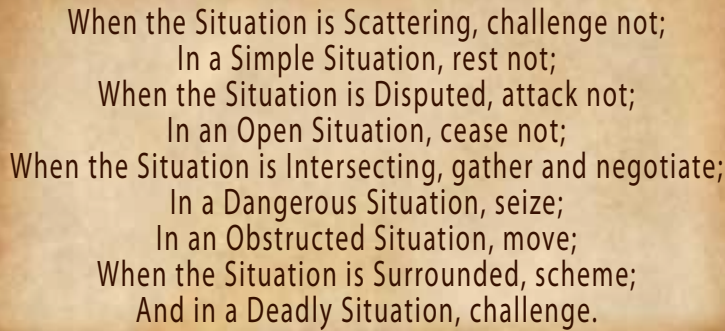
Homer
The Iliad, 9th century BC

Under these circumstances, there are two important actions that need to be undertaken by the contemporary air commander. First, is that the entire force must be made ready and engaged in combat with the enemy at the earliest opportunity and, second, the timing of the engagement must be determined after careful analysis of the situation, to increase the chances of success. In air power terms, this situation requires the attrition tolerance of one's own force and the nation to be very high. Further, although the rules of engagement will be adhered to as far as possible, the use of catastrophic force will not be ruled out. In such a situation there would be missions that will be classified as mandatory and therefore may even incur the loss of the entire force taking part in that mission. Finally, the strategic air power objective may have to be reorientated in order to avoid defeat in the broader campaign by being victorious in this particular operation.

The reasons for a force to take such drastic action, other than a dire threat to the existence of the nation, are many and varied and could include the slow depletion of supplies and resources to a dangerously low level, the inability of home bases to adequately maintain and secure an extended logistics line, the inability to have sufficient attrition replacement—in both personnel and material—in a protracted campaign, and miscalculation regarding the adversary's intent, capability and resource infrastructure to fight. The decision-making ability of the air commander is vital in all the actions that air power will have to consider and implement in order to achieve success in this situation. This is especially so regarding the decision to use catastrophic force, which can only be made in conjunction with the grand strategic national leadership.

In certain circumstances the use of catastrophic force cannot be ruled out
The decision to use catastrophic force must be taken at the grand strategic level of
national leadership
Mandatory air power missions may incur heavy losses emphasising the attrition
tolerance requirements of the force and the nation

Situational Response



When the Situation is Scattering, challenge not;
In a Simple Situation, rest not;
When the Situation is Disputed, attack not;
In an Open Situation, cease not;
When the Situation is Intersecting, gather and negotiate;
In a Dangerous Situation, seize;
In an Obstructed Situation, move;
When the Situation is Surrounded, scheme;
And in a Deadly Situation, challenge.

The responses to the nine situations are: do not fight on scattering zones; do not halt on simple ones; do not attack on disputed zones; do not allow the formations to be separated and communications to be blocked in open zones; strengthen diplomacy and ally with neighbours in intersecting zones; conduct appropriations in dangerous zones; do not stay but move on from obstructed zones; devise strategy when in surrounded zones; and fight courageously in deadly zones.

The situations determine the best course of action that can be adopted and, therefore, it is vitally important to analyse and correctly identify the situation one's own forces are in at any given time during a campaign. In fact, an astute commander will look ahead during the progress of the campaign to anticipate the situations into which the force could be moving and pre-plan the necessary responses. While Sun Tzu extols the virtues of adaptation and flexibility to gain the initiative, he emphasises the need for a force to be consistent in dealing with a situation at the strategic level, which obviously must be the optimum course of action for that particular situation. Strategic guidance must be a constant in these situations, with the freedom to adapt and employ flexibility restricted to the operational and tactical levels. This provides a very clear set of 'rules' to guide the commanders in dealing with each of the situations. The first four situations necessitate only indirect action—that is not carry out a particular action—from the commander and the force. However, the last five require concerted direct action to avoid the force losing its advantage and potential.

Scattered Situation

A scattered situation is when the conflict is taking place in one's own territory and the force has lost cohesion. Under these circumstances, combat should not be offered, but the basic attempt must be to regroup the force to re-establish unity so that the adversary can be challenged at a later stage. If necessary, geographic territory should be traded to obtain the time to do this. This is the classic situation in which to execute a defensive counter air campaign, wherein the adversary is denied the use of one's own air space to the extent possible. Even though Sun Tzu's injunction is not to offer combat, in air campaigns, final success is dependent on assuming the offensive at some point. By trading strategic depth for time, the commander is creating a situation whereby the advance of the adversary is initially halted and, subsequently, one's own force is able to change the strategy and assume the offensive.

Operation *Barbarossa* 22 June – 5 December 1941

Operation *Barbarossa* was the codename for the German invasion of the Soviet Union in World War II. The German goal was a rapid conquest of the European part of the Soviet Union west of a line connecting the cities of Arkhangelsk and Astrakhan. Although the Germans won some resounding victories and occupied some of the most important economic areas of the country, mainly Ukraine, the Soviet Union was not defeated.

By January 1942, the Red Army had repelled the German's strongest attacks and had started to push them back from Moscow. The Germans could never again mount a simultaneous offensive along the entire strategic German-Soviet front.

Although the Soviet armed forces in the Western theatre were outnumbered by the German forces, the Soviet Union was by no means weak. At the outbreak of hostilities, the Red Army was dispersed and separated, with units often separated and without sufficient transportation to concentrate prior to combat. Further, there was a severe shortage of modern combat aircraft that hampered the Soviet war effort. The Soviet military leadership had studied the failure of static linear defence in the fall of France and decided to trade space for time to recuperate and then carry out counterattacks. Accordingly, the infantry divisions were concentrated in large formations and tanks brought together in mechanised formations, each with over 1000 tanks.

By moving back into the hinterland of their nation, the Soviets cleverly used the strategic geographic depth available not only to concentrate their forces, but also to stretch the supply lines of the advancing German forces. Although initially Stalin ordered his forces not to retreat or surrender, leading to static linear defences that the Germans could breach easily, subsequently he allowed the forces to retreat wherever possible and regroup, allowing for defence in depth. Although the Soviets suffered initial setbacks, they prevented the Germans from achieving the goals of Operation *Barbarossa*.

In a situation that calls for dedicated defensive manoeuvring to reunite scattered forces, the first element of military power that can transition to an offensive strategy is air power. Offensive air action, to be initiated at some predetermined or opportune time in the campaign, is a critical requirement for the success of other operations. At the operational level, air power will have to be employed offensively, initially to deny the adversary control of the air and, thereafter, to obtain and maintain control of the air before counteroffensive manoeuvres can be adopted by surface forces. The acumen of the air commander comes into critical focus in determining the circumstances and the opportune moment to commence the changeover from defensive posturing to offensive actions—achieved through decision superiority.

Defensive counter air operations must be carried out immediately on the outbreak of hostilities to deny control of the air to the adversary or, at least, to contest it

The air campaign will have to transition to an offensive strategy at an opportune moment

Transition to the offensive is dependent on decision superiority of the air commander

Simple Situation

The response suggested by Sun Tzu to simple situations is somewhat dichotomous with the interpretation of the situation itself, which links it with shallow penetration while holding the initiative. The response is based on having the initiative and the freedom to manoeuvre. In a simple situation it is obviously easy to move forward and, therefore, Sun Tzu advises that the force should be advanced as far as possible without deliberately slowing down or stopping to regroup the force if for some reason they have become spread out. However, the speed of advance will have to be determined by the commander based on the urgency to achieve strategic objectives. The commander also makes the decision to stop and regroup the force depending on the robustness of the command and control structure, in terms of its ability to keep the cohesiveness of command even in a spread-out situation. Here, decision superiority is the key to success.

To act upon lines far removed from each other, and without communications, is to commit a fault which always gives birth to a second.

The detached column has only its orders for the first day. Its operations in the following day depend upon what may have happened to the main body. Thus the column either loses time upon emergency, in waiting for orders, or acts without them at hazard. Let it therefore be held as a principle, that an army should always keep its columns so united as to prevent the enemy from passing between them with impunity. Whenever, for particular reasons, this principle is departed from, the detached corps should be independent in their operations. They should move towards a point fixed upon for their future junction. They should advance without hesitating, and without waiting for fresh orders, and every previous means should be concerted to prevent their being attacked in detail.

David G. Chandler

Maxim XI, *The Military Maxims of Napoleon*, 1987

The air operations in this situation must be swift and aimed at achieving strategic objectives in the fastest possible time with the minimum expenditure of resources. However, air power must also adequately cover the advance of the surface forces, which might require extended operations over a large theatre. This carries the risk of overextending the logistic lines and stretching the comparatively lesser quantity of air power assets, which is in keeping with the dichotomy between Sun Tzu's explanation of and response to a simple situation. The decision of the air commander regarding the extent to which control of the air can be maintained—in terms of area as well as the level of control—will determine the scope of the overall campaign and limit the strategic objectives that can be realistically achieved.

The air campaign must be executed decisively to achieve strategic objectives at the earliest

Air power should be able to provide adequate cover to surface forces over a large area

The air commander's judgement regarding the extent of air power capabilities will determine the scope of the overall campaign

Disputed Situation

In disputed situations, the advice is not to attack precipitously. Sun Tzu believed that disputed situations invariably led to conflict and, therefore, it was advisable to conserve one's own strength and retain the position of advantage rather than initiate the attack. Even though this could lead to the adversary gaining the initiative, Sun Tzu believed that a skilled commander would have prepared the force sufficiently and ensured its superior positioning, which would then be able to contain the initial surge from the adversary. Further, the commander would be able, subsequently, to take the offensive in a much more controlled manner since the adversary would have already committed and thereby exposed their intentions. However, the success of such a strategy hinges on the capability of a force to absorb the first strike without the strike becoming a debilitating blow and has to be carefully judged by the commander.

From an air power perspective this is a paradoxical situation in that the response calls for inaction whereas the basic premise for the employment of air power is offensive action. Therefore, in this situation, one's own forces must be maintained in such a state of readiness as to be able to respond almost immediately to the adversary's initial actions. The force must also have the capability and the confidence to wrest the initiative and offensive from them at the earliest. Air power is ideally suited to facilitate such an offensive strategy because of its inherent responsiveness and will be at the vanguard of the counteroffensive. This requires careful pre-planning, constant vigil in monitoring the adversary manoeuvres and superior decision-making regarding the execution of the air campaign. The air commander will also have to make an informed judgement regarding the force's ability to absorb and withstand a first strike. The decision to initiate action or to hold back will have to be made dependent on this judgement alone and the air strategy will have to be adapted accordingly. A strategy that leaves the force incapable of retaliating and seizing the initiative is one doomed to fail.

Commencement of the Indo-Pakistan War 1971

The Indo-Pakistani conflict was sparked by the Bangladesh Liberation War, a conflict between the traditionally dominant West Pakistanis and the majority East Pakistanis. The Indian involvement was a response to around 10 million people fleeing East Pakistan into West Bengal as a result of a vicious crackdown by the Pakistani Army in East Pakistan in early 1971. By November war seemed inevitable, but although India had massed its forces on both the eastern and western borders with Pakistan, they were not permitted to initiate any action. India did not want to be seen internationally as the one that initiated the first move in the war.

On 3 December, at 1740 hours the Pakistan Air Force launched pre-emptive strikes on eight Indian Air Force airfields. This was called Operation *Chengiz Khan* and tried to copy the success of the Israeli pre-emptive strikes during the Arab-Israeli Six Day War in 1967. However, unlike the Israeli attack, which involved almost the entire Israeli Air Force aircraft fleet, the Pakistan Air Force used only about 50 aircraft and managed to create only minimal damage to the Indian airfields. The Indian Air Force not only absorbed the attacks, but started flying attack missions from midnight and quickly achieved air superiority. The Indian forces immediately responded with a massive coordinated land, air and sea assault on both the fronts that culminated in the liberation of Bangladesh.

Air power is ideal to practise the strategy of absorbing an initial strike and then mounting a counteroffensive

The success of this strategy is dependent on the force's ability to absorb the first strike without being debilitated

The air commander's superior decision-making is critical to the success of this complex strategy

Open Situation

Open situations are comparable to the wary and circumspect movements of two prize-fighters in the ring before they actually come to blows. Both have the freedom to move and are gauging the opponent for strengths and weaknesses, and looking to identify the merest 'chink' in the defences that could then be exploited in conflict. It is important at this stage not to attack pre-emptively, but to keep pace with the adversary's manoeuvres, never letting down one's own guard or letting the adversary gain advantage. However,

Sun Tzu explained that it may become necessary to initiate the attack if the adversary is seen to be gaining and exploiting their advantage to an extent that is incompatible with one's own capacity to contain it at a later stage.

In the air campaign this can be equated to the pre-conflict phase, wherein precautionary activities are undertaken at a slightly higher tempo than in normal circumstances. This will be mainly information gathering to identify the centres of gravity of the adversary and facilitate strategic analysis and planning. The basic requirement in air power terms is to be able to ensure that the adversary does not move into a position of advantage by deployments and manoeuvres, while simultaneously masking one's own plans and intentions. Under these circumstances a pre-emptive attack should normally be avoided as far as possible, but the air commander should be constantly looking for opportunities to carry out actions that will diminish the adversary's air power capabilities, which will automatically create an advantage for one's own forces. This could mean that a strike could be initiated when an ideal opportunity presents itself, even in the pre-conflict phase, provided one's own forces have been manoeuvred into an advantageous position. The decision to initiate such a covert, or at times even overt, action must be taken at the highest level of command, after careful consideration of the existing situation, because of the high probability of escalation.

Air forces must carry out surveillance during the pre-conflict phase to facilitate the preparation of strategic plans

In the pre-conflict phase, actions to diminish the adversary's air power capabilities must be conducted

The decision to initiate offensive action must be taken at the highest level of command

Intersecting Situations

In intersecting situations the strategic objectives of other forces may be aligned with one's own and therefore it will be advantageous to form alliances. This will also ensure that adequate resources are available to contain even larger forces than one's own. The imperative in this situation is to ensure the viability of the alliance by constantly adjusting the alignment of strategic objectives between members of the alliance. This can be achieved only at the grand strategic level. The maximum advantage in coalitions is achieved by initiating the process of strategic alliances through a whole-of-government

approach, leveraging all elements of national power. By being ‘first-in’ in the process, one’s own forces will be able to lead, with the attendant advantages as well as responsibilities that come with being the lead nation in coalition operations.

Air campaigns are intrinsically complex in nature and require a great deal of pre-planning. Operating effectively within alliances and coalitions further increases this complexity and emphasises the need for detailed planning. In order to derive the benefit of being a larger force, the component air forces would have had to train and exercise together prior to being committed to actual conflict. Further, whether one’s own nation is the lead in an alliance/coalition operation or merely a contributing member will determine the effort that one’s own force will have to put into making the air campaign as seamless as possible. Since even allied nations have independent and, at times, completely different rules of engagement and have differences in their *modus operandi*, the professional mastery of the air commander and other senior commanders will be tested to its fullest when operating as part of a coalition. Correct and timely decisions that are executed with professional mastery are fundamental to the success of coalition operations.

The coalition was fortunate to have an overwhelming number of air forces in the Gulf War. When elements of one force component chose to bypass the joint air planning process, the JFACC [Joint Force Air Component Commander], in the interest of avoiding doctrinal strife, could afford to rely upon forces directly under his command to accomplish theater objectives.

Brigadier General David A. Deptula, 2001

***Coalition air campaigns are highly complex and need to be
planned in great detail***

***The contribution from the lead nation in a coalition has to be greater
than from other participants***

***Professional mastery of the air commander will be put to test when
operating within a coalition***

Dangerous Situation

Dangerous situations could lead to circumstances wherein the force may suffer from lack of resources because of a number of reasons; advancing too fast and too far into adversary territory and thereby stretching the logistic line, providing the adversary the opportunity to envelope the force, inadequate pre-planning and inaccurate appreciation of the resource requirements. In this situation the force must capture resources and possess the capacity to constantly build up and harbour its own resources so that the combat capability is never compromised by lack of resources.

In an air campaign, if the force has been deployed without adequate technical and material support or if the rate of air effort required exceeds the planned capacity, the situation could become untenable. Sun Tzu advocated capturing adversary resources to build one's own capacity. In contemporary conflict this is not a viable option to adopt, especially for the employment of air power wherein the supply requirements are unique to equipment. However, captured air bases can be utilised by own air power assets to great advantage.

The primary requirement in any air campaign, therefore, is to make sure that the force retains the capability to air supply the forward deployed air elements, as well as surface forces if necessary, throughout the campaign. In turn, this requires obtaining and maintaining adequate control of the air for the entire duration when air elements are at the end of the logistics chain and/or surface forces are being air maintained. The extent to which the chain can be stretched, as well as the duration that such operations can be sustained optimally, will have to be decided at the strategic level of joint command, since more than one element of the force is involved.

*Adequacy of technical and material support is a cardinal requirement
for air power effectiveness*

*Even though captured resources may not be generally usable, captured
airfields can be advantageous assets*

*Decision to air maintain a force must be taken at the strategic
level of joint command*

Obstructed Situations

In obstructed situations, the commander must continue the advance by identifying the direction which would provide the best opportunity for the force to improve its position without being static at the same place. Momentum of the advance must be maintained at all times, only letting it slow in a premeditated move. Even then, the capacity to surge back to the original level, after the circumstances that necessitated the slowing down have been contained, must be retained.

Movement is the essence of strategy. This is true even though strategy is not confined to the military art: the implementation of every political decision requires movement. It may be messages that move, or men, or money, or munitions.

Stephen B. Jones

Air power has the capability to control the tempo of operations because of its ability to 'see' far ahead and anticipate any obstructions that could possibly slow the advance of the joint forces. This forward vision of obstructions is physical and virtual—physical in terms of the surface forces' line of advance and virtual in terms of possible adversary manoeuvres that are predicted based on one's own observations and calculations. Therefore, in a joint campaign, the planning process must be based on air power surveillance and analysis that will provide sufficient forward planning capability to ensure that the required tempo is maintained. Being able to maintain a tempo—through anticipating the obstructions that the force could encounter—that is unsustainable for the adversary is a war-winning factor.

In this aspect the success of the employment of air power—to chart a different route for the main surface force and avoid adversary concentrations of force, to use its strike capabilities to remove physical obstructions before the surface forces are affected, to remove virtual barriers by preventing adversary concentrating forces through the shaping of the deep battle, and/or to carry out strategic attacks on adversary's centres of gravity to reduce their warfighting capabilities in the medium and long term—is critically dependent on the decision-making capabilities of the air commander.

Air power provides physical and virtual forward vision

Joint campaign planning must be based on air power surveillance that provides a forward planning capability to the force

Successful employment of air power is dependent on the commander's decision-making ability

Surrounded Situation

When the force encounters a surrounded situation—either physically surrounded by adversary forces or metaphorically surrounded because of the lack of resources and clear directions—the commander should create and execute fresh plans to extricate the force from its immediate difficulties. The success of all plans depends to a great extent on their secrecy. This is more so in this situation because the adversary will have the advantage and be able to counter effectively any course of action that is contemplated if they get an indication of it through lax information security procedures.

In the employment of air power in contemporary conflict, there are two aspects to addressing such a situation. Whether physically or metaphorically surrounded, air power provides the option of either airlifting the surrounded force to safety or air maintaining the surrounded force with material to continue the fight. These operations require a great deal of detailed planning that would have to be done at very short notice. Further, in order to succeed in implementing either option, one's own air forces will need to have a very high level of control of the air. This situation is fraught with danger and success is dependent on the robustness of the air lines of communications and logistics, and is directly impacted by the quality and quantum of air opposition. An additional factor to be considered is the adversary surface forces' actions against the surrounded force, which will have a salutary effect on the timing and choice of the reinforcing air action. The air commander must have a very clear and strategic understanding of the emerging situation to judge the timing of the operations and the total effort needed for success.

The Berlin Airlift

At midnight on 23 June 1948, the Soviets cut off electricity supplies to the western half of Berlin from power stations in the east along with telephone communications citing 'technical difficulties'. At 6 am then next day they halted all civilian road and rail traffic into and out of the city, allegedly because the bridge over the Elbe had become inoperable. This blockade of Berlin was aimed at forcing the Western powers to leave the city. General Lucius Clay, the US Military Governor of Germany at that time, proposed a plan for sustained aerial resupply of Berlin, which was endorsed by the US President Harry Truman. General Curtis LeMay, commander of the US Air Forces in Europe commenced the airlift on the afternoon of 24 June 1948.

The airlift started from three airfields, Rhein-Main and Wiesbaden in the American zone and Wunstorf in the British zone. The Allies had also despatched three groups of B-29 heavy bombers to dispersed locations in England as a precaution against Soviet interference and escalation of tensions over Berlin. However, the Soviets did not see any need to apply additional pressure because they were sure of the failure of the airlift, based on the unsuccessful German attempt to sustain by air their 6th Army trapped at Stalingrad during December 1942 and January 1943.

Although the airlift initially was haphazard, utilising the limited number of DC-3 Dakota transports that the Allies had in Germany, the strength and load carrying capacity of the force steadily increased till by 14 July they were able to meet the daily goal of 840 tons. The only route into Berlin was by means of three 20-mile wide corridors across the Soviet zone of Berlin and the airspace over the city was shared. Soon it was realised that the DC-3 was not large enough to lift the weight required to reach the goal of 4500 tons of supply per day and 72 C-54s were brought into the theatre. On 26 August the Allies had delivered 100 000 tons of supplies and by September the Airlift was transporting 5583 tons of supplies daily. By 31 December 1948 100 000 missions had been flown and nearly 750 000 tons of supplies delivered. In May 1949, the Soviet Union announced the end to the blockade after 328 days. The city of Berlin and its inhabitants had been sustained purely through airlifted supplies for nearly a year.

(Ref: Chris Clark, *Operation Pelican: The Royal Australian Air Force in the Berlin Airlift, 1948–1949*, Air Power Development Centre, Canberra, 2008, pp. 6–17 and AAP 1000—*Fundamentals of Australian Aerospace Power*, p. 188)

Air power can air supply a surrounded force if adequate control of the air can be established

The situation is precarious because of its dependence on air lines of communications and supply that can be disrupted by a determined adversary

The air commander must have a strategic grasp of the situation to make effective judgements needed for the success of such operations

Deadly Situation

The only course of action that can bring success in a deadly situation is to initiate conflict courageously with a clear course of action and concept of operations that, if executed correctly, will have a more than even chance of victory. Since combat is initiated as a last resort after having exhausted all other options, the commander must be conscious of the fact that failure in this attempt will mean certain defeat in the campaign. There would be situations in contemporary conflict when one's own force is outnumbered and may even be isolated because of a number of disparate reasons. While a detailed analysis of the reasons why this situation has been reached is not relevant here, it is necessary to evaluate the best course of action under these circumstances.

Air power is perhaps the most suited military power to fight its way out of a deadly situation, because of its inherent speed, responsiveness, lethality and flexibility. Air power is also the best option for the employment of catastrophic force, which may bring even an ascendant adversary to the negotiating table. However, the decision to employ such force should only be taken at the grand strategic level of national security. It is incumbent on air commanders to provide professionally correct and morally strong advice on this issue. When a deadly situation reaches a point of national defeat in war, the employment of air forces will perforce have to change to one that provides the nation with the last option to extricate itself from the situation. This may involve the tolerance of a devastatingly high attrition rate and the acceptance of changes to the rules of engagement.

At the strategic level, Sun Tzu's deadly situation is a war of national survival where, in contemporary euphemistic terms, 'the gloves are off' and the force will carry out whatever actions are necessary to ensure the survival of the nation as an entity. It is of utmost importance that the decision to move into this phase in a conflict is taken with due diligence and as a collective whole-of-nation approach. It can never be a purely military decision. The consequences of waging such a war, irrespective of its outcome, are far too

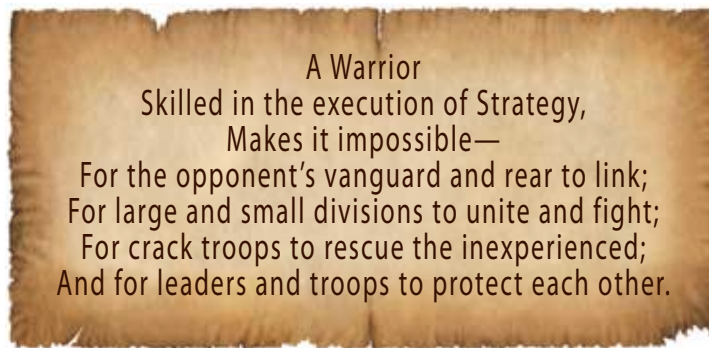
high for the decision to be considered a purely military matter. The professional mastery and decision-making ability of the commanders will obviously be put to extreme stress under these circumstances.

*Air power is most suited to deal with a conflict situation with
limited chances of success*

*Catastrophic force should be applied as a last resort and even then the
decision should be made at the highest strategic levels of national leadership*

A war of national survival needs a collective whole-of-nation response

Execution of Strategy



Commanders skilled in the execution of strategy make it impossible for the enemy to achieve contact and support between the front and the rear of the force, mutual cooperation between small and large groups, coherence in the force that ensures the less capable elements are supported by elite troops, and mutual support between officers and soldiers, thus preventing the force from rallying.

Commanders skilled in the execution of a strategy will be able to identify the conditions that, when exploited, will fragment the adversary's forces. Sun Tzu recognises four major ways by which such fragmentation can be achieved. First, by cutting off their mutual support by severing the contact between the front and the rear; second, by ensuring that smaller elements in the force are not directly supported by larger groups; third, by denying the opportunity for more capable and elite troops to come to the aid of force elements with lesser capabilities; and fourth, by preventing the officers from rallying the force by denying support between officers and troops. These actions are easier to implement and more effective when applied in the early stages of the conflict, thereby speeding up the fragmentation process. The four ways described can be implemented through all levels of the conflict and command, and are equally applicable to the strategic as they are to the tactical level. This stanza implicitly expresses the broader concept of retaining the initiative by taking the fight to the adversary and denying them the opportunity to mount a cohesive attack on one's own positions.

Sun Tzu's injunctions to fragment the adversary opportunistically are as applicable to contemporary air campaigns as they were during his time. At the philosophical level, the need to take the fight to the adversary is essentially an offensive concept, well suited to the application of air power. By targeting the lines of communications and the logistic supply lines, the adversary's front-line fighting force can be starved of resources and its capacity to continue the campaign severely hampered. Air power's capability to carry out deep

interdiction makes it the ideal force to achieve this under conditions of positive control of the air. Early in the campaign itself, a skilled air commander will, therefore, allocate resources to deny the adversary mutual support between separated forces, to facilitate rapid transfer of one's own forces and to provide situational awareness for commanders. Essentially, the four methods to fragment the adversary that Sun Tzu advocates, translate to different levels of air interdiction—from deep interdiction that will have strategic consequences, to battlefield interdiction to deny the adversary any opportunity to derive immediate mutual tactical support in the battlespace. Two elements are crucial to the success of this activity—control of the air and the commander's skill in the judicious application of air power.

Interdiction of Chinese Logistics – Korean War

In April 1951, the United States Far East Air Forces' air operation's emphasis shifted from close air support to interdiction missions. The Chinese logistics system had virtually limitless number of personnel and proved itself to be eminently flexible in opening new supply routes at will. The impossible task of interdicting the supply chain was compounded by many resupply missions being undertaken on foot. Further, the interdiction program was unable to attack the supply dumps and base camps in Manchuria because of political constraints. Although countless missions were flown against roads, railway lines and bridges on the Korean Peninsula, the inability to attack the sources of supply brought about an apparent feeling of the interdiction having only limited effect on the Chinese capacity to fight.

Yet there can be no doubt that the interdiction program caused a degree of disruption to the communist system of supply. The communists had to divert thousands of men to repair the continual damage to the railways and roads.

(Ref: John Mordike, 'The War in Korea 1950–1953: An Overview', in John Mordike (ed.), *The Post-War Years: 1945–1954: The Proceedings of the 1996 RAAF History Conference*, Air Power Studies Centre, Canberra, 1997, pp. 75–88)

Control of the air has been discussed in all possible contexts and needs no further elaboration other than to re-emphasise its criticality in ensuring freedom of manoeuvre to all elements of the joint task force. The air commander's skill in applying air power is an intangible and non-quantifiable quality and such skills cannot be acquired in the short term. These are imbibed over a period of time, through dedicated professional development achieved by focused training and education, overlapped by practical experience sufficiently well exercised in realistic conditions. One major element in the holistic skills of the commander is decision-making ability that has to be honed to deliver decision superiority at all times—from the planning stage of a campaign to its successful completion. An adversary facing a skilled air commander will find it extremely

difficult to manoeuvre and operate their forces with the freedom required to give them an advantage.

*The concept of 'taking the fight to the enemy' is well suited to air power
because of its inherent offensive nature*

Deep air interdiction can create strategic effects

*Decision superiority is a primary requirement for an air commander
to be effective in the conduct of the air campaign*

An opponent, once separated cannot gather;
And their unified strategy cannot unfold.

It is advantageous to move when there is gain;
To stop, when there is none.

Venture to ask: 'How to confront the opposing leader
With his multitudes whole and ready?'
I say: 'Seize beforehand his deepest attachment,
And he will do your will.'

When the enemy is scattered, prevent them from concentrating and ensure that they are confused when they are united. A skilled commander acts offensively when it is advantageous to the force and halts when there is nothing to be gained. When confronted by a powerful adversary in good order, seize something that the opponent holds dear so that they become amenable to one's wishes.

There are two elements to dividing the adversary—one, to keep an already scattered adversary in that state and the other to look for opportunities to divide a united force by targeting their strategy and confusing them. Attacking the unity of an adversary force has to be carefully planned and targeted contextually if it is to succeed. The manoeuvring skills of the commander lie, firstly, in being able to recognise the opportunity that, if exploited, will lead to an advantageous position and, secondly, to know when that opportunity has been completely used up so that one's own manoeuvres can be halted. A manoeuvring force not only expends more resources, but also tires itself more than a

static force. Manoeuvres therefore, should bring not only an 'edge'—an advantage which could be battle/campaign winning—but also some larger benefit to the force, victory must bring with it a worthwhile prize. Sun Tzu repeatedly mentions that success in the long term is measured more by the result of battles that one does not fight than the ones that are fought and won. This is a concept wherein marginal battles—ones that are extremely resource intensive to win and the returns in victory are not commensurate—are avoided. Knowing when to enter a conflict and when not to is as important as knowing how to manoeuvre the force optimally to triumph.

Sun Tzu explains that it is necessary to take the offensive and seize a coveted area of the adversary when faced with a large and well-prepared adversary intent on attack. Here, the 'size' of the adversary is being countered through audacious offensive action. Large forces, however efficient, will suffer from a greater inertia than that of a smaller force and this disparity will provide a cutting edge advantage to the smaller force that must be carefully leveraged. In this there is an underlying, if unspoken, need for the smaller force to be open to change and to retain a very high capacity to adapt to emerging situations in order to stay ahead of the larger force. Sun Tzu believed that at the strategic level of conflict pure 'size' was only one of many factors that impacted on its outcome. It is more important to use the advantage in the 'size' of the force, irrespective of its magnitude, in a contextual manner—matching it to the prevailing and emergent situation.

In planning an air campaign, the air commander has to take into account the state of the adversary air forces and devise appropriate strategies to achieve one or both aims—one, to keep an already spread out force separated, denying them the advantage of force concentration; and, second, to target the adversary at the strategic level of command to confuse them. This will not only mask one's own intentions but also deny the adversary the opportunity to react in a united manner. Strategic attacks on the adversary's identified centres of gravity will prevent them from executing a unified strategy. The commander's skill will be critical in allocating priorities to the different elements of the air campaign and thereafter in ensuring that adequate resources are made available to complete individual tasks. In the conduct of air campaigns, this will be an onerous task that will consume the commander's entire attention and yet cannot be considered infallible. Carefully balancing the air effort available and required will be an absolute necessity considering that air power assets are almost always scarce, especially during actual combat operations.

In pre-conflict situations, offensive air power must only be employed when it is certain that such actions will be advantageous to achieving the strategic long-term objectives of the campaign. When faced with an adversary air force of equal calibre, and if the advantages that would be gained by such actions are dubious, it would be prudent to carry out holding actions and recalibrate one's own offensive plans before executing them. More than in other military forces, attrition can become untenable in the case of air power for two reasons. First, the long gestation period required to field a sufficiently competent force with the required capabilities and, second, the difficulty in obtaining

sufficient equipment and personnel to reinforce a unit or force that has suffered high attrition. Therefore, air commanders must be able to identify the theatres wherein the air campaign must be carefully conducted at just the required level—without any surge etc.—to create the necessary level of control of the air for own forces to function effectively. This is a command decision that will have to be based on professional mastery of the art of air campaign planning.

Attrition

Trench warfare in the Western Front from September 1914 to November 1918 is a classic example of a strategy of attrition being adopted by both sides in a campaign. On 1 July 1916 the British Army suffered 60,000 casualties during the first hours of the Battle of the Somme. The concept of strategic bombardment was seen as a way of avoiding such horrendous casualties in future wars. However, the early theorists of air power including Douhet, Trenchard and Mitchell did not consider the extremely high casualty rate suffered by aviators during World War One. One reason may have been that many of British aircrew shot down were listed as casualties in the regiment that they had served in prior to joining the Royal Flying Corps. Consequently, the early theories on the application of air power did not include any consideration of the very high casualty rates that would be suffered by airmen in the future. Bomber crews from both RAF Bomber Command and the USAAF's 8th Air Force suffered heavily over Germany during 1943-45.

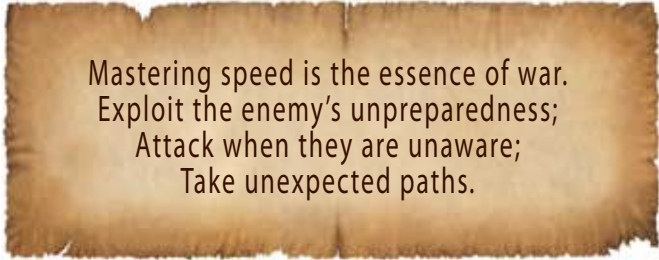
Ian MacFarling
Air Power Terminology, 2000, p. 14–15

When faced with a well-prepared and numerically superior adversary, it is necessary to take the offensive, primarily because in an air campaign, if the numerically superior adversary air force gains the initiative, it will be extremely difficult to wrest control in one's own favour. This would mean that the entire campaign would have to be conducted under an unfavourable air situation, which may not be tenable in most cases. Air campaign planning to deal with an air force that is superior in 'size' is perhaps the most difficult. The air commander will have to determine the theatre or area of operation that is most vital for the adversary—identified by analysing their intention—and then seize the initiative in that area by obtaining control of the air and vigorously denying the adversary manoeuvre opportunities. This may have to be done at the cost of depleting other areas of air power capabilities and, therefore, such decisions will have to be made at the strategic level of joint command. Under these circumstances, the air commander's decision planning and conduct of the air campaign is crucial to the success of the broader joint campaign.

*Air campaign planning must take into account adversary
air force's capabilities*

*In the pre-conflict phase of a campaign, offensive employment of air power
must be aimed at achieving strategic long-term objectives*

*When faced with a well-prepared and superior adversary, the initiative
must be gained through offensive action*



Mastering speed is the essence of war.
Exploit the enemy's unpreparedness;
Attack when they are unaware;
Take unexpected paths.

*Speed is the essence of war and must be used in a controlled manner. The
skilled commander travels by unexpected routes and strikes at the enemy at
their points of weakness, taking advantage of the adversary's unpreparedness.*

Speed has two distinct elements and is applicable at two different levels in the context of warfare. One, in the physical domain where manoeuvres have to be carried out effectively in the battlespace as fast as possible while maintaining the cohesiveness of the force at all times; and, two, in the cognitive domain, where the commander must be able to make decisions regarding the deployment of forces, execution of a pre-planned strategy and the way to counter adversary manoeuvre during the conduct of the conflict. At the physical level, controlling the speed is mainly an operational and tactical level activity, although broader directions will emanate from the strategic level of command. In the cognitive domain, speed of the unfolding conflict can only be mastered at the strategic level of command but the implications affect the activities of the force down to the tactical level, both in command and manoeuvres. This is because all conflicts are a function of a whole-of-government approach and decision-making at that level is ponderous at best. Sun Tzu advises to look for the time when the adversary is unprepared for battle and then attack at a time and place of one's own choosing to catch them unawares. The element of surprise—unexpected paths—is considered a necessary contribution to improve the chances of success.

No one is so brave that he is not disturbed by something unexpected.

Julius Caesar, 100–44 BC

In contemporary conflict, while speed of manoeuvre is a critical factor, it is the tempo of war that has to be mastered. Tempo is a combination of speed, cadence, rhythm and pace of conflict. One of the primary contributions of air power to contemporary conflict is its ability to control the tempo of war. Controlling the tempo has further nuances in its application to a modern battlespace. A force that can operate at a tempo that is unsustainable for the adversary will always be victorious. Air power's inherent characteristics—speed, responsiveness, reach, penetration, lethality—make it ideally suited to set and maintain the tempo of a conflict. At the physical level, this could mean carrying out air operations at a pace faster than the adversary can effectively respond, thereby overwhelming their war-making capabilities. The essence here is relative speed; that is, one's own actions must be faster than those of the adversary but need not be at the fastest pace that one's own forces are capable of creating. In applying air power effectively, tempo can be controlled by any or a combination of saturation strikes that overwhelm the adversary air defences, control of the air to a degree that unsustainable attrition is inflicted on the adversary, concerted interdiction that leaves the adversary surface forces stranded for supplies and reinforcements, and effective and overwhelming contribution to joint fires to support troops in contact.

At the cognitive level of conflict, tempo is controlled by clear application of the observe-orientate-decide-act (OODA) loop of Boyd's decision cycle. The commander who is able to operate within the OODA loop of the adversary will always be able to win the battle/operation/campaign or war. This concept has applicability from the tactical combat between two individual air assets to the grand strategic decision-making process of the nation. It is in mastering and controlling the tempo of operations that the decision-making ability of a commander is tested to the utmost, and controlling the tempo to suit one's own requirements is critical to the success of the campaign. While this is true of all operations, the rapidity with which air power can be applied, even at great distances, and its unpredictable lines of approach make the commander's ability to be within the OODA loop of the adversary fundamental to victory in air campaigns. This is a primary requirement for exploiting decision superiority.

A more inclusive definition that preserves the essential human cognitive component of decision-making while indicating its organisational and operational dimensions as well is:

Decision superiority is the degree of dominance in the cognitive domain an organisation achieves through its decision-making process that enables it to acquire and maintain an advantage over its competitors.

Decision Superiority: An Air Force Concept Paper,
Air Power Development Centre, 2008

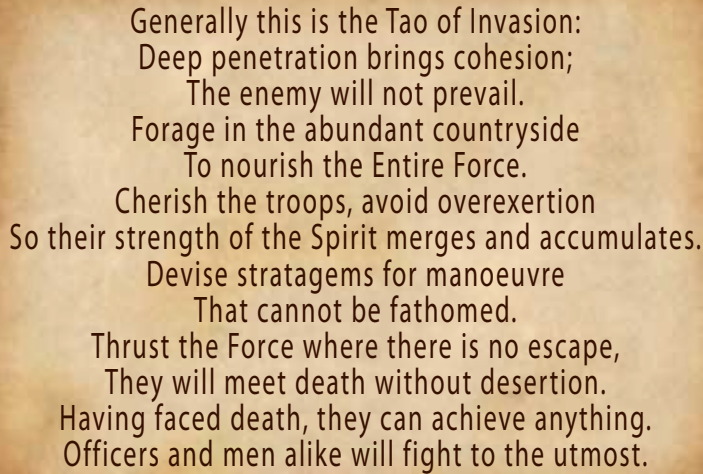
In contemporary air campaign terms, Sun Tzu's advice to exploit the adversary's unpreparedness and act when they are unaware, in unexpected ways, is an exhortation to carry out well-planned pre-emptive strikes on the adversary's identified centres of gravity. (The political dimension, immediate repercussions and long-term consequences of carrying out pre-emptive strikes are beyond the scope of this interpretation of the treatise and are therefore not being discussed further.) There is also an associated requirement to maintain absolute secrecy regarding such plans, because the degree of success of such actions is directly dependent on the level of surprise that can be achieved. For air power, this stanza is about decision superiority of commanders at all levels, controlled tempo of manoeuvre in the battlespace, neutralisation of the adversary's centres of gravity and retaining the element of surprise. An optimum combination of these four elements in an air force will make it unbeatable in conflict.

Tempo is applicable to both physical and cognitive domains

Air power has the ability to control the tempo of war in both the domains

Pre-emptive air strikes must be considered a viable option to be exercised in conflict scenarios

Offensive Campaigns



Generally this is the Tao of Invasion:
Deep penetration brings cohesion;
The enemy will not prevail.
Forage in the abundant countryside
To nourish the Entire Force.
Cherish the troops, avoid overexertion
So their strength of the Spirit merges and accumulates.
Devise stratagems for manoeuvre
That cannot be fathomed.
Thrust the Force where there is no escape,
They will meet death without desertion.
Having faced death, they can achieve anything.
Officers and men alike will fight to the utmost.

The further the force penetrates into hostile territory, the greater its unity and so the greater its invincibility. Sufficient productive land must be appropriated to ensure adequate provisions for the entire force. By consolidating energy, saving strength and keeping movements and operational plans secret, the force can become unfathomable to the adversary. If the force is placed in a location from where there is no escape, they will not flee even when faced with death. Having faced death, the officers and men will fear no pitfall, exerting themselves to the utmost to hold firm and fight to the end if there is no other alternative.

This subsection is regarding the conduct of an offensive campaign—invasion—and in different stanzas Sun Tzu provides advice on penetrating the adversary's territory to create superiority; the psychology of troops in battle, as well as how they should be prepared for combat operations; the various battle arrays; and the basic requirements for the employment of forces in offensive actions. Sun Tzu believes that a separate philosophy, 'Tao', is essential for success in an offensive campaign. This philosophy operates in two areas—one, at the conflict arena, from the tactical through to the strategic level and, two, at the grand national security level of the nation.

On Deep Penetration

This stanza explains the different factors that must be considered when a force penetrates deep into adversary territory—the purpose, follow-on actions and how the force should be manoeuvred to express its full strength. Deep invasion of the adversary territory is the peak of the offensive campaign. At the operational level of conflict, when manoeuvring deep in adversary territory, two factors will bring about a greater unity and cohesion within the force. One, the brotherhood of shared danger and, two, a sense of being able to trust no-one but one's own compatriots in hostile territory, even though the area may have been conquered. In hostile territory the commander must ensure that the concentration of force necessary to thwart any adversary counterattack is never diluted at the strategic level, since that is one of the greatest dangers that faces an invading force. The second strategic danger is of extended supply lines that could become a vulnerable centre of gravity of the invading forces. Sun Tzu advised the use of captured provisions and other material to avoid this situation and also to limit one's own resource expenditure as far as possible. However, this can only be a short to medium-term solution to the logistic supply issue. While exploiting the adversary's resource base, securing the supply line from one's own home base must also be simultaneously accomplished.

At the grand national security level, the consequences of invading another nation must be robustly debated and, in contemporary circumstances, should be attempted only as a last option. International reaction to such actions has the capacity to turn a brilliant military victory into strategic defeat for a nation that has not consciously created the diplomatic climate for other nations to accept, and maybe even support, the invasion. The military philosophy of offensive action must be cognisant of these intangible factors that have a more than even chance of influencing the final political outcome of an invasion. Decision superiority at the highest levels of government, ably supported by the strategic level of military command functioning with professional mastery, is irreplaceable as a critical factor in the success of an invasion.

The third part is regarding the psychology of the force as a whole in conflict, wherein Sun Tzu advises operational commanders to ensure that the troops are not overexerted so that their combined capabilities can be concentrated at the will of the strategic commander. The elements of surprise and, in a subtle manner, of deception are also introduced in the development of concepts of operations that are 'unfathomable' to the adversary. Such concepts must be tailored to a particular context, but should reside within a broader extant framework, developed and tested at leisure and in great detail. The operational employment of the force in an offensive campaign must be such that it is compelled to fight, if necessary to the death, to achieve mission aims that, in turn, will contribute to the campaign objectives. Although Sun Tzu advises to manoeuvre the troops into areas of danger, the underlying principle is to manipulate the psychology of the force by denying it the opportunity to withdraw. The commander has to be extremely skilled to identify the area where the force will be victorious if it operates diligently in a cohesive

manner. An invading force must never be mistaken for a force that is suicidal in its tactics and operational ethos. Here, the competency of commanders at all levels is of great importance in identifying and exploiting the opportunities to be successful. Swift and correct decisions will be the key to victory in these situations.

In the application of air power in an offensive campaign, two strategic level requirements stand out as fundamental to success—concentration of force and adequacy of logistic supply. Both these requirements can only be met if the appropriate characteristics of air power are adequately developed within the force as a whole. Although air power is essentially an offensive capability, the structure of the force as a whole can be oriented either offensively or defensively, depending on a number of factors. (These factors are extraneous to the main treatise and therefore considered beyond the scope of this book.) An air force commander will have to identify the primary characteristics required to be emphasised in the development of the force to ensure that the application of air power is in accordance with government directions. Planning and executing an offensive campaign requires greater amount of skill from the commander than preparing a defensive stance.

An air campaign is essentially a complex, multi-tasking undertaking. First and foremost, it is about achieving control of the air and maintaining it for the required duration. The success of all other operations depends on this. Control of the air is more difficult in an offensive campaign because the airspace will be over adversary territory and therefore contested. Accordingly, the counter air campaign assumes the greatest importance and must be accorded the highest priority within the overall campaign plan. This requires a professional understanding of the joint campaign objectives and plans at the strategic level of command. Within the air campaign plan, identification of the centres of gravity and adequate concentration of force to neutralise them should be the base from which the rest of the plan is built.

The second requirement is the adequacy of logistics supplies, which Sun Tzu solved by advising the use of resources from conquered territory. This is not a possibility in the application of modern air power and, therefore, logistic planning prior to the commencement of the offensive is vital to the success of the entire campaign. Such planning must also consider the security of these supply lines, which might necessitate a greater expenditure of air power resources in having to airlift the supplies if surface transportation is not secure. Concerns regarding supply chain security can also force the offensive elements of the force to operate from safer home bases. This in turn will require longer transit times and deliver reduced time 'on target', with its associated increase in the quantum of air power assets required to fulfil all the requirements. In offensive air campaigns, adequacy of logistics and the security of the supply chain are the Achilles heels.

Logistics is the bridge between the economy of the nation and the tactical operations of its combat forces. Obviously, then, the logistics system must be in harmony, both with the economic system of the nation and with the tactical concepts and environment of the combat forces.

Admiral Henry E. Eccles

I believe that the task of bringing the force to the fighting point, properly equipped and well-formed in all that it needs is at least as important as the capable leading of the force in the fight itself ... In fact, it is indispensable, and the combat between hostile forces is more in the preparation than the fight.

General Sir John Monash

An offensive air campaign, whether against a sovereign nation or a non-state entity with no legal standing, has repercussions that can only be contained at the grand strategic level of government. Therefore, it is necessary for the decision to initiate the campaign to be taken at that level with a full and clear understanding of the direct impact and the rippling secondary effects that such actions will create. Further, even with the technological advances that make offensive air attacks extremely accurate, other factors such as faulty intelligence can lead to collateral damage. Under the current international environment of ensuring discrimination, humaneness and proportionality in the application of lethal force, this is not an acceptable situation. The government must have a strong belief in the correctness of the offensive action being conducted and must let the air campaign unfold without political interference. Breaking the rhythm of the planned campaign can lead to its failure, with greater and more disastrous consequences for the entire campaign.

Humane Warfare

The truth is that war in the past has often been soulless—it has involved the destruction of much of the cultural heritage of the societies that have been involved. The Second World War saw the destruction of some of the great architectural treasures of old Europe: the old city of Warsaw; the monastery at Monte Casino (the mother of European monasticism); as well as museums and art galleries which stored the glory of European art. In one fire in Berlin, 434 old masters were destroyed including works by Caravaggio, Titian and Veronese.

Christopher Coker
Humane Warfare, 2001, p. 14

Although the psychological factors mentioned by Sun Tzu in assuring victory do not all translate readily into contemporary air power application, deeper examination highlights the enduring relevance of his principles. The advice not to overexert the force is particularly relevant to air power, especially for smaller air forces. In offensive operations, the air force will be employed at a much higher tempo than when carrying out purely defensive measures and, therefore, the possibility of overextending the capability generation capacity of the force is an ever-present danger. The air commander must carefully nurture the forces and avoid attrition as far as possible so that concentration of force can be achieved when needed. The air campaign plans must incorporate sufficient alternative options, keeping the principle of surprise as a basic tenet. This will force the adversary to second guess one's own plans and lead to the impairment and degradation of their decision-making capabilities.

Sun Tzu believed that deploying troops into dangerous areas increased their psychological will to fight. In air power terms, this means that the force has to be well motivated to continue an offensive campaign that brings about greater attrition than otherwise. There is an inherent risk in committing the force to a dangerous situation because of the possibility of failure and attendant repercussions on the entire campaign. The air commander will therefore have to consider the overall air campaign objectives in the allocation of resources. The flexibility inherent in air power permits resources from one area to be used in another, if necessary, to tide over a deteriorating situation. Air forces on the offensive will definitely need a different ethos to fight and win, and the inculcation of this bold attitude in the force is an extension of the air commander's own reputation, professional mastery and known integrity. A major psychological factor that supports offensive air power is the acknowledged professional mastery of the leadership across all levels of command.

Concentration of force and adequacy of logistic supplies are fundamental strategic requirements for the success of an offensive air campaign

Discrimination and proportionality in the application of lethal force are critical to win international approval of offensive actions

Professional mastery of commanders at all levels is a foundational requirement for the success of an offensive air campaign

On Facing Death

In desperate straits, Forces know no fear.
When there is no escape, they grow determined;
When they have penetrated deeply, they persist;
When there is no gain in stopping, they fight.

Hence the Strategy is:
Alertness without needing discipline;
Attainment without instructions;
Commitment without needing contracts;
Trust without orders.

Prohibit omens and discard doubt,
So desperation will not find a place.

In facing certain death, when irretrievably trapped, soldiers will be fearless and determined. In inextricable positions, when they have penetrated deeply, they will be resolute and consolidate. When left with no alternatives, they will be desperate and fight to the death. When the strategy is correctly prepared, the soldiers need no encouragement to be vigilant and will spontaneously take action without instructions. They will support the commander even when there is no covenant and will be loyal even in the absence of direct demands or orders. By ensuring that all doubts have been discarded, the leader ensures that the force will fight to the death.

The entire force, even when aware of being in a desperate situation, will conquer their fear if they are committed to the campaign. Such commitment can only be achieved when the force has gone past the point of no return in the offensive and does not have any other option but to face the emerging threats. In a peculiar manner this brings clarity and simplifies the situation, in terms of decision-making. Courage and fear are two sides of the same coin—only courage born of commitment and understanding of the situation can overcome the fear that the situation creates. In this stanza Sun Tzu explains the criticality of fearlessness and commitment to the cause to victory in an offensive campaign. At all levels of a military force, there are bound to be a few people who will critically analyse the decisions being made by the commanders on their behalf. It is important to place this segment of people in a situation where the options are only to fight or fail so that they are completely aligned with the decisions that are made. Well-

motivated troops will opt to fight, even though they are aware of the dangers facing them. Those who never face such a situation can never understand this.

When the risk is visibly real, the soldiers will be vigilant without having to be ordered or guided. They will also understand that combat is the only option, and will initiate action when necessary without instructions from the superior authority. Shared risk is a binding factor that brings about complete loyalty from the force towards the leadership and their decisions. This is the foundation for victory in combat. Since the situation is dangerous, commanders must be able to remove all doubts regarding the success of the operation from the cognitive domain of the entire force. Uncertainty contributes directly to failure and can be eliminated by decision superiority. When this is achieved, the situation provides the commander with a cohesive and committed force that will not flinch at the onset of danger, but will 'fight unto death' to achieve victory. Such internalised obedience is the ultimate achievement of leadership and this level of trust and loyalty from the force must be repaid with decisions that will assure that the force triumphs in conflict.

In war, the general alone can judge of certain arrangements. It depends on him alone to conquer difficulties by his own superior talents and resolution.

David G. Chandler

Maxim LXVI, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

What Wavell called 'the loneliness of high command' requires an effective general to reach and take the hard decisions. This he should not do in isolation—it is clearly his duty to consult his staff and any allied liaison officers—but the decision is his. As Napoleon once remarked, 'It was not the Roman Army that crossed the Rubicon—it was Caesar.' Or again, 'In war it is not the men that matter—it is the man.' One thinks of Lord Gort's decision (approved in advance by Churchill) to take the British expeditionary Force out of the command of the French Superior Commander, General Gamelin, at the height of the disastrous 'Battle of France' in late May 1940 in order to head for the Channel port of Dunkirk and there to seek evacuation by the Royal navy and the 'little ships'. It was the correct decision, although some French commentators would disagree.

What Napoleon calls 'determined courage' we would today call 'moral courage' in backing one's own judgement to the hilt'.

An offensive air campaign always carries an inherently higher risk than a defensive one and this risk increases as the campaign progresses further into adversary territory. At the operational level, once the force is committed deep inside adversary territory, even being based in captured air bases, they will be committed to fight because there is no

option to withdraw. Under these conditions, the strategic level commanders must be aware of the pitfalls of extended logistic lines and the need to retain the cohesion of the force. These situations run the risk of combat units becoming isolated and thereby facing insurmountable odds that could lead to a very high chance of defeat. The decision regarding the depth of penetration for an offensive air campaign should be made dependent on the capability of the force to maintain communications and be able to operate in support of the overall strategic objectives.

Sun Tzu has written this stanza regarding the psychology of the force when in dire circumstances and how a commander should manipulate it to get the maximum performance from the force. The advice to place them in a situation deep inside adversary territory from where a withdrawal is not possible can be translated to an offensive air campaign which forms part of a joint campaign. In the joint campaign, if the surface forces have penetrated deep enough to find extrication difficult, the air campaign will have to create the necessary control of the air, shape the battlespace through strategic strike and deep interdiction, and provide integrated air strikes to support forces in contact. By doing so, air power can remove many qualms about the success of the operations.

Manipulating the psychology of the airmen involved will be comparatively easier than doing the same with the surface forces because the dangers faced are different. However, the cohesiveness of a joint force will be dependent on the shared dangers at the operational level and the clear allegiance of each component commander to the joint objectives at the strategic level. In contemporary warfare, only joint operations conducted with centralised planning and control at the highest strategic level will succeed in the circumstances that Sun Tzu has described. While understanding the psychology of the force is an important aspect of leadership, the technique that Sun Tzu advocates in this stanza to ensure that the force fights well is perhaps extreme in the contemporary environment and should be resorted to only as a last measure.

An offensive air campaign is inherently more risky than other options

*The depth of penetration in an offensive must be decided based on the
force's mutual support capability*

*Manipulating the cognitive domain of the force requires a nuanced
technique to be applied*

On Motivation

Our force has no excess worldly goods, yet they do not disdain wealth.
 They do not expect to live long, yet they do not disdain longevity.
 The day they are ordered into battle,
 Those sitting may wet their collars with tears;
 Those reclining may wet their cheeks with tears.
 But in situations that have no escape,
 They will fight with the courage of Zhu and Gui.³

The officers have no surplus wealth but they do not disdain riches and they have no expectations of a long life, but they do not dislike longevity. The force will be sad on the day they are ordered out into battle but, when they are in a situation from which there is no escape, they will display immortal courage. This is psychological readiness to face death.

Here Sun Tzu goes deeper into human psychology and the need for a realistic appreciation of what motivates people to perform dangerous duties. Motivation is always tinged with self-interest or desire, which can never be the same in two people. Therefore, commanders have to be able to fathom the self-interests that lie within an individual soldier and then understand the collective interest that will unify a force to fight effectively. Sun Tzu identifies three primary factors that affect self-interest—the future, wealth and health. In order to have an efficient force it is necessary to make the personnel understand a viable future plan for the force and realise their own individual positions within it. Further, the plan must also contain a simple and clearly visible linear progression path for each individual, thus catering for the three factors at the root of motivation. This is crucial to the cohesiveness and internal discipline of the force.

The second part of the stanza is about the need for commanders to be able to make tough but informed decisions to achieve victory. Sun Tzu accepts that soldiers will complain about their commander's decisions, especially when they are contrary to their own and the unit's perceived self-interests. This is a universal truth, as evident in contemporary military forces as it was in Sun Tzu's time. The commander will have to be cognisant of this fact and should adopt mitigating actions, while not being swayed to alter a decision.

³ In Chinese history, both Zhu and Gui were soldiers who performed extraordinary acts of courage, Zhu losing his life immediately after accomplishing his mission. Their courage and steadfast belief in the mission have turned them into folk heroes, exalted as legendary people and the epitome of courage.

This does not mean that incorrect or wrong decisions should not be corrected or that command must be rigid, quite the contrary. By adhering to decisions that have been made after due process, the commander retains the flexibility to adapt and finetune the campaign as it progresses. The most critical role of the commander is of the decision-maker. War is an uncertain activity at the best of times and descends into confusion and chaos almost at the outset itself. Only superior decisions, made by commanders who are professional masters will retain the cohesion of the force and make it victorious. Two elements that must combine optimally to ensure victory are the tactical brilliance of the force and strategic decision superiority of the commander.

In air power terms, the first part of the stanza regarding motivation is common with the other military powers. A force needs to have a transparent organisational structure that embodies the future plan and provides the entire force with a visibility of the actions being initiated. This is particularly important for air forces because even in times of comparative peace, when the surface forces are not involved in operations of any kind, the air forces of a nation will be constantly at an operational tempo carrying out surveillance and shaping activities as part of the broader national security initiatives. In the air force, wherein the physical dangers of operations are shared by only a small percentage of the force, it is important for all individuals to understand their contribution and share the commitment and sacrifices needed for the success of each mission, battle and campaign. Motivation is a very fragile and non-quantifiable psychological factor that has to be nurtured by commanders at all levels very carefully. The fighting efficiency of an air force is directly dependent on it.

Air Force's Operational Tempo and Peacetime Concurrency

The navy and air force of a maritime nation are forced to maintain a certain operational tempo on a continuous basis even during times of peace. This facilitates shaping and deterrence activities designed to preclude or precede a conflict situation and, for air forces, mostly involves the ISR, C2 and airlift elements.

An air force's ISR capabilities are crucial to the successful execution of all military operations and contribute significantly to other government agencies' activities in the pursuit of national security. Air force elements form an integral part of a nation's border protection and its C2 and airlift capabilities are at the vanguard of providing aid to the civil power and providing humanitarian assistance domestically, regionally and globally when required. An air force's ongoing part in national security operations also means that any further commitment to operations represents activity over and above the peacetime tempo and must be conducted concurrent with it.

(Ref: Dr Sanu Kainikara and Group Captain Tony Forestier, OAM, *Air Power for Australia's Security: More than the Three Block War*, CAF Occasional Paper No 1, Air Power Development Centre, Canberra, 2007, p. 39)

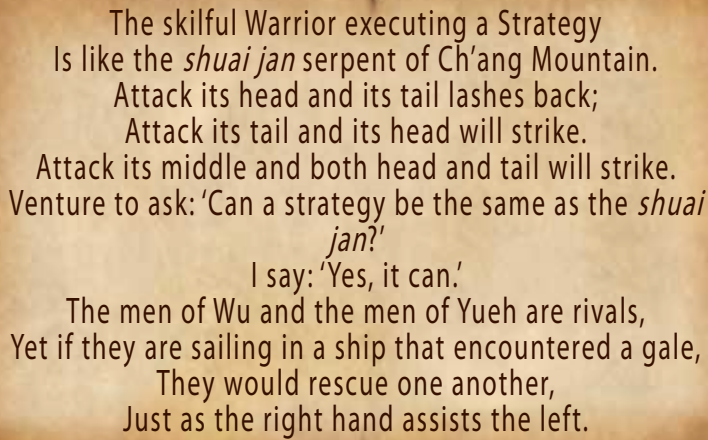
In an air force, decision superiority is the essence of victory, from the tactical level of combat to the strategic level of planning an air campaign. While the primary decision to go to war is normally political, the subsequent decisions are all within the domain of the air force's strategic command. Therefore, decision-making is an art that must be practised and honed to a level wherein the decision-maker is seldom wrong, and even when an incorrect decision has been made it is the decision-maker him/herself that recognises it first. The limited numbers and high value of air power assets permit only a very small margin of tolerance for poor decision-making. If the leadership possesses the necessary level of professional mastery, decision superiority and subsequent triumph is assured. In a purely hierarchical contributory manner, this is the essence of air superiority and the strategic superiority of an air force. In the effective employment of air power, the criticality of decision superiority transcends the levels of command as well as the levels of warfare.

*Air forces have to maintain an operational tempo even
during times of peace*

Decision superiority is the essence of victory through all level of command

*Decision-making is an art that must be practised and honed to
ensure its superiority*

On Mutual Support



The skilful Warrior executing a Strategy
Is like the *shuai jan* serpent of Ch'ang Mountain.
Attack its head and its tail lashes back;
Attack its tail and its head will strike.
Attack its middle and both head and tail will strike.
Venture to ask: 'Can a strategy be the same as the *shuai jan*?'
I say: 'Yes, it can.'
The men of Wu and the men of Yueh are rivals,
Yet if they are sailing in a ship that encountered a gale,
They would rescue one another,
Just as the right hand assists the left.

The skilful commander uses the force like the 'simultaneously responding snake'—when stuck on the head, its tail lashes out; when stuck on the tail its head attacks; when stuck in the centre, both head and tail attack. The question is whether such a strategy will work or not and the answer is yes, it will. If in times of common peril even two enemies will help each other, then two parts of the same force must cooperate much more, like the right hand does with the left hand. The imperatives of the situation make this happen.

Sun Tzu believed that strategy is always systematic and, therefore, open to scientific analysis, provided such an analysis is balanced with the factor of human psychology. This deliberate and methodical approach to strategy is superimposed on the need to make responsive decisions at the command level through instant reflexes.

Victorious forces are always mutually supporting. The viability of such a support is based on the proper design of the force and its success or failure dependent on the quickness of the reaction. The necessity is to react instinctively, like the proverbial snake *shuai jan*, without really having to make a conscious decision since the situation already predetermines the reaction—whether to enter into conflict or avoid confrontation. Sun Tzu believed that it was better for a force to be able to respond rapidly to emergent situations than nurture the ability for deep analysis and subsequent planning. Quick reaction and response are of a higher priority in conflict situations. Essentially, Sun Tzu advised that good strategy was formulated when the right decisions were made at the appropriate time, rather than through detailed and intricate planning that delayed decisions. He relied on his extensive experience and decided that a partially correct

decision made instantaneously placed the force in a better situation than a carefully nuanced and deliberate response made after a period of time. However, such rapid decision-making has to be done with absolute certainty, if the reward of speed is to be achieved. Effectiveness of a force is directly affected by certainty built on decisiveness.

Effective forces are forged on adversity, overcoming challenges through inherent tenacity and relying on their natural flexibility. This is achieved through constant preparation and reappraisal of the possibilities that might come about in the course of pursuing an objective. From Sun Tzu's time—2500 years ago—it has been accepted that the cohesiveness of a military force is almost completely dependent on tough, but fair and enlightened leadership. A force must be tested and challenged with adverse situations and basic warfighting standards enforced for the leadership to develop winning strategies. Cooperation between different elements of the force is the cardinal principle for the success of these strategies and also the cornerstone for the success of joint operations in contemporary conflict. Sun Tzu explained the necessity for even enemies to assist each other when faced with a common threat or adversary. In conflict this can be equated to the age-old saying 'an enemy of my enemy is a friend'. In the contemporary environment, political constraints may negate military cooperation between long-term adversaries. However, when the common threat is of a large enough magnitude, Sun Tzu's advice could be adhered to, relegating the bilateral differences to be sorted out at a later stage.

At the operational level, the aphorism in the stanza alludes directly to the inherent flexibility of air power and its capability to respond effectively in different areas within a theatre as well as across theatres as required. Reach, speed and responsiveness inherent in air power provide it with the capability to respond to even unexpected threats comprehensively. The analogy of the 'simultaneously responding snake' is apt for the skilful employment of air power, which can respond to threats in any area by concentrating forces at the required place in a flexible manner and then adapting to the new situation. Decision superiority is the essential factor in optimising such responses, from identifying the target and timing of the adversary's possible attack to deciding the movement of one's own forces in order to ensure that the adversary is faced with a concentrated force when the attack eventuates. A factor that affects air power negatively is that its assets are almost always limited—by virtue of its cost-intensive nature, long lead time to acquire and operationalise and difficulties in attrition replacement—making mutual support within the force of cardinal importance. Decision superiority, exercised through centralised control of available air assets is absolutely essential to achieve situational advantage and to ensure that mutual support within elements of the force is never compromised.

Infantry, cavalry, and artillery are nothing without each other. They should always be so disposed in cantonments as to assist each other in case of surprise.

David G. Chandler
Maxim XLVII, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

The requirements of carefully combined all-arms forces have indeed become a tenet of all warfare since the 18th century. Mutual support both in defence and attack is a cardinal principle. Examples when disasters have occurred through neglect of this concept range from Ney's all-cavalry onslaughts against the Allied squares at Waterloo (1815), to the commander of the 51st (Highland) Division's refusal to adopt Colonel Fuller's prescribed tank-infantry tactical drills at Cambrai (1917), or the fate of the Israeli armoured brigade that counter-attacked on 8 October 1973 without support shortly after the opening of the Yom Kippur War and lost two-thirds of its tanks in some thirty minutes of action, mainly to small anti-tank missiles handled by Egyptian infantry with impunity in the absence of Israeli infantry to fight them off. All-arms cooperation, to include an integrated use of air power and helicopters, is a vital consideration in all modern operations, as was seen in the Falklands' land campaign.

An effective air power strategy is based on a number of factors, but three fundamental inputs stand out. First is the inherent rapid response capability of air power buttressed by deliberate analysis done before the conflict. Second is the need for a clear understanding of the overall strength and capability of the forces available and their strategic depth vis-à-vis the spread of the theatre. Third is the ability of the commanders to assess emerging conflict situations and make instantaneous but correct decisions regarding the employment of the force.

The strategy must have the built-in capability to ameliorate the fallouts from a partially correct decision by flexibly resorting to air power's characteristics of speed and reach that permit rapid changes to be incorporated into the campaign. In terms of cooperation with enemies or even allies and friends in dire situations, air forces face more intense issues than the other forces. Air power is intrinsically technical in nature and to a great extent platform-dependent to create the necessary effects. Interoperability with allies and friends is a possibility because of the greater chances of commonality in equipment and operating procedures. However, with a possible or actual adversary this will be almost impossible. Therefore, the amount of operational cooperation and assistance that can be obtained under these conditions is speculative. The best that can be achieved will be for the two forces to function separately at the operational level in geographically independent theatres pursuing common strategic objectives that are mutually acceptable.

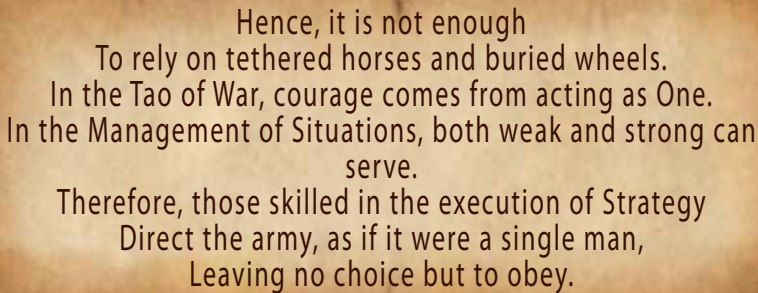
In these circumstances, the requirement for decision superiority gets further emphasised in order to ensure that the overall air strategy is cohesively enforced.

Effective forces are forged on adversity through tenacity and flexibility

Air power can respond to unexpected threats effectively

*Interoperability, in air power terms, is at best tentative even
between allies and friends*

On Unity of Purpose



Hence, it is not enough
To rely on tethered horses and buried wheels.
In the Tao of War, courage comes from acting as One.
In the Management of Situations, both weak and strong can
serve.
Therefore, those skilled in the execution of Strategy
Direct the army, as if it were a single man,
Leaving no choice but to obey.

It is not sufficient to place reliance on defensive lines. The military administration should also be able to cultivate a uniform level of valour amongst the soldiers that will unite them as one. This is the way of command. It is by the proper use of the zones that both strong and weak forces are used optimally. A skilled commander achieves cohesion by directing the force like a single individual with no other choice but to obey.

In any conflict, victory is normally achieved with offensive action, although there are instances in contemporary conflict wherein not being defeated conclusively has been touted as being victorious. In Sun Tzu's time, however, not being defeated was definitely not considered victory. Therefore, Sun Tzu starts by stating that a defensive array of the force is insufficient for victory. In this stanza, he explains the need to cultivate courage within the entire force through a common understanding and sharing of difficulties. A

force that is united in their valour will be easier to command. There are two preconditions to be met for the force as whole to develop the necessary courage.

First is an implicit but well-understood part of this aphorism, which is the requirement for commanders at all levels to have demonstrated valour in conflict under adverse conditions. The second requirement for success in command is to ensure that the strong and weak elements of the force are not isolated, but are spread in such a manner throughout the force that there will be no single area of weakness that can be targeted by the adversary. In developing the cohesiveness of the force, their courage and the evenness of their capabilities across the entire spread of the force are the two basic factors to be analysed. A force has to develop a character of its own—a mixture of the courage of the force as a whole and the basic fighting capabilities considered as a function of the combined capabilities of the individuals that form the force.

Victory in conflict is now being redefined. The irregular adversary has already done so and it will be incumbent on the conventional forces of a state to take note of this because the definition of victory will also indicate the possible courses of action that the adversary will adopt. While states are even now unwilling to redefine victory in more abstract terms, there is no other recourse. In the current global context, military victory by itself is not sufficient to ensure that the desired end-state can be achieved. War has always been a complex endeavour and it has become even more so in the past few decades. Victory is now a volatile combination of politics, economics, social and cultural needs, made ever more interconnected by dependence on the favourable perception of the watching world. To add to this morass, no two conflicts follow the same model and, therefore, there cannot be a definition of victory that encompasses all variables.

Sanu Kainikara and Russell Parkin
Pathways to Victory, 2007, pp. xiv–xv.

Sun Tzu teaches that unity in a fighting force is derived from the entire force having an understanding of the situation appropriate to their level of command and position in the hierarchy. Unity gives the force a focus that by itself can be equated to a force multiplier. A sophisticated commander should not only be able to unify the force but also inculcate the quality of persistence within the force, which is an offshoot of courage. The combination of unity and persistence based on courage in a force that is well directed makes it a formidable entity.

Sun Tzu believed that a defensive strategy was not sufficient to win a war and advised commanders to be offensive in order to obtain victory. Air power is an inherently offensive capability and can only bring victory if employed in offensive campaigns. At

the highest strategic level, the air campaign should be planned as an offensive campaign, even if at the commencement of the conflict the nation is forced to be on the defensive because of other extraneous factors. The need for courage to be a victorious force is common to all three Services. At the operational level, commanders need to encourage the force as a whole to be valorous, which once imbued will bring in an unusual amount of unity in the force.

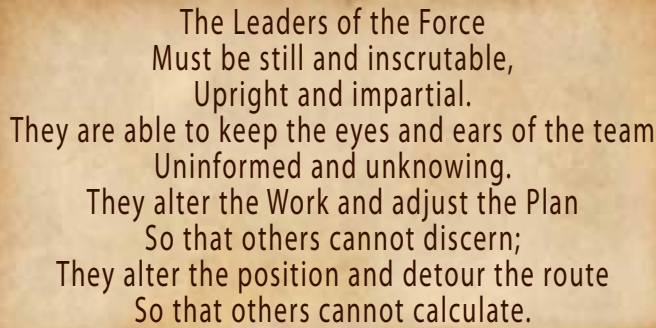
In air forces, this unity is most important because the basic tenet of the employment of air forces is 'centralised command and decentralised execution'. The entire force has to be directed as one, with subordinate commanders having the discretion to execute the strategy in a contextual manner to optimise the employment of air power. At the strategic level, commanders must have the moral courage to provide unbiased advice to the political leadership in the build-up to a conflict situation and to make the correct decisions during the campaign, even if such decisions may not be popular. This requires greatly enhanced professional mastery. The concept of courage and unity are two extremely important factors that determine the performance of an air force.

Air power can be victorious only when employed offensively

Shared courage within the whole force is a unifying factor

*Strategic commanders must have the moral courage to provide
unbiased advice to the political leadership*

On Leadership Characteristics



The Leaders of the Force
Must be still and inscrutable,
Upright and impartial.
They are able to keep the eyes and ears of the team
Uninformed and unknowing.
They alter the Work and adjust the Plan
So that others cannot discern;
They alter the position and detour the route
So that others cannot calculate.

Commanders should be serene and inscrutable, impartial and self-controlled. They should be able to keep the planning process secret and silent, even from their own forces. Commanders must have the capability to alter the plans at will so that the primary aim of the campaign is not revealed to the enemy and should be able to make changes to the positioning and movements of the force so that it is impossible for others to anticipate their manoeuvre.

In this stanza Sun Tzu begins a fresh list of leadership requirements for effective command. He teaches that a successful commander will appear calm and confident yet remote from the troops, because the onus of command automatically separates the leader from the led. There are a number of qualities that a skilled commander should possess—confidence, the correct amount of detachment, visible moral uprightness, and impartiality in dealing with the force. The commander should also keep the strategic plans of the force secret and not allow the force to be aware of any shortfalls or issues that might stand in the way of victory, because this will generate self-doubt and directly affect the morale of the force. While at times the planning and preparatory process may be shared with subordinate commanders at the appropriate level, the final decision and the strategic direction of the campaign should remain the sole responsibility of the supreme commander. The capability of the force and their will and courage to fight is a direct demonstration of their belief and confidence in the overall leadership and, therefore, the demeanour of commanders at all levels is of the utmost importance in conflict.

Sun Tzu explains that another part of leadership is the manner in which a commander deals with the adversary and their manoeuvres. The commander should have the mental flexibility to alter already well-laid plans dependent on the emerging situation, while continuing to keep the strategic objective of the campaign secret from the adversary. The

need is to keep the adversary guessing regarding the final objective and the plans that are being put in place to achieve this. This part of leadership is an important function in the pre-conflict phase. A corollary to the alteration of plans is that one's own subordinate commanders must have a clear understanding that their roles are susceptible to change with very short notice, since under normal circumstances they will not be privy to the changes in the plans. In the conflict itself, the commander must be able to adapt the manoeuvres of the force in accordance with battlefield requirements. Since the conduct of a campaign is of itself a dynamic process, this requires tremendous dexterity of thought in a commander, especially when the requirement is to surprise the adversary as far as possible. Successful strategies are the ones that are innovative and possess an innate amount of momentum of their own.

The notion of 'catching' (*utsuraseru*) applies to many things: yawning and sleepiness for example. Time can also be 'catching'. In a large-scale battle, when the enemy is restless and trying to bring a quick conclusion to the battle, pay no attention. Instead, try to pretend that you are calm and quiet with no urgent need to end the battle. The enemy will then be affected by your calm and easy attitude and become less alert. When this 'catching' occurs, quickly execute a strong attack to defeat the enemy ... There is also a concept called 'making one drunk', which is similar to the notion of 'catching'. You can make your opponent feel bored, carefree, or feeble spirited. You should study these matters well.

Miyamoto Musashi, 1584–1645
The Book of Five Rings

The basic requirements of command are common to all Services, especially the manner of the commander's conduct. Moral uprightness, impartiality and confidence are universal factors for effective leadership, even outside the military forces. It is the level to which the strategic plans of the force are allowed to percolate that differentiates the three forces. In the case of air power, the capabilities of the force are dependent to a great degree on the availability of adequate technological support, which will be open knowledge to the entire force. Therefore, it is even more important to keep any doubt regarding the overall capability of the force vis-à-vis those of the adversary away from the fielded force. Further, the effectiveness of the commander will lie in manipulating the war plans in such a manner to ensure that own strengths are always ranged against the weakness of the adversary. By ensuring the security of the plans and retaining sufficient flexibility, a commander should be able to create an element of surprise in his manoeuvres and deny the adversary the opportunity to anticipate the movement and intent of own forces.

Command in air campaigns shares all the common points of leadership in conflict applicable to other Services. The air commander must have the capacity to view the entire

campaign plan as a continuum and decide the priorities for allocation of air power within the joint campaign. The assessment of whether adequate control of the air is possible across the entire theatre for the duration of the campaign is a cardinal decision to be made by the air commander. However, if this is not possible because of near parity with the adversary air force, limitations in available air assets or any other equally constraining reason, the air commander must decide the time and place where control of the air must be established, based on the overall joint campaign plan. The other major decision that has to be made is the proportionate allocation of air power resources to control of the air and other air power tasks. These decisions will have direct implications for the success or otherwise of the campaign.

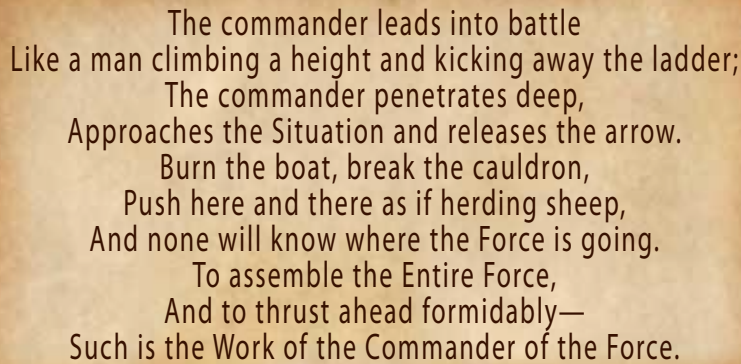
The professional mastery of air power required to ensure the superiority of these decisions is of a very high order and cannot be achieved without dedicated, long-drawn study, backed by sufficient experience. Further, the air commander must be able to alter the air campaign plan, at times at very short notice. Once the overall joint campaign has been launched, the flexibility inherent in air power will need to be optimised to achieve a range of unplanned objectives to cater for the unpredictability of combat. Unlike the other Services, under normal conditions, air power assets being always critically short, there will be no reserves to fall back on, making built-in flexibility in the air campaign plan a necessity. Such flexibility can only be brought to bear by the agility of the air commander's thinking, once again a product of professional mastery.

*Air campaign plans must have built-in flexibility to cater for
emergent conflict situations*

*The air commander must have professional mastery to ensure appropriate
allocation of scarce air power assets*

*The flexibility of air power is enhanced by a commander endowed
with agile thinking*

On Leadership Responsibilities



The commander leads into battle
Like a man climbing a height and kicking away the ladder;
The commander penetrates deep,
Approaches the Situation and releases the arrow.
Burn the boat, break the cauldron,
Push here and there as if herding sheep,
And none will know where the Force is going.
To assemble the Entire Force,
And to thrust ahead formidably—
Such is the Work of the Commander of the Force.

It is the Commander's duty to kick away the ladder behind the force after they have climbed the heights, to lead the force deep into adversary territory and then release the arrow, to burn the boats and smash the cooking pots and to drive the soldiers this way and that so that no-one knows where the force is headed. The commander unifies the soldiers' minds. To assemble the complete force and put it into dangerous situations and to move forward inexorably is the business of commanders.

This is mainly a metaphorical stanza dealing with the commander's responsibilities, primarily those associated with ensuring the courage and morale of the troops and their cohesiveness. The other aspect that comes out clearly is the concept of 'leading from the front', which is a crucial factor in winning battles at the operational level of conflict. Sun Tzu implies that a wartime leader must carefully study the different measures suited to the nine strategic zones, the offensive or defensive strategies to be adopted in accordance with different situations, and the soldiers' psychological states under different circumstances, in order to be successful in command.

Sun Tzu asks the commander to throw away the ladder after having climbed the heights, meaning that once combat has been initiated there should be no easy way back. Metaphorically, it indicates that calculated risks must be taken in order to achieve the strategic objectives of the campaign. However, such actions must be initiated after deliberations at the highest levels since failure in such an endeavour—wherein the majority of the force, if not the entire force, is involved—would lead to catastrophic defeat in the campaign. This injunction is at slight variance with earlier strategies suggested by Sun Tzu that advises the commander to carry out small, swift campaigns.

However, both are not necessarily contradictory. While the optimum is to wage limited campaigns, it may be necessary to engage in lengthier campaigns to achieve the broader strategic objectives. These campaigns should not however be protracted, but should consist of thrusts that are short and sharp like the strike of a swift arrow. Further, the size of the force should be tailored for the campaign to minimise resource requirements. The metaphor of throwing away the ladder indicates that the forces involved in such a campaign must be fully committed and dependent on the success of the campaign for their safety.

The commander must be able to mask the true strategic objective of the campaign and the intended points and targets of attack by keeping up a façade of indeterminate manoeuvre. The primary requirement is to keep the adversary guessing as to one's own true intent as far as possible, while the strike force is being gathered and readied for a formidable thrust. Sun Tzu implicitly indicates that the main thrust of the campaign—using the majority of the force—should as far as possible come as a surprise to the adversary, which will increase the chances of its success manyfold. This is the responsibility of the strategic commander who will have a holistic understanding of the entire campaign and be aware of the movements of not only one's own forces but those of the adversary as well.

To cross the sea without heaven's knowledge, one had to move openly over the sea but act as if one did not intend to cross it. Each military manoeuvre has two aspects: the superficial move and the underlying purpose. By concealing both one can take the enemy completely by surprise ... [If] it is highly unlikely that the enemy can be kept ignorant of one's actions, one can sometimes play tricks right under his nose.

Sun Haichen (Tr)

The Wiles of War: 36 Military Strategies from Ancient China, 1991

A dilemma that most air commanders will face at some stage in the campaign is the proportion of air effort that must be dedicated to the control of the air. At the beginning of the campaign it is perhaps simpler to understand air power requirements vis-à-vis the surface campaign but, as the campaign progresses, the very dynamism of it will constantly change the priorities. The situation will be further exacerbated if the adversary has air power parity and continually contests the control of the air. This stanza indicates that there may be a situation that requires taking a calculated risk to achieve the necessary control of the air at the cost of limiting the air contribution to the surface operations. This will be a strategic level decision, not to be taken lightly, since failure to win the air war would almost certainly lead to the failure of the entire campaign. In

dire circumstances, the use of 'catastrophic force' may have to be contemplated in the strategic air campaign.

Once initiated, air power actions cannot be recalled with ease. Essentially this is because the speed and momentum of air action limits the time available to cancel a mission and secondly because the impact is indelible. Similarly, once embarked on a contest for control of the air, a force has no option open to back away, the only viable action being to thrust forward for victory.

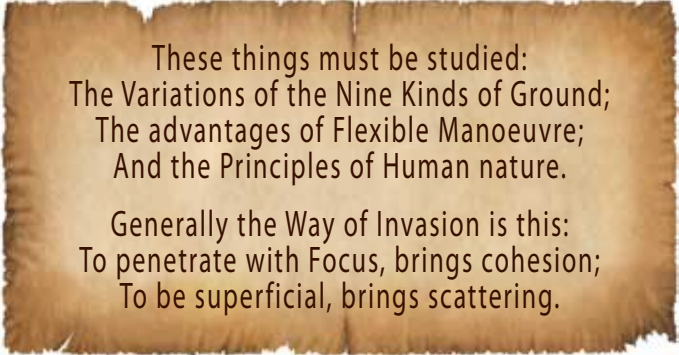
The success of concealing the true objective of the air campaign will to a certain degree depend on the capability of the force to carry out decoy missions, which may not always be an available option. However, air power can carry out pre-emptive strikes, the success of which is dependent on the reliability of the intelligence and other target information. The political fallouts of such an action must be considered in the planning. In any case, a decision that has such consequences will have to be made at the highest politico-military level. Like in any other operations, surprise is a factor that brings with it a certain amount of advantage to begin with, and which can be exploited by a sophisticated, professional commander. The air commander must, as a fundamental factor, constantly push to achieve the greatest amount of control of the air within the theatre of operations. Further it must be maintained and used to empower the thrust ahead, even at the cost of committing the entire air power assets available to this quest. Such a situation would entail the withdrawal of direct air power contribution to the surface conflict and, therefore, must be made at the highest level of joint planning. Essentially, the air commander must consider all aspects of the joint campaign and then make the allocation of available resources according to the priorities that are laid at the strategic level of joint planning. This must be done taking into account the factors that Sun Tzu has listed, maintaining the morale and cohesiveness of the force, taking calculated risks to ensure that the force performs optimally and masking the true intent of the force.

*The allocation of air assets to different tasks is an involved process
and must be aligned with the joint campaign objectives*

Air power actions, once initiated, cannot be easily recalled

*Pre-emptive strikes must be considered as an option during the
campaign planning phase*

Operational Art in Strategic Zones



These things must be studied:
The Variations of the Nine Kinds of Ground;
The advantages of Flexible Manoeuvre;
And the Principles of Human nature.

Generally the Way of Invasion is this:
To penetrate with Focus, brings cohesion;
To be superficial, brings scattering.

There are three fundamental aspects that must be studied to ensure success in war. Measures suited for the nine strategic situations, flexible manoeuvres that a leader must adopt in each of the situations and the reactions of one's own and adversary forces in terms of human nature. In taking the offensive, deep penetration into adversary territory brings cohesion in the force and superficial or shallow penetration, dispersal.

Three Fundamentals

The basic theme of this chapter is how to ensure decision superiority within the nine variations of the strategic situations. In order to achieve this it is necessary to understand the categorisation of the situations that has been done in the beginning of the chapter. Based on such an understanding operational art can be perfected. A commander must be able to categorise situations by a careful study of three fundamental aspects in the conduct of a campaign. First is the methodology to recognise the six different terrains (explained in the next stanza) and understand how they impact the employment of the force. Second is the ability to use this knowledge to lead the force optimally in the nine strategic situations that have already been identified. Third is to understand the different ways in which the force will react to emergent situations, which are heavily dependent on human nature.

Sun Tzu uses the term 'terrain' in a very generic sense that includes physical aspects of the actual battlespace, its position vis-à-vis one's own territory, and the circumstances of the actual combat operations. Many commanders fail to grasp the need for unity within the force and allow it to be virtually dispersed without unity of purpose. Deep penetration

into adversary terrain brings about cohesion in the force because of shared dangers. Commanders who do not recognise opportunities to unify the force while the conflict is in progress could lead the force into difficult challenges that may overwhelm it.

In the application of air power the three aspects of operational art that Sun Tzu has identified would be the same as understanding the strategic and operational situation, retaining the flexibility to adapt campaign plans at all levels rapidly and having adequate control over the human factors. Further, Sun Tzu's advice to reassess continually the strategic situation is very apt when applied to an air campaign. This process of re-evaluation is particularly helpful in the highly dynamic environment of an offensive air campaign, since one of the cardinal principles that underlies a successful offensive is the timely employment of the inherent flexibility of air power. This can be achieved only with constant monitoring and analysis of the progress of the campaign and the finetuning necessary to ensure optimisation of the employment of air power.

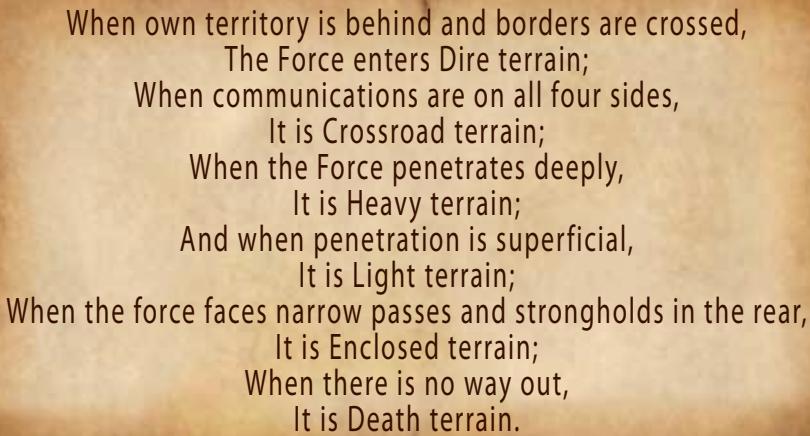
People are the most important asset within a force. This is clearly obvious in the case of air power wherein it requires an extremely long time to train and educate an individual to the necessary technical and professional competence. The operational art involved in the successful application of air power is complex and at any given time a combination of at least two variables. Therefore, the options available to a commander are very large in number, requiring the utmost competency to make the correct decisions. These decisions have to be made within the very limited time frames available in combat situations. The air commander should be able to recognise, understand and respond to developing situations rapidly to fully exploit the responsiveness of air power.

*The air commander must have a clear appreciation of the strategic
and operational situation*

*Flexibility in plans and execution is critical to the success
of an air campaign*

People are the most important assets in an air force

Six Terrains



When own territory is behind and borders are crossed,
The Force enters Dire terrain;
When communications are on all four sides,
It is Crossroad terrain;
When the Force penetrates deeply,
It is Heavy terrain;
And when penetration is superficial,
It is Light terrain;
When the force faces narrow passes and strongholds in the rear,
It is Enclosed terrain;
When there is no way out,
It is Death terrain.

When a force enters adversary territory, moving away from its own, it is entering dire terrain; when lines of communications are all around, it is crossroad terrain; when the force is deep inside adversary territory, it is heavy terrain; when superficial incursion, it is light terrain; when there are strongholds behind and narrow passes ahead of the force it is entering enclosed terrain and when there is no way out, it is death terrain.

In this stanza Sun Tzu describes the fundamental characteristics of different terrains that a force would encounter in its operations. The use of the term 'terrain' is generic as before and could therefore be equated to the area or theatre of operations in contemporary conflict. Sun Tzu delineated six different characteristics that he believed to be of importance in conflict because of their impact on operations. First is the distance of the theatre from one's own territory and home bases which necessitates being in control. Second is the ease of communications. A commander is provided greater information options when dissemination is simple and logistic support lines are secure. Third and fourth are deep and superficial penetrations of one's own forces into adversary territory that will determine the level of cohesiveness of the force. Fifth is the freedom to manoeuvre the force that may be constrained by adversary positioning or by geographic factors that limit the available courses of action. Sixth is a situation where there is no exit route or even the possibility of forcing an exit and the only available option is to fight. Essentially this stanza explains the characteristics that are likely to be encountered in an offensive campaign. The courses of action that are being offered are inherently dangerous, but Sun Tzu advises that well-formed strategy, executed competently, will mitigate the risks involved and deliver a path that will safely lead to success.

In the conduct of an offensive air campaign, the characteristics that Sun Tzu has listed will all have their own influences. A far away theatre of operations will require control of the air over a much larger area to ensure that the advancing forces are not isolated and that the supply chain—that would of necessity have become long—is not disrupted by adversary action. In expeditionary operations, supply lines can become a vulnerable centre of gravity that, if attacked, could have an immediate impact on the progress of the campaign. Air commanders must also prepare contingency plans for air supply for the entire force after considering the capacity of the available airlift to sustain such operations. Ease of communications offers the air commander multiple options and makes it possible to exploit the advantage of being able to provide responsive and adaptive direction to the conflict. This in turn helps to retain the initiative that is inherently a winning situation.

The depth of penetration of one's own forces poses different challenges to the air commander. When the penetration is very deep, the asset requirement for fulfilling all mandatory air component obligations will be in direct proportion to the distance of the theatre inside adversary territory—the deeper inside own forces operate, the greater the requirement. Further, the intensity with which the adversary will contest the air battle or campaign will also increase incrementally with the depth of penetration to an extent wherein further advance may be possible only when the enemy can no longer contest the control of the air. With deep penetration, the responsibility of the commander to monitor and direct the campaign increases manyfold.

The air commander will have to be extremely astute to fathom the combat and airlift requirements, keeping in mind that this is one of the most dynamic situations that could be encountered in offensive campaigning. In going deep into adversary territory, the force runs the risk of gradually being constrained by adversary manoeuvres aimed at limiting the manoeuvre options to the invading force. In air power terms this could mean the denial of control of the air, or at least a constant contest for it. This could lead to a greater amount of capability being assigned to that role to the detriment of other crucial contributions to the surface conflict. The decisions regarding balancing the two requirements, especially when the surface forces are operating deep inside adversary territory, can become extremely vexing and the air commander will need complete professional mastery and expertise to ensure that the joint campaign objectives are not compromised.

Penetration

Penetration is one of the strengths of air power. Because of its reach, perspective, and speed, air power is able to penetrate enemy territory. The concept of the air-land battle was developed to use air power to penetrate

cont.

and hit the enemy's defences, which could otherwise be a formidable physical barrier for friendly land forces. This capacity to penetrate enemy airspace also provides air power with a strategic role, where strike aircraft can attack an enemy's strategic centres of gravity independently.

In the 1930s the idea of penetration was taken to ridiculous lengths. The British Prime Minister Stanley Baldwin was convinced that the bomber would always get through, and there were great fears expressed by the political leaders of many European nations that the next war would be over very quickly because of the penetration and firepower of bomber aircraft.

Ian MacFarling
Air Power Terminology, 2000, p. 91–92

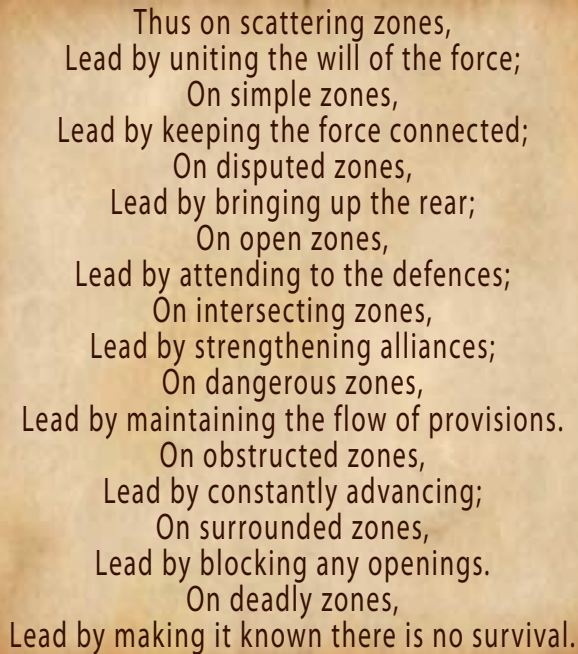
The last characteristic—of not having an exit that can be exercised—is one that a sophisticated air commander should be able to avoid. However, in offensive campaigns such a situation is not improbable and, therefore, it must be taken as a factor in the planning process. There could be two separate issues in this situation. The first could be a battle for control of the air, which cannot be won, yet cannot also be withdrawn from because of the risk to one's own forces if the adversary is allowed to have control. The second is when air power would be charged with extraction of the surface forces from an offensive thrust. For air power this would be one of the most difficult operations to undertake and its success would depend on the level of control of the air and the availability of air power assets. In this situation, air power assets may have to be reallocated from other theatres of operations. Obviously, the need to withdraw from what was conceived and executed as an offensive campaign would require the decision to be made at the politico-military level and therefore the reassignment of air assets will not present that much of a challenge. However, such operations carry the inherent risk of higher attrition than normal, which will have to be accepted.

*Offensive air campaigns are particularly dynamic and require very
astute air commanders to ensure success*

*Ease of communications and security of supply lines are crucial
to winning expeditionary operations*

*Extraction of surface forces from an offensive campaign is
challenging to air power*

Nine Strategic Zones



Thus on scattering zones,
Lead by uniting the will of the force;
On simple zones,
Lead by keeping the force connected;
On disputed zones,
Lead by bringing up the rear;
On open zones,
Lead by attending to the defences;
On intersecting zones,
Lead by strengthening alliances;
On dangerous zones,
Lead by maintaining the flow of provisions.
On obstructed zones,
Lead by constantly advancing;
On surrounded zones,
Lead by blocking any openings.
On deadly zones,
Lead by making it known there is no survival.

Therefore, in scattering zones inspire the force with unity of purpose. In simple zones the force must be closely linked at all times. In disputed zones the force must be made to move rapidly to advantageous positions. In open zones, defences must be strengthened. In intersecting zones, alliances must be consolidated. In dangerous zones, continuous flow of provisions must be ensured. Obstructed zones must be crossed expeditiously. The points of access and egress must be blocked in surrounded zones. In deadly zones the force must be made to realise that there is no survival.

In the beginning of this chapter, under the Situational Response section, Sun Tzu had explained similar situations in terms of 'what' needs to be done when a force is confronted by these nine different situations or zones. Here, he further elaborates on the same and goes into details of 'how' those solutions can best be achieved. Together these two stanzas provide a broader strategic picture of Sun Tzu's axioms in dealing with the nine main situations. This stanza explains the ways in which the force must be led in the nine zones.

In scattering zones no challenge should be offered and the leadership should strive to unite the force; in simple zones the force should not be allowed to rest but moved forward constantly; in disputed zones no attack must be planned, and commanders must consolidate the force by bringing up the rear; in open zones the force must advance continuously while the defences are always shored up; in intersecting zones it is necessary to gather and negotiate in order to strengthen alliances; in dangerous zones the commander should seize the initiative and ensure the uninterrupted flow of provisions; in obstructed zones the force should be kept moving by constantly advancing; in surrounded zones all openings should be blocked and commanders should plan the next manoeuvre while looking for the adversary's weak area; and in deadly zones the commander should ensure that the entire force knows, before entering battle, that without winning there is no survival.

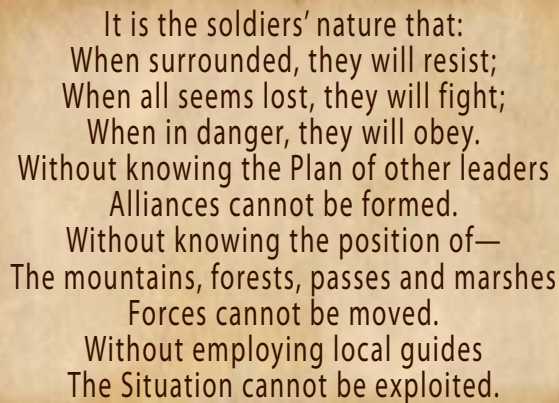
Each of these solutions can further be superimposed on the basic tenets of warfare that Sun Tzu has explained in previous chapters. For example, in obstructed zones, the leader is exhorted to keep moving the force through advances. However, the obstructed situation or zone is such that freedom of manoeuvre is restricted. Therefore, it is necessary to use 'surprise' by ensuring that one's own plans are kept secret from the adversary, thereby making it possible to move the force out of the situation. Ensuring that the force can manoeuvre in this zone is also an example of the planning and execution skills required of a successful commander. There may also be a certain degree of contradiction in some of the operational level solutions being proposed, but when viewed through the broader strategic concepts that Sun Tzu is propounding, these contradictions get resolved. Sun Tzu's axioms have to be understood not merely by the meaning of the words, but contextually within the broader strategic concepts being put forward.

In air power terms this stanza describes the full gamut of situations that could arise at the operational level of an offensive air campaign. When a scattering zone is encountered or when the area of operations is vast, the force should be kept consolidated so that sufficient flexibility is retained to allow concentration of force at the required time and place. In simple zones air power assets should always be mutually supporting so that optimum movements can be undertaken. When moving into disputed zones, the basic consideration should be to ensure that air power is centrally controlled and not stretched out across the entire theatre, since isolated elements can become easy targets to the adversary. Air power should be employed keeping in mind the fundamental rules as explained by Sun Tzu and within the air power tenet of centralised control and decentralised execution. Different interpretations can be provided for the operational employment of air power within the nine zones that have been delineated by Sun Tzu. However, at the strategic level it is necessary to view air power as an entity best controlled and even operated at the highest possible level at all times.

*Air power should be kept consolidated to retain the flexibility
required to concentrate force*

At the operational level, air power assets should be mutually supporting
Air power is best controlled at the strategic level

Soldiers' Psychology



It is the soldiers' nature that:
When surrounded, they will resist;
When all seems lost, they will fight;
When in danger, they will obey.
Without knowing the Plan of other leaders
Alliances cannot be formed.
Without knowing the position of—
The mountains, forests, passes and marshes
Forces cannot be moved.
Without employing local guides
The Situation cannot be exploited.

It is the psychology of the soldier to resist when surrounded, fight when it cannot be avoided and to follow commands explicitly when in desperate circumstances. A commander ignorant of the neighbouring state's plans cannot make alliances with them; if ignorant of the strategic zones' geography, cannot manoeuvre the force effectively; and if without local intelligence cannot gain advantage of the situation.

This is the third part of the section wherein Sun Tzu provides an insight into the human factors in war and states how the soldiers would behave under given conditions. The second part of the stanza is also a lead-in to the next section on leadership and describes the information required for commanders to make the right decisions at the appropriate time. Here it must be remembered that the reactions that Sun Tzu is predicting are those of well-trained and capable soldiers, not those of a lesser calibre force that is poorly led,

conscripted or with no allegiance to the cause. This is also linked to Sun Tzu's earlier stanzas on taking calculated risks and always retaining the offensive capabilities of the force.

In an offensive operation soldiers could face three serious situations, each more dire than the previous. They could become surrounded, leading to a seemingly 'all is lost' situation which can further deteriorate to a dangerous situation wherein the force faces elimination. The force can be made to resist a surrounded situation if they are well led and equipped and have an assurance of relief being on the way. Resistance is also dependent on the availability of critical supplies like ammunition and provisions, which directly affect morale. When the situation deteriorates further and the chances of victory—in the battle being fought—seem to be unachievable, the force should be made to fight to regain the initiative. Once again there are factors that affect the fighting ability, and all of them contribute to the morale or the will to fight. When faced with dangers that could lead to death, soldiers will be more willing to obey orders, provided the leadership is well regarded and trusted. This is a crisis situation and everyone in the team should have a clearly defined role, rather than ambiguous responsibilities that are a luxury of peacetime forces. This individual focus translates directly to a focused team and can only be achieved with inspired leadership at all levels of command.

The first consideration with a general who offers battle should be the glory and honour of his arms; the safety and preservation of his men is only second; but it is in the enterprise and courage resulting from the former that the latter will most assuredly be found. In a retreat, beside the honour of the army, the loss is often equal to two battles. For this reason we should never despair while brave men are to be found with their colours. It is by this means we obtain victory, and deserve to obtain it.

David G. Chandler

Maxim XV, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

Napoleon is thinking here as a continental soldier. Wellington in the Peninsula placed the preservation of England's only field army as his first and overriding priority. Wavell felt much the same in the Middle East, 1940–1, when he was responsible for the fates of nine countries with barely 50,000 British, Commonwealth and Imperial soldiers at his disposal. However, as Wavell demonstrated in his offensive against Italian East Africa and Libya, the advantages of bold attacks—'the glory and honour of his arms'—are not to be discounted as providing the best means to offset daunting numerical disadvantages (in this case over 500,000 Italian troops in the theatre even before the arrival of Rommel in 1941).

In the second part of the stanza, on information requirement and its importance in offensive campaigns, Sun Tzu covers three primary requirements for effective strategic decision-making. First, the commander should have detailed knowledge regarding the strategic plans and objectives of possible allies and friends to create formal alliances. Second, the commander must have sufficient knowledge of the area of operations—both physical and virtual—without which it will be difficult to manoeuvre the force effectively. Third, the commander must have adequate intelligence of the local conditions, without which it will not be possible to have a reliable situational awareness. The last is particularly important in offensive campaigns. If there is adequacy in the information available regarding the three factors, in combination they will provide the strategic commander with the situational awareness required to make superior decisions.

Four brave men who do not know each other will not dare to attack a lion. Four less brave, but knowing each other well, sure of their reliability and consequently of mutual aid, will attack resolutely. There is the science of the organization of armies in a nutshell.

Colonel Charles Ardant Du Pico, 1821–70

Human factors in war and the reaction of soldiers in the face of adversity are common to all three Services. However, there are subtle differences in the command style of the three Services, especially when it comes to shared danger. In air forces, the strategic commanders very seldom come under direct threat from adversary action, whereas a naval commander is as much at risk as the sailor once battle has been joined. While the reactions of the rank and file will be the same, it has also to be acknowledged that in applying air power only a small percentage of the total force actually face physical danger regularly. Therefore, the psychological reactions will be different within the force. The cohesiveness of a unit and the unity of purpose that is built on shared danger are more apparent in the surface forces. Similarly, air forces also have cohesive units with sufficient unity of purpose, but they are shaped in a different manner and require different skill sets from the leadership to command effectively.

From an air power perspective, the second part of the stanza is more important to understand. Alliances will make the difference between having to be completely self-sufficient in equipment and operational requirements, including availability of forward bases in critical locations, and having support from other forces that have interoperability with one's own forces. Similarly, knowledge of the area of operations points to understanding not only the physical terrain but also the prevailing electronic environment that will determine the optimum course of action that should be adopted in launching a campaign. All air operations, especially offensive campaigns, are heavily

reliant on intelligence through airborne surveillance and reconnaissance for correctness of targeting that is a cornerstone for strategic success. Local human intelligence, if available, is the best way to authenticate the selection of targets. At the strategic level of an offensive air campaign, availability of allies, knowledge of the prevailing conditions in the area of operations and availability of accurate intelligence are three fundamental requirements for the commander to exercise decision superiority.

*There are subtle differences in the psychological reaction of troops
in the three Services*

Alliances provide mass and strategic depth to smaller air forces

*Knowledge of prevailing conditions is a prerequisite for the strategic
planning and execution of air campaigns*

Superiority in Command

The Superior Leader

Without knowing every one of the Nine
A Superior Leader cannot Strategise.

When a Superior Leader attacks a powerful state—
The enemy is stopped from concentrating force;
The opponents are overawed,
And alliances are undermined.

The Superior Leader
Does not strive to ally with all the other states;
Nor fosters their power;
But pursues secret designs and overawes the opponents.
This way the Superior Leader
Captures the opponent's fortifications,
And destroys the enemy state.

A commander ignorant of even one of the variations in the strategic zones is unfit to command. When a superior commander attacks a powerful state, it will be impossible for the enemy to concentrate troops and they will be overawed. The adversary's allies will not be able to join together and existing alliances could be undermined. A powerful commander does not ally with all and sundry, nor fosters the power of other states. The commander keeps his intentions obscured, extends his personal influence and relies on his ability to overawe the adversary, thereby capturing cities and overthrowing the enemy state.

As in the previous chapters, Sun Tzu closes this chapter also with injunctions to commanders in four separate stanzas. In this stanza he explains the nuances of conducting an offensive against a powerful state. However, he also cautions that there are many factors in war and a commander should be well versed and knowledgeable about all of them before leading the nation into war. This is straightforward, in that, once a nation has been committed to war, the military commanders are the ones to ensure

victory and, therefore, they must be professional masters. The subtlety is that they must also be part of the decision-making process that commits the nation to war, being able to advise the highest level of government regarding the challenges that the nation may have to face during the course of the war, the probable cost and the probability of victory. This nuanced understanding of the intricacies of war at the strategic level is the unique contribution that military commanders bring to national security planning, making it imperative for military commanders at the highest levels to be strategists and statesmen.

When an offensive is being mounted on a powerful adversary—of equal or maybe even greater stature than one's own military—Sun Tzu advises that, first, the fight should be taken to the adversary, which means that the initiative will be with one's own forces. Second, he states that the adversary should not be allowed to concentrate forces. This would require knowledge of the adversary's plans and possible manoeuvres, which would also identify their weakest point that can then be targeted. This also indicates the use of surprise and, dependent on political situations, even a pre-emptive attack, which could neutralise the need to cater for the adversary's preparedness status. If the weight of attack on the identified weak areas is sufficient to disorientate the adversary it will be possible to overwhelm the force completely.

The third shogun Iemitsu was fond of sword matches. Once when he arranged to see some of his outstanding swordsmen display their skills, he spotted among the gathering a master equestrian by the name of Suwa Bunkuro, and impulsively asked him to take part. Bunkuro responded by saying that he would be pleased to if he could fight on horseback, adding that he could defeat anyone on horseback. Iemitsu was delighted to urge the swordsmen to fight Bunkuro in the style he preferred. As it turned out, Bunkuro was right in his boasting. Brandishing a sword on a prancing horse wasn't something many swordsmen were used to, and Bunkuro easily defeated everyone who dared face him on horseback. Somewhat exasperated, Iemitsu told Munenori to give it a try. Though a bystander on this occasion, Munenori at once complied and mounted a horse. As his horse trotted up to Bunkuro's, Munenori suddenly stopped his horse and slapped the nose of Bunkuro's horse with his wooden sword. Bunkuro's horse reared, and while the famed equestrian was trying to restore his balance, Munenori struck him off his horse.

Hiroaki Sato (Tr)
The Sword and the Mind, 1985

The other action that must be initiated simultaneously is to ensure that the adversary, however powerful they may be, is not allowed to get any support from allies and friendly states. This can be achieved through military intimidation as well as through diplomatic and economic pressures that can be brought to bear at the earliest opportunity. An

isolated adversary, unable to unite its forces, will not be able to present a credible defence making it easier to force their capitulation.

A strategically strong nation will be able to gather allies with minimal effort but these alliances should be built well before the conflict situation arises. A superior commander relies on the strength that the force has through its unity of purpose rather than on superficial strength brought about through alliances. At the strategic level of command, a prescient leader will be able to overawe the adversary through planning that is unfathomable and execution that is unstoppable. Here Sun Tzu is reiterating one of his axioms that success in conflict always requires a clearly superior leader, even more than alliances. A strongly united force with clear and visionary leadership, executing a strategically sound and flexible operational plan has the ability to defeat all adversaries and make even larger states capitulate.

Professional mastery at the strategic level of command is a common requirement for all military commanders. However, when confronting a powerful adversary offensively, the differences in the conduct of campaigns in the different environments become apparent. The air campaign against a powerful adversary should if possible be launched as a pre-emptive strike in order to reduce the capability spread of the adversary as much as possible before it can be brought to bear effectively against one's own forces. This would obviously depend on the prevailing political circumstances, but must be considered as the first option. This course of action also is in line with Sun Tzu's advice to use surprise whenever possible in initiating an offensive campaign. A successful pre-emptive attack has the potential to become a war-winning action by itself, if the target selection and execution of the attack have both been professionally carried out. Air power is also a potent tool in coercion and show of force activities against potential allies of the adversary to keep them isolated. It can also undermine existing alliances by threatening or actually striking vital points of the allies, thereby providing flexible options to the commander. Further, material assistance to the adversary can be interdicted by air power at places far away from the actual area of operations, thereby ensuring that the conflict pattern is not affected.

As the aeroplane is the most mobile weapon we possess, it is destined to become the dominant offensive arm of the future.

J. F. C. Fuller

Air interdiction and ground maneuver must be synchronized so that each complements and reinforces the other. Synchronization is important because it can create a dilemma for the enemy that has no satisfactory answer. His dilemma is this: if he attempts to counter ground maneuver by moving rapidly, he exposes himself to unacceptable losses from air interdiction; yet if he employs measures that are effective at reducing losses caused by air interdiction, he then cannot maneuver fast enough to counter the ground component of the campaign.

Price T. Bingham

The situation being discussed here is one of the more difficult air campaigns that a commander will have to plan and execute. Offensive against an equal or, worse, larger adversary is always an open-ended issue with no assurance of victory to start with. Therefore, getting the initial manoeuvres right and achieving all mission objectives in the initial phase of the campaign are of paramount importance, since the balance can be tilted either way, depending on the capacity of the adversary to absorb the losses. More than in any other air campaign, an offensive against a powerful adversary demands the utmost professional skill from the commander. To a certain extent, victory or defeat is dependent on this one person, all other things considered being equal. The acumen to arrive at rapid decisions and to adapt strategic plans to fit the rapidly changing scenario while continuing to retain sufficient flexibility to be dynamic at all times—in planning and execution—is a quality that all successful air commanders will possess. To a great extent the air campaign at its critical moments revolves around the persona of the air commander.

*The air campaign against a powerful adversary should be launched
as a pre-emptive strike*

Air power is a potent tool in coercion and show of force activities

*The success of the air campaign is dependent on the professional mastery
of the strategic commander*

Unifying the Force

Grant rewards without regard to Principles.
Issue commands without regard to Politics.
Wield the Entire Force as if One.
Wield them to their task—
Without words of explanation.
Wield them to achieve advantages—
Without explaining the dangers.

Then, thrust into a perilous Situation, they will survive;
Trapped in a desperate Situation, they will live.
For it is when a force has fallen into such danger,
That they can snatch victory from defeat.

A commander must transcend rules when conferring rewards and transcend policy when issuing orders, ensuring that the force is employed as one. Set the tasks for the force without letting them know the commander's plan; gain advantage by showing them victories but keep them ignorant of dangers. In this way, when the force is confronted by deadly peril, they will survive and when they are plunged into lethal zones they will live. When a force is placed in such dangers, they will snatch victory from defeat.

This stanza advises the commander on the different methods that can be used to unify the force. The methods suggested by Sun Tzu are particularly applicable to the strategic level of command. He believed that in combat situations the immediate recognition of praiseworthy actions could have a great unifying effect on the whole force. Further, certain circumstances will necessitate ordering the force to carry out manoeuvres even against the laid down norms of the national leadership. Sun Tzu has dealt with this situation earlier and insists that it is the duty of the strategic military commander to 'correct' the civilian leadership, if it becomes necessary to do so, in order to achieve the strategic objectives of the war. The primary aim of the commander should be to retain the cohesive unity of the force at all times, without which the force is likely to face defeat.

An astute commander will be able to achieve their strategic objectives without having to provide detailed explanations to subordinates. The force can be forward through demonstrated victories, even though there may be grave dangers in the implementation of laid down plans. Basically, this is a question of unity of command, holistic capabilities

of the force and, most importantly, the prevailing morale of the force, which a skilful commander should be able to judge and combine to a very fine degree. Although the physical dangers faced by the force are normally at the operational level, the strategic command can have an inordinately high impact on the morale of the fighting elements. There is no substitute for high morale and all commanders have to be acutely aware of this factor, even when the force is at a peacetime status. A well-led force, with high morale will be able to surmount even the gravest dangers and will be able to turn certain defeat into victory. The fighting effectiveness of a force is directly proportional to the quality of its commanders at all levels. Sun Tzu makes this point amply clear a number of times across the entire treatise.

Morale

Morale is the belief which people have—particularly in difficult times—that they can succeed whatever problems they may face. It is a psychological phenomenon that depends on the cause being defended and the quality of leadership, and is often supported by the honour of the organisation. Quality of equipment is not as important, and there have been important victories won by people, who had equipment which was inferior to that being used by their enemies, but believed that their cause was right.

Napoleon Bonaparte maintained that morale was three times as important as logistics. The morale of the Imperial Japanese Forces was extremely high in early 1942. Consequently, it was able to defeat the numerically superior American, British, Dutch, Australian (ABDA) Command forces in the Indonesian archipelago in a very short time with very few casualties. The Japanese Air Force dominated the sky despite brave attempts to counter them, and the Imperial Japanese Navy was still basking in the success of its Pearl Harbor attack. An important point was that the Japanese supply lines were stretched to the limit, and the Japanese Navy had been hit hard at the Battle of the Java Sea on 28 February 1942. The Japanese general commanding the invasion forces in Java had to swim ashore to begin the short ground campaign, which he won decisively.

Ian MacFarling

Air Power Terminology, 2000, p. 76–77

At the strategic level, the leadership guidelines that have been discussed in this stanza are generic and common across all Services. It will be difficult to distinguish between the need for high morale in an infantry battalion, a naval warship or a fighter squadron. The strategic leadership must ensure that there is adequate understanding of the care and attention that is devoted to the strategic planning and execution of combat operations. This requirement is the same in all three Services. In contemporary conflict situations, keeping the operational elements completely in the dark regarding the objectives and

the possible dangers in the expedition may not be a viable proposition. However, commanders at all levels must exercise careful judgement regarding the details that the entire force must be allowed to know without compromising operational security. Perhaps this is much easier to achieve in the application of air power since the 'need to know' is limited to a smaller number of personnel as compared to either the navy or the army.

Air power can be an efficient force in alleviating defeat at the operational level, especially with regard to beleaguered surface forces. Even at the strategic level of conflict, air power can ease the situation considerably and avoid defeat, buying sufficient time for other elements to gradually convert the 'defeat situation' into victory. Without seeming to belabour the point, such activities can only be optimally achieved when control of the air has been assured. Further, one must possess adequate air power assets to achieve the quantum of effort required to carry out other tasks in the short as well as long term. When effectively applied, air power has the capacity to deliver victory even from seemingly disastrous situations, greatly improving the confidence and morale of the entire force. Under these circumstances, the employment of air power is not necessarily restricted to the physical actions of offensive strikes or airlift, but also the psychological aspects that a show of force and declaration of intent that air power can very succinctly demonstrate.

A rapid, powerful transition to the attack—the glinting sword of vengeance—is the most brilliant moment of the defence.

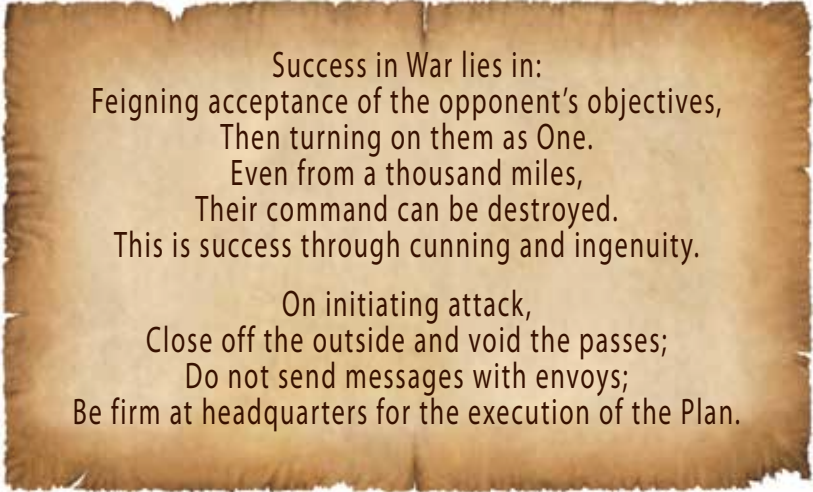
Carl von Clausewitz. 1780–1831

Air power can alleviate a dire situation at the operational level

*The quantum of air power available will determine the course of
action that can be adopted*

Air power can create psychological effects in the battlespace

Feigning Acceptance



Success in War lies in:
Feigning acceptance of the opponent's objectives,
Then turning on them as One.
Even from a thousand miles,
Their command can be destroyed.
This is success through cunning and ingenuity.

On initiating attack,
Close off the outside and void the passes;
Do not send messages with envoys;
Be firm at headquarters for the execution of the Plan.

Success in warfare is achieved by feigned acceptance of the enemy's plans, finding their weakness and then attacking them with full vigour. Once a weakness is identified, by concentrating totally on it the leadership can be eliminated from a thousand miles away. This is the ability of a skilful commander in achieving the objective in an artful and ingenious manner. At the outbreak of hostilities, borders must be closed, travel stopped and there should be no further communications with the adversary's envoys to avoid leakage of information. Complete secrecy of plans must be ensured.

Sun Tzu is alluding to the necessity to pretend initially to be accepting of the enemy plans and, once detailed knowledge regarding the adversary's plans is obtained, to identify the weakness(es) in the plan and exploit it (them) completely. This is an injunction that implicitly brings out the fact that one must expect the adversary also to have brilliant commanders who would, in their turn, make moves that one cannot always foresee, making it necessary to exercise patience and persistence to fathom the adversary plan of action. The adversary's brilliance can redefine victory completely. Only after there is certainty regarding the adversary's course of action should the unified force be concentrated on the weak area of the adversary and a concerted offensive launched. If this action is carefully crafted, it is possible to target the adversary's leadership itself from afar, creating a situation that will in almost all cases lead to success. Sun Tzu likens this strategy to winning through ingenuity—ingenuity in understanding the adversary and having the capacity to develop a strategy that not only counters their course of action but simultaneously exploits their identified weakness.

The second part of the stanza is regarding information security prior to and in conflict situations. As seen in the first part, information is the key to victory in war. Therefore, Sun Tzu believed that as soon as the decision to go to war has been made, the nation's borders should be sealed and foreign envoys not allowed to communicate with the government. At the politico-military level, the war plans must be kept secret, with only the minimum number of persons allowed to be privy to the details of the planning process. The pre-conflict preparations should be done in such a manner that even an astute observer should not be able to connect disparate activities to arrive at a general understanding of the actual plans. This is deception through indirect means. Security of information and manipulation of outside perceptions are constant themes within Sun Tzu's treatise, dealt with in different scales and levels.

Security — Preparations for the Normandy Invasion

One of the most successful examples of military security was the sealing of Southern England in late May and early June 1944 when the Allies prepared for the invasion of Europe on 6 June 1944. They mounted such a multi-faceted security plan that the Nazi leadership was deceived into believing that the landings would be at the Pas de Calais rather than Normandy. Even when the initial landings took place the Germans still believed that it was a feint and the real landing would still occur across the narrowest stretch of water between England and France.

AAP 1000—*Fundamentals of Australian Aerospace Power*, 2002, p. 108

In contemporary air campaigns, one may not always have the luxury of waiting for the adversary to take action and then to react, because if the initiative is ceded to the adversary at the beginning of a campaign, it will be extremely difficult and resource-intensive to regain it. Therefore, the air commander must astutely contest the control of the air while waiting to identify the adversary's strategic centres of gravity. The air commander should be able to manage and manipulate the ebb and tide of the preliminary air battles, appearing to be weakening and drawing the adversary to commit in an area of one's own preference where they can be forcefully struck. This balance is dynamic and therefore the air commander must have the necessary experience and the professional mastery to achieve it at all times. Further, at the opportune moment, decided by the commander, the force should be able to deal devastating blows to the command structure of the adversary. The swiftness and accuracy of these strikes will determine the rapidity with which victory is achieved. Informed decision superiority is one of the foundational building blocks to success in the air campaign.

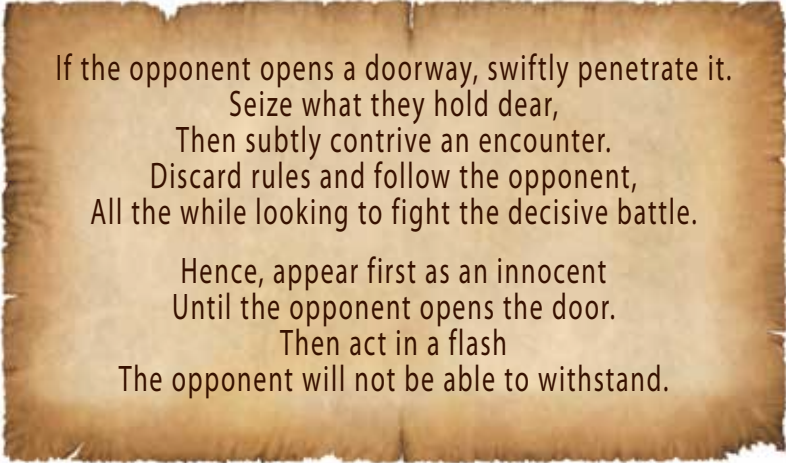
Air campaign planning, obviously must be kept secret, but also needs to build in as many contingencies as possible since it is one of the most dynamic operational activities in the modern battlespace. Information security is cardinal—as it would be for all campaigns—to the success of air campaigns. In addition, there is also the need to assure the accuracy of information that is being used to process the strategic plans into the operational level. This requirement is perhaps more acute in the application of air power than others because of the risk of escalation and the political fallouts that can be expected from air power attacking unacceptable targets. The air commander oversees the planning, execution and alterations in the conduct of the campaign in real-time, which is an onerous task in contemporary joint campaigns. This requires dedicated application of professional mastery achieved through training and education that has helped to instill the necessary leadership skills in individuals.

*Regaining the initiative in an air campaign can be extremely
difficult and resource-intensive*

*Air power application has to be finely balanced in relation to the
adversary's probable course of action*

Information security is cardinal to the success of an air campaign

Seizing the Opportunity



If the opponent opens a doorway, swiftly penetrate it.
Seize what they hold dear,
Then subtly contrive an encounter.
Discard rules and follow the opponent,
All the while looking to fight the decisive battle.

Hence, appear first as an innocent
Until the opponent opens the door.
Then act in a flash
The opponent will not be able to withstand.

When the adversary presents an opportunity it must be seized immediately and their most valuable locations captured without giving prior notice. The doctrine of war dictates that plans must be flexible in order to adjust them to enemy manoeuvres to ensure victory. In the beginning be cautious, swiftly taking advantage of an opening so that the enemy cannot withstand the assault.

Even peace-loving nations will have to be prepared to go to war when necessary and the optimum way to fight a war is to take the offensive at the earliest opportunity. Sun Tzu has repeatedly emphasised that speed is of the essence in warfare and here again he advocates swift action against the identified weak point in the adversary's defences and the seizing of areas or assets that they covet. This will entice them to battle even if their position is not advantageous. It could also divert their attention from their weak areas, providing one's own forces with the opportunity to improve an already advantageous situation. Sun Tzu openly states that in this kind of a situation one must not be unduly concerned about honouring past agreements, and must act when circumstances are right to achieve final victory. The advantage that has been gained in the initial manoeuvring must be used to redefine the battlespace and to dictate the manner in which the critical battles will be fought. The commander should carefully avoid being forced into a situation by adversary manoeuvres and must be able to seize and retain the initiative, control the direction and tempo of the conflict and achieve swift victory. A skilled commander will hide one's true intent, wait for the appropriate opportunity, and then strike aggressively and decisively, thereby ensuring that the adversary will not be able to withstand the assault.

The fundamentals of Sun Tzu's strategy of war are succinctly summarised in this stanza: patience to wait for the right opening to become apparent; swiftness in action to exploit the weakness which may not be long lasting; persistence to doggedly follow the adversary irrespective of previous treaties etc.; total commitment once a course of action has been decided upon; indirect attacks on adversary's weak spots to minimise own losses and maximise the chances of success; and using surprise to augment the probability of victory.

Contemporary campaigns will almost always be joint in nature. Dependent on the breadth of the strategic objectives to be achieved, independent campaigns may or may not be conducted. In all cases however, exploitation of emerging and possibly short-lived opportunities, especially weaknesses within the adversary defence, is best achieved by the application of air power, leveraging off its inherent speed, range, responsiveness and lethality. This joint approach can be further improved by the use of airlift to carry out offensive incursions into adversary territory to neutralise identified centres of gravity that will debilitate the adversary's warfighting capabilities. Swiftness, persistence and surprise, three of the major principles in Sun Tzu's warfighting strategy, are resident in air power

and must be exploited to the maximum at all times. The air commander must be able to identify the opportunities that arise in the conduct of a joint campaign wherein air power will be able to optimise the force's conduct of the campaign. A successful air campaign is critical to the overall success of the joint campaign.

Air power is ideally suited to exploit fleeting opportunities

Airlift offers offensive options to the joint campaign

*A successful air campaign is critical to the overall success
of the joint campaign*

Conclusion

Although it follows the overall format of other chapters by covering leadership requirements at the end, the earlier part is not as well organised. In fact, the axioms move at random from the strategic to the operational and back, reinforcing the belief that this chapter is a collection of disparate thoughts. However, the leadership issues that are covered at the end bring the chapter to a reasonably comprehensive finish by clearly demarcating the challenges that commanders will face in conflict.

From an air power perspective, there are three issues that are covered in detail—flexibility, offensive application of air power and coalition operations. There are a number of advantages that come from understanding the flexibility of air power that a sophisticated commander will be able to optimise as required. This flexibility is best retained through centralised control of air power at as high a level as practical, dependent on the context of its application. A force needs to manoeuvre constantly to retain an advantageous position, even when not actively involved in conflict. The flexibility of air power is ideally suited to achieving this with minimal effort. Further, air power's inherent flexibility allows even small force elements to cover large areas and even counter larger forces that are not well prepared.

Air power has the capacity to control the tempo of operations and can be flexibly employed in support of a strategy of coercion and show of force. The combination of flexibility and responsiveness gives air power the ability to range across the entire spectrum of conflict scenarios and create the necessary effects, aligned with the strategic objectives of the joint campaign. It is also the flexibility of air power that permits air

forces to maintain the required tempo of operations continuously, even during times of comparative peace, and affords it the facility to ramp up the tempo as and when required for combat operations.

Air power is inherently an offensive capability and even when the force is initially on the defensive, an astute air commander will be trying to identify offensive opportunities and the ideal time to transition to the offensive. The strategic planning of an air campaign must always be based on offensive strategies. However, air campaigns must as far as possible be kept short and swift, each individual campaign being unique in its context, execution and required end-state. The success of an air campaign at the strategic level is dependent on two major factors, the ability of the air power elements to concentrate force and the adequacy and security of supply lines.

The offensive stance of air power can also be leveraged when faced with a larger and more powerful adversary by launching pre-emptive strikes to diminish the adversary's warfighting capabilities. However, the political implications of such an action must be considered at the strategic level of planning before the campaign is executed. Although it has already been mentioned before, it is necessary to re-emphasise the need to allocate the first priority to obtaining and maintaining control of the air. It should also be noted that when the adversary has air parity, the quest for control of the air will have to be nuanced and tailored in terms of time and place.

Conducting an air campaign within a coalition, even with allies, is a complex undertaking. The complexity becomes more pronounced when interoperability is marginal and the warfighting abilities are not compatible. All the major characteristics of air power will have to be leveraged favourably to ensure the success of coalition operations. However, it must also be noted that coalitions provide smaller air forces with mass and strategic depth that they lack individually.

A major section of the last part of the chapter deals with leadership issues that are common to all three Services, although they can be tailored to the different environments and the peculiarities of land, maritime or air operations. Decision superiority is always a war-winning factor and commanders are dependent on adequate situational awareness to possess the knowledge that allows decision superiority. The air commanders have to be involved in the joint planning process at the strategic level to ensure that the air campaign objectives are aligned and synchronised with the joint campaign objectives. In achieving this seamlessly, there is also an inherent risk of the air campaign itself becoming diffused that must be guarded against.

Sun Tzu advises commanders to be aware of the requirement to maintain high morale within the force and the cardinal importance of being able to exercise moral courage fearlessly when necessary. Commanders at all levels must be able to improve the cohesiveness of the force through unity of command, purpose and a sense of shared danger. The centrality of decision superiority to success and the need to create the air campaign plan within the framework of the joint campaign cannot be overemphasised.

Professional mastery of the commander is the one major factor that ensures that the conduct of an air campaign is flawlessly perfect.

The air campaign impacts on the scope of the overall campaign and its success is critical to the success of the joint campaign. Only commanders with professional mastery of a high order, able to make superior decisions brought about through situational awareness, will be able to plan and execute an air campaign that, in turn, will ensure victory in the joint campaign.



12

Decisive Thrusts

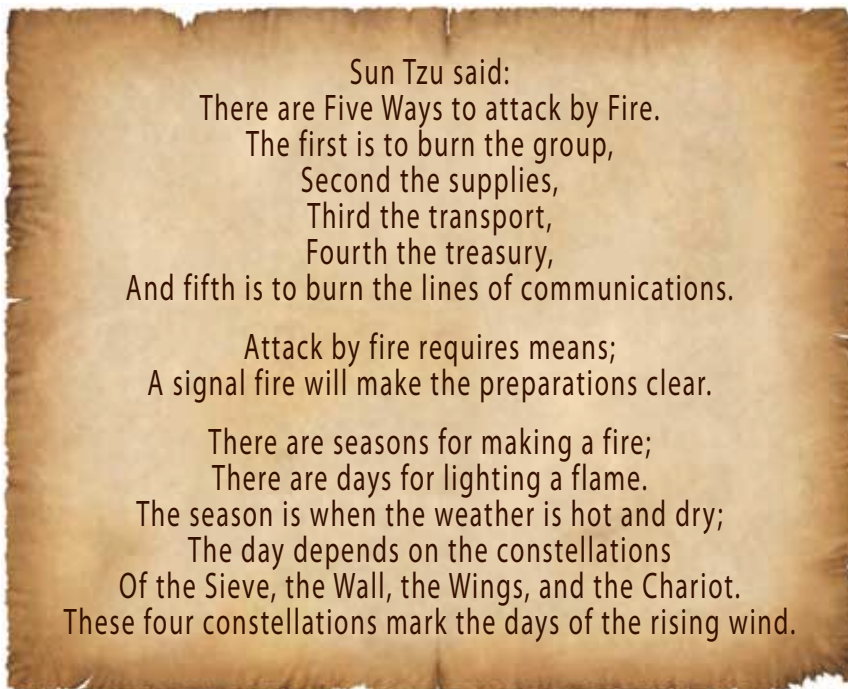
Offensive Air Power

In this chapter Sun Tzu describes the different types of offensive actions that can be initiated in conflict, using fire as the metaphor, and the conditions that would make them successful. The chapter is completely different in character to the others in the treatise, in that it goes into the details of the technical aspects of the actual act of conducting a war. Sun Tzu also connects the operational level actions associated with the conduct of war to the strategic level plans and initiatives to provide a holistic view of the campaign.

A common theme across the entire treatise is Sun Tzu's constant admonition that overt conflict is a destructive option for all concerned and should only be entered into as the last resort in any confrontational situation. A major advice that he provides is to try to win a conflict through the art of manoeuvring rather than resorting to the application of force—an extremely sophisticated and complex strategy to implement. If open conflict became unavoidable, Sun Tzu laid emphasis on

conducting a swift campaign through decisive thrusts aimed at the most vulnerable areas of the adversary. In other words, he advocated rapid and powerful offensive action against the adversary's centres of gravity to obtain rapid victory in the conflict. In this context, the concept of a 'fiery attack' (as the chapter is titled in the original) is Sun Tzu's decisive thrust.

Since the chapter is oriented differently than the others, there is also speculation whether or not Sun Tzu wrote it to be understood at the lowest tactical level or as a metaphor for the conduct of combat operations. Although it can be interpreted either way, considering the timeless strategic thrust of the entire treatise, it is felt that he meant it to be extrapolated metaphorically to encompass maximum possible offensive situations. In any case, it works well as a metaphor for the employment of a force across a theatre, with the word 'fire' denoting the broad offensive capability of a force as a whole that is employed from a strategic perspective. When interpreted in this manner the chapter provides generic guidelines for the employment of a force in terms of how its different capabilities can be used effectively. It also provides details of the methodology to be used for the correct identification of targets. Further, it elaborates on the methods to defend one's own forces from the same capabilities if the adversary chooses to employ them.



There are five primary targets to attack—concentration of personnel; equipment, provisions and stores; supply lines and transportation; economic base of the nation; and lines of communications. Attack by fire must have a

basis and requires a certain methodology, that should lead to deterrence. There are certain suitable seasons and appropriate days to commence the attack. The season is when the weather is hot and dry, and the days are determined by the four constellations that mark increased wind. (The equivalents of the four Chinese constellations named are: the Sieve is Sagittarius, the Wall is Pegasus, the Wings is Crater and the Chariot is Corvus.)

In the first stanza Sun Tzu provides a prioritised list of the centres of gravity of an adversary that should be analysed as critical vulnerabilities to be neutralised at the earliest opportunity to ensure a swift victory. This prioritisation is logical when viewed within the ambit of Sun Tzu's belief that if combat operations have to be undertaken, then the action must be decisive and swift. By carrying out the first decisive thrust against the personnel it will be possible to make them capitulate and thereby avoid further conflict and attendant destruction. By attacking the supplies, transportation, treasury and lines of communication in that order of priority, the attempt is to target the war-making potential of the adversary. The priorities have been laid down in terms of the direct impact that each target system has on the actual combat operational capacity of the adversary.

The second part of the stanza provides the methodology, in terms of the requirements to be fulfilled to conduct an effective attack and also the ideal times to do so. The resources required to be successful must be clearly calculated before the offensive is launched. Although Sun Tzu has couched the advice regarding the timing of the attack in terms of constellations, the concept is to be aware of the seasons and the weather in relation to the geographical area of operations so that the offensive action can be undertaken with minimum external influence. A fiery attack is a decisive thrust and the targets nominated are the centres of gravity of the adversary. At the strategic level, the decisive thrust must be a combined attack using all elements of national power to achieve strategic objectives, essentially the capitulation of the adversary. In Sun Tzu's calculations, the use of force, predominantly the military, should only be the last resort and then swift action must be conducted to achieve victory with minimum destruction. The centres of gravity and the priorities assigned to each of them would be contextually different in each campaign.

In contemporary conflict, air power has the capability to attack any/all of the centres of gravity identified by Sun Tzu in a responsive manner that permits the commander to control the tempo of the campaign. The ability to do so makes air power a very effective deterrent capability at the strategic level, especially when combat operations have not been fully initiated. By demonstrating intent with a show of force and, if necessary, carrying out punitive strikes deterrence can be emphasised. Air power is also crucial for the optimum employment of other elements of national power like economic initiatives by providing airlift for aid positioning, diplomatic overtures by both overt and covert

surveillance activities, and information proposals through the dissemination of relevant data to other government agencies.

USAF Colonel John Warden put forward a targeting theory which exploited the technological developments of precision guided munitions and stealth. One aircraft was now potentially far more destructive than at any time in the past. Many aircraft could now attack many targets simultaneously to surprise and confuse the opponent. He proposed parallel warfare to paralyse the enemy and rejected the Clausewitzian notion that an enemy could be defeated by destroying a single, important centre of gravity.

(Ref: AAP 1000—*Fundamentals of Australian Aerospace Power*, Aerospace Centre, Canberra, 2002 pp. 56–57.)

Clausewitz tended to focus his attention on the actual clash of men and to see that clash as the dominant form of war. Clausewitz may have been right for his time and place and accompanying technology, but it is not clear today that the actual clash of men on the front is the only way or the best way to wage war.

Colonel John Warden
The Future of Air Power in the Aftermath of the Gulf War, 1992

At the operational level, when decisive thrusts in terms of lethal attacks have to be carried out, air power is perhaps the best suited to swift neutralisation of adversary centres of gravity and the rapid conclusion of a conflict. The use of air power will also mitigate the issue of mission creep that accompanies the use of surface forces. It will also lessen the political fallouts that accompany the physical occupation of adversary territory. Picking the right time to carry out the offensive is extremely important in ensuring its success and, more importantly, controlling the duration of the conflict. When optimally employed, air power is capable of controlling the direction and tempo of a campaign and thereby dictating the initiation, conduct and conclusion of a conflict. This is in direct alignment with Sun Tzu's advice.

Air power can attack prioritised centres of gravity in parallel

Air power is an effective deterrent tool

Air power can control the direction and tempo of a conflict

When attacking with fire,
Follow and respond to
These Five Variations of Fire:

If a Fire is started on the inside,
Respond at once from the outside.

If a Fire is started and the Strategy is silence,
Hold back and do not attack.

If a Fire has exhausted its strength,
Pursue if there is opportunity;
Stop if there is not.

If a Fire can be started on the outside,
Do not wait for a time to start it on the inside.

If a Fire starts upwind,
Do not attack from downwind.
In the daytime the wind may last;
At night the wind may stop.

The Force must understand the Five Variations of Fire
In order to analyse its own defence.

In attack, a commander should respond to changing situations and be prepared for five major developments. When fire breaks out inside the enemy camp, respond at once with an attack. If the enemy is calm, bide for time and do not attack. When the fire is exhausted, follow up only if there is opportunity, wait if that is not possible. If fire can be set outside then do not wait for the chance to start fire on the inside. Do not attack from downwind of the fire and use the prevailing conditions to advantage without attempting to counter them. A daytime wind might last long, while a night wind will stop at daylight—there are different conditions that must be considered for attacks by day and night. Commanders must know the adaptations of these five situations.

This stanza is about the need for a commander to be able to identify the changes taking place in the battlespace during an offensive campaign and to employ the force in a sufficiently flexible manner to counter each one of them. Although Sun Tzu details only five fundamental situations, there could be more variations of the primary ones. He also uses 'fire' metaphorically to indicate the actual conditions in the battlespace. Fire breaking out inside the enemy camp is the equivalent of dissension within the camps and associated loss of cohesion within the adversary's forces. This is the ideal time for attack. At the operational level, one's own kinetic actions could be the cause of this confusion. However, if there is relative calm in the adversary's forces, despite indications to the contrary, it is not an opportune time to mount an attack because the adversary will be prepared and not easy to defeat. Similarly, the movement of allies and the supply chain will be an indication of the readiness of the adversary, which must be studied and analysed before commencing an offensive campaign. Attacks during an offensive campaign should be carried out to its planned conclusion. However, follow-on action should be initiated only after assessing the impact of previous actions and the state of the adversary. In all cases, the actions to be initiated would be dependent on the readiness state of the adversary and the commander's appreciation of the prevailing situation.

The stanza should also be interpreted in terms of protecting one's own forces from danger. The fundamental advice from Sun Tzu is to remain calm in case of a counterattack. If one's own defences are well fortified, it will diffuse the adversary's attack better than an immediate response to it. Pre-emptive action has to be well coordinated and planned meticulously to succeed and even then could be a mistake under some conditions. There is an underlying need to understand the security environment and the extreme repercussions of attacking at an inopportune time. Peripheral attacks on secondary targets will only work if sufficient time is available to be devoted to gradually making them central in the decisive thrust. This may not always be possible. These attacks will not be as damaging as attacks on core centres of gravity and the need to conclude the conflict swiftly makes them only a second-tier option. The contemporary battlespace is dynamic enough to disorientate even very capable commanders. Therefore, one's own forces must be educated about the variations that can take place in the battlespace to retain situational awareness and thereby avoid becoming confused. While carrying out decisive offensive actions in the execution of a campaign, it is also necessary simultaneously to ensure the protection of one's own forces. A clear understanding of the variations of attack and changes in the battlespace is essential to prepare effective defences against them.

Responsiveness

Responsiveness is one of the strengths of air power. Aircraft can be deployed rapidly to a forward area during a crisis and begin operations almost immediately. This capability can be a temptation for higher authority to misemploy air power. If aircraft can arrive at a disputed area before either land or maritime forces, they may be employed in tasks that are not appropriate or could be done more effectively by the land or maritime units.

On 3 November 1988 a group of 200 Tamil mercenaries took over the island nation of the Maldives in the central Indian Ocean. They were employed by two dissident Malaysians who were the only nationals to be involved in the coup attempt. The Indian Government—despite being a supporter of Tamil activities in Sri Lanka—decided to take action against the plotters. It was able to respond very quickly and sent army units by air to capture the mercenary group and restore order. The speed with which the Indian Armed Forces responded caught the mercenaries by surprise, which accounts in part for the lack of casualties. They launched Operation *Cactus* with an airborne assault on the capital Male and by the morning of 6 November 1988 the mercenaries and their Malaysian employers had been captured while fleeing to Sri Lanka.

Ian MacFarling
Air Power Terminology, 2000, p. 111

From an air power perspective, the decisive thrusts or actions can either be strategic or operational, dependent on the plan of action that is being adopted. When functioning within a whole-of-nation approach to the emerging security situation, air power contribution will always be strategic in nature. This is so even if some part of the air power involvement culminates in a operational level actions aimed at creating a particular effect. Air power has the inherent capability to monitor the unfolding of events within the battlespace and provide information to the commander, while its responsiveness ensures that it will be able to react faster than any other force application capability to emergent threats. In an offensive campaign, air power is critical to ensuring the swift finalisation of the conflict.

By intelligently combining its surveillance capabilities with the capacity to carry out lethal attacks with great range penetration and precision, air power can become the primary element in the prosecution of a focused campaign. This is adhering to Sun Tzu's injunction to know the environment and tailor the manner in which 'fire' is employed to maximum advantage. Neutralisation of identified centres of gravity, with precision and discrimination, is the primary requirement to winning a short and sharp campaign.

Air power provides this capability without many of the attendant challenges, mainly political, that comes with the use of surface forces.

Thanh Hoa Bridge

In the closing stages of the war in Vietnam—on 13 May 1972, to be precise—a road rail bridge over the Ma River at Thanh Hoa was destroyed by a laser-guided bomb dropped from a USAF F-4 Phantom. This bridge was on the main communication route from Hanoi to the south and it had been attacked by more than 700 sorties since April 1965. Although it had sustained damage during these attacks, it had remained intact. It was also fiercely defended and, while conducting operations against it for some seven years, many US airmen and aircraft were lost.

AAP 1000—*Fundamentals of Australian Aerospace Power*,
Aerospace centre, Canberra, 2002, p. 134

Protecting and defending one's own forces is also comparatively easier if air power is being employed as the lead while initiating a joint offensive campaign. By obtaining and maintaining control of the air from the beginning of the campaign, the adversary can be denied the ability to employ the variations of 'fire' mentioned by Sun Tzu, thereby ensuring the safety of own forces. This situation also assures the surface forces adequate freedom of manoeuvre. In keeping with Sun Tzu's advice to resort to offensive action only as a last measure and then to be swift in obtaining victory, air power can be tailored in its use, can assure the protection of own forces and provide an extremely flexible offensive option to the commander.

Air power's contribution to a whole-of-nation approach to security is normally at the strategic level

Air power is critical to the swift finalisation of an offensive campaign

Protecting one's own forces is far easier when air power is the lead in an offensive campaign

Those who are reinforced by Fire in the attack are enlightened.
Those who are reinforced with water in the attack are powerful,
For water can isolate but cannot overcome.

To challenge and win
And Attack and take control,
But not to follow through,
Is a disastrous waste.

Therefore it is said:
'The enlightened ruler calculates deeply;
The effective general follows through.'

Those who use fire to assist their attack are intelligent and those who use inundations are powerful. Water can be useful to isolate and divide the enemy, but it lacks the terrible destructive power of fire. Fire can help win victory. After winning battles and achieving the objectives, if these achievements are not exploited, it is a waste of effort. Therefore, it is said, an enlightened government lays out deliberate plans well ahead and the skilful commander cultivates resources and executes the plans.

Both fire and water are environmental factors and both have an element of change embedded in them. Water is a metaphor that Sun Tzu uses to indicate change or shifting trends and, from a battlespace context, it represents the dynamism inherent in a combat situation. While it may be necessary to counter the changes taking place in the battlespace, if possible the force should be kept away from the impact of the changes taking place. Fire is all-consuming and provides the wherewithal to obtain victory, whereas water is only capable of isolating and dividing the adversary force and thereby increasing the comparative strength of one's own forces. Therefore, the changes within the battlespace should also be studied accordingly. Gradual changes can be created and exploited to weaken the adversary, whereas rapid changes can be used to overwhelm them. Similarly, if one's own forces are on the defensive, gradual changes should be carefully accommodated and contained, and unforeseen and rapid changes must be dealt with immediately since they have the potential to overwhelm the defences. This requires a great flexibility from both the commander and the force.

In classic Sun Tzu style, the stanza advocates not only winning the conflict, but ensuring that the victory produces an advancement in one's own situation. Sun Tzu constantly emphasised that every victory in conflict must be accompanied by an equally visible

improvement in the position of the nation. The test of good leadership is in ensuring that operational battlefield victories translate to national victories at the strategic level. Strategy is not only about creating opportunities but, equally, about identifying existing opportunities and exploiting them to one's own advantage. Identifying opportunities to exploit is one of the most difficult tasks of a commander. However, it is also vital because it translates to expending lesser resources in weakening the adversary and winning battles. As in most other chapters, Sun Tzu finishes this stanza with the injunction to leadership—both civilian and military—at the highest strategic levels to ensure that every risk that the nation takes is carefully deliberated on and all conflict situations are adequately resourced to ensure victory. Throughout the treatise Sun Tzu does not consider defeat as an option. By following his laid down strategies, victory is always assured.

The metaphor of water and fire can be equated to the application of air power in non-combat operations and carrying out actual lethal attacks. Airlift, surveillance and other benign activities can shape the battlespace but will not be able either to dominate it or defeat the adversary. These shaping activities continue to create the necessary effects in a gradual manner. In conflict, victory requires the concerted application of lethal firepower, through strategic attacks or contribution to surface force manoeuvre through joint fires. The inherent dynamism of air power can very rapidly alter the nature and tempo of a battle, campaign or war by creating change and uncertainty and providing the commander with the opportunistic option to dislocate the adversary's forces. Air power capabilities are normally constrained in most forces because of a number of extraneous factors. A commander must, therefore, be able to take advantage of every triumph and optimise the use of air power to conserve air assets for future utilisation. Continually exploiting even incremental advantages gained is one of the primary requirements for effective command.

All campaigns need meticulous planning, but an offensive campaign that must be won within the shortest possible time frame requires the maximum attention from strategic commanders from the planning stage itself. While the actual conduct of the campaign is an operational level duty, the success or failure of the campaign to achieve the desired end-state will be determined at the strategic level of civil-military leadership. The decision to launch an offensive should only be made at that level for a number of reasons—primarily to ensure adequacy of resources and to limit the political fallouts that come from aggressive action. Further, an offensive air campaign is one of the most complex operations and the dedicated planning and constant oversight required to ensure its successful execution can only be provided at the strategic level.

In forming the plan of a campaign, it is requisite to foresee everything the enemy may do, and to be prepared with the necessary means to counteract it. Plans of campaign may be modified *ad infinitum* according to circumstances, the genius of the general, the character of the troops and the features of the country.

David D. Chandler

Maxim II, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

This remains as true as ever of any modern war. 'When making plans,' Churchill once remarked, 'it is well to take into account those of the enemy.'

A classic case of failing to observe this maxim was the Falklands War of 1982. The Argentinians indubitably achieved strategic surprise by seizing the islands when they did—but then they fatally miscalculated the determination of the British response. Despite a considerable period for counter-invasion preparations, they failed to make the islands impregnable against the British Expeditionary Task Force. The effects of bombs and French-supplied Exocet airborne missiles proved unexpectedly grave for the vulnerable British frigates and supply ships (one thinks of HMS Sheffield and HMS Ardent, Sir Galahad and Atlantic Conveyor), but it was the superiority in the air—aircraft to aircraft—enjoyed by the British Harriers and the tough fighting skills of regular paratroopers and Royal Marines pitted mainly against raw Argentinian conscripts, and above all the firm and unwavering resolve of the Thatcher government at the political level that General Galtieri and his advisers failed to take into account or prepare adequately for.

Obviously, flexibility of planning remains absolutely vital, taking into account the same factors that Napoleon mentioned. Thus the accurate and flexible Israeli assessments of their various Arab opponents' capabilities underlay their success in the Six Day War and the Yom Kippur War—although on the latter occasion the Egyptians gained initial surprise by the timing and form of attack over the Suez Canal against the undermanned Bar-Lev Line. But the Israelis then reacted strongly and highly effectively. In overall terms, therefore, Napoleon's maxim that what is needed is 'a plan of many branches' remains as true today as in the 1800s.

The tenet of centralised control and decentralised execution is very important in these circumstances because of four major factors. One, air power capabilities are almost always limited by resource scarcity and therefore operate under limiting constraints at all times. Two, a comprehensive air campaign will include a range of actions, often carried out concurrently, requiring the optimisation of air asset employment. Three, air campaigns are normally waged across a very large area since they conduct operations not only in the immediate battlespace but also beyond and around it constantly. Four, all of the above

three factors are open to dynamic changes at all times, requiring constant monitoring and adaptation of the strategic plan.

The benign capabilities of air power can shape the battlespace, but lethal application of force is required to obtain victory in conflict

Offensive air campaigns are best controlled at the strategic level of command

Adhering to the tenet of centralised control and decentralised execution is most important in offensive air campaigns

Never move, except for advantage;
Never deploy, except for victory;
Never fight, except in a crisis.

A ruler should not mobilise men out of anger;
A commander should not engage in battle out of spite.

Move if advantageous,
If not, stop.

Anger can cycle back to fondness,
And spite to satisfaction.
But a nation destroyed cannot cycle back to survival,
And those who are destroyed, cycle back to life.

Thus, a brilliant Ruler is prudent;
The effective general is on guard.

Such is the Tao of to keep a nation at peace;
And an army a complete force.

If it is not in the interest of the state, do not act; do not use troops unless success is assured; and if not in danger do not fight. A government should not mobilise an army out of anger and commanders should not provoke war out of wrath. Only manoeuvre forces to create an advantage. For those enraged may be happy again and those infuriated may be cheerful again; but annihilated countries may never exist again, nor may the dead ever live again. The enlightened

*government is careful about this and a good military leadership is alert to this.
This is the way to keep a nation in peace and the military forces intact.*

The constant refrain in Sun Tzu's treatise is that one must manoeuvre only when there is certain to be advantage from doing so and not for the sake of moving the force. There are also personality traits that Sun Tzu identifies as being negative in 'rulers', meaning both the civilian leadership and the military commanders, that he cautions against and which could lead to precipitative actions if not deliberately controlled. Essentially in this stanza Sun Tzu advises against taking action without considerable thought and deliberations, and being objective in these decisions, keeping emotions at bay. He provides the examples of the difficulty or impossibility of recreating a destroyed nation or the bringing back to life of a dead soldier to illustrate the serious repercussions of the decisions that have to be made. The stanza cautions all in power to exercise prudence and caution to ensure that the nation is safe and the military intact; in other words to avoid open conflict as far as possible.

All wars should be governed by certain principles, for every war should have a definite object, and be conducted according to the rules of art. War should only be undertaken with forces proportioned to the obstacles to be overcome.

David G. Chandler

Maxim V, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

The need for a clear aim in any way is self-evident (and arguably was lacking when the USA intervened in strength in Vietnam). This maxim has been taken to imply slavish adherence to the so-called 'Principles of War'—surprise, concentration of force, flexibility, security, morale and the rest (the lists have varied and still vary between countries and periods), and in particular to that of 'Economy of Force'. In fact such an attitude is almost invariably fatal; as mentioned above, 'principles' are supposed to be 'guides to possible conduct', never hard and fast rules. There is, however, some general acceptability about the need to tailor 'means' and 'ends' in any war.

This is a generic stanza in line with the basics of strategy that Sun Tzu advocates throughout the treatise. It also lists and explains the possible pitfalls in leadership that should be guarded against. It provides very clear advice regarding the need to avoid unnecessary movements of the force, as well as the means to keep a nation safe. The underlying theme of the treatise, and even in this chapter that deals with the conduct of battle, is the avoidance of conflict, and the winning of the 'war' through psychological

measures. This can be achieved through a number of methods, some direct, some indirect, some obscure and some steeped in philosophy that is unfathomable except to the most sophisticated of commanders.

*Military forces should be engaged in conflict only after
considerable deliberations*

*Both military and civilian leadership should be aware of
pitfalls in command*

Overt conflict must be avoided as far as possible

Conclusion

There is a viewpoint that the five ‘ways of attacking by fire’ that are listed is Sun Tzu’s metaphorical way of relating back to the five fundamental factors in strategy that were explained in the first chapter—Tao, Nature, Situation, Leadership and Art. If the five ways of attacking by fire are superimposed on these—Tao or philosophy could be considered to devolve around personnel; Nature or time to the supplies in terms of their adequacy and availability; Situation or ground to transport regarding the distance, terrain and other physical aspects; Leadership to treasury in relation to planning, resource availability and allocation; and Art or organisation to the lines of communications that relate to the methods of employing the force.

Sun Tzu very clearly states in this chapter that the employment of military forces to achieve the desired political end-state should only be done after very careful deliberations at the grand strategic level of the nation. Even then, the advice is to avoid conflict as far as possible. Sun Tzu also provides an insight into the pitfalls that a less prescient leadership—military and civilian—could face when leading a nation into war. However, since this chapter is consciously written in manner that it is open to interpretation in the literal sense of the words and metaphorically, if so desired, Sun Tzu provides very succinct guidelines to the employment of force—in this case air power.

There is no doubt that in contemporary conflict, an offensive campaign stands a far greater chance of success if air power is available to be used optimally. Sun Tzu’s axioms can be interpreted at two levels of the application of air power, one that remains at the strategic level and the other that dips down into the operational level of the conduct

of an offensive campaign. At the strategic level, air power can be used as an effective deterrent capability, especially if being employed within the larger whole-of-nation security strategy. Further, air power has the inherent capability to control the tempo and direction of a conflict, provided its employment is controlled at the strategic level by commanders who are professional masters.

At the operational level, air power is critical to swift victory, one of the more important axioms that Sun Tzu advocates a number of times in the treatise. The benign capabilities of air power, such as airlift and surveillance, will be able to shape the battlespace effectively, but to achieve unequivocal victory it is necessary to apply lethal force, with discrimination, proportionality and accuracy. Air power is ideally suited to achieving this, with the added capability to attack prioritised centres of gravity of the adversary in parallel.

Offensive air campaigns are best controlled at the strategic level of command and executed at the appropriate lower level. Sun Tzu's advice in this chapter translates to one of the fundamental tenets of the employment of air power that has stood the test of time—centralised control and decentralised execution.



13

The Use of Intelligence

Information Warfare

This concluding chapter explains the necessity and importance of intelligence work, elaborates on dealing with agents and counteragents, and concludes by illustrating how the achievement of military objectives is deeply influenced by intelligence work and the quality of information and knowledge that is produced. In this chapter Sun Tzu has the most humanitarian approach to warfare as compared to all the other chapters in the entire treatise, in that he describes how intelligence can be used to avoid costly military mistakes that would otherwise result in great human suffering.

Sun Tzu demonstrated the importance of intelligence to victory in battle by emphasising that the greatest rewards and the most generous support should be given to the elements involved in intelligence gathering. He also stated that brilliant leaders will be able to coordinate and use intelligence sources in such a way as to provide them with clear and unbroken information

regarding the prevailing situation at all times, both in war and peace. A well-planned and skilfully executed intelligence gathering and dissemination strategy is vital to the success of a military campaign. It is essential to know the factors that drive the adversary strategy and the direction they are likely to take in a conflict in order to formulate one's own strategies.

Information regarding the adversary, their past experiences and future aspirations, must be located, collected and placed in context, so that their manoeuvres—military and others—can be analysed and understood in their entirety. This is the optimum way to develop one's own strategy for victory in a confrontation with a particular adversary. Sun Tzu recognised the importance of intelligence, especially advance information that he called foreknowledge, in avoiding being surprised in conflict, which is the real enemy in confrontations. At the same time, by keeping one's own strategy carefully concealed, away from the adversary's intelligence network, one can create an element of surprise for the adversary.

In this chapter Sun Tzu offers a pragmatic opinion regarding the need for accurate information while denigrating the use of superstitious or mystical methods of prediction as opposed to basing it on realistic, reliable data. Considering the period when the treatise was written, this is a remarkably modern attitude. Since human intelligence was the primary means of gathering information in ancient times, the chapter actually highlights its importance in the context of campaigns of the time. Although some analysts subscribe to the viewpoint that this chapter was added at a later stage after the main treatise was completed, there is no evidence to support it or to indicate that Sun Tzu himself did not write the chapter. The style and the breakdown of the contents of the chapter are the same as the other chapters and it is felt that this chapter forms an integral part of Sun Tzu's *Art of War*.

In the translation of the stanzas of the chapter, reproduced below, the term 'intelligence' has been used instead of the word 'spy' that some other translations and interpretations use, in order to bring them to a contemporary context. This is more so since in the contemporary environment the majority of intelligence is gathered by means other than physical human collection. Currently there is a pervasive feeling that this move away from human intelligence or 'humint' has led to the lowering of the assurance level regarding the accuracy of information that is gathered. There is no clear-cut solution to this conundrum. However, in contemporary security situations, a balanced combination of technological methods and humint may be the optimum way forward to ensuring information superiority.

As we enter a new technological age, devising the proper national security strategy can have a profound effect on the outcome of war. There is no better example than the French approach after World War I. During the interwar period from 1919 to 1939, France formulated a weak and vulnerable strategy of forward defense, driven by her obsession with the methodical battle technique perfected at the end of World War I. On 10 May 1940, the world watched with horror as Germany, with far fewer resources, successfully invaded the Low Countries and Northern France. Germany had made the right strategic choices; her blitzkrieg concept of warfighting took full advantage of the mechanization of warfare. While France was mired in an older strategy, Germany was energized by emerging technology to develop a bold offensive strategy.

Today, man's ways of making war are changing again because of new information age technologies. What can we do today to avoid repeating the French debacle? In *War and Anti-War*, Alvin and Heidi Toffler argue that we need to formulate a capstone concept of knowledge strategy to effectively take advantage of these information age technologies. In other words, we need to understand the *ends, ways and means* of information age strategy.

Change introduced by the information age is arguably greater than that which faced the post-World War I nations. Moreover, knowledge strategy encompasses more than the military element of power. Knowledge strategy must also address the political and economic aspects of power, which become even more useful in the information age. Further, the extent to which we allow our organizational structures and social patterns to change will determine the success of knowledge strategy.

Lt Col William R. Fast, US Army,
Sun Tzu and Information Warfare, 1997

Obtaining Foreknowledge

Raising an army of a hundred thousand
And marching them a thousand miles to put forth a Strategy
Drains the income of the people and the public treasury
To the daily sum of a thousand pieces of gold.

There will be upheaval at home and abroad.
On the path of Tao there will be negligence.
The work and property of seven hundred thousand will be
disrupted.

But mutual defences will be maintained for years,
Just to compete for one day of triumph.

It is callous
To begrudge a hundred pieces of gold
For knowledge of the enemy's situation.
Such a miser is no commander of men,
No supporter of the lord
Nor master of victory.

A major military operation is a severe drain on resources and can cause both domestic and international upheavals as well as disruption of the nation's economic growth. However, hostile forces can face each other for years striving for victory which could then be decided in a single day. This being so, to fail to know the conditions of adversaries because of reluctance to expend resources on intelligence is to be unaware of the interest of the State and the people. This is uncharacteristic of a good leader, extremely inhumane and not indicative of a victorious commander.

Sun Tzu starts the chapter with a stanza that describes in minute detail the tremendous cost of mounting a military operation that must be borne by the people and the State. The costs delineated are in terms of finances and other resources, physical costs in terms of loss of life and limb, and the ongoing or running costs incurred by having to maintain a large military force at operational readiness for long durations. This expense

becomes even more unpalatable when the final outcome of the conflict itself may be determined by a single short and sharp confrontation. The preparations for conflict and the prolonged expenditure of resources in maintaining the military forces at the required readiness state can have a devastating impact on the domestic economy. This in turn might create an untenable situation for the government. Dependent on the size of the economy of a nation and its connections to other national economies, these effects could have a ripple effect even outside the State.

Since the holistic costs of operations are so high, it is the responsibility of commanders to ensure that the nation always triumphs in conflict. This creates cascading effects in that the assurance of victory is almost completely dependent on knowledge of the adversary obtained through intelligence. Sun Tzu states that a commander, who is unwilling to spend the necessary resources to ensure the sufficiency and infallibility of intelligence, is extraordinarily inhumane. He explains that by being miserly, the commander is not saving any resources of the nation, but on the other hand is increasing the chances of defeat and the accompanying hardships for his force and the entire nation because of the possibility of prolonging a conflict. The onus of responsibility for gathering appropriate and adequate information is that of the commander, and one who does not lay sufficient emphasis on this aspect of warfare is not loyal to the nation and unlikely to be victorious.

Contemporary conflict is as expensive on the State exchequer as it was in Sun Tzu's times, perhaps more so in terms of the awareness of the general population of the state of the nation's economy. Air power assets in particular are extremely expensive to procure and operate and their capabilities are resource intensive to maintain at an acceptable level of readiness. Therefore, they must be employed very cautiously. However, from an information superiority perspective, it is air power that is at the forefront of intelligence gathering, thereby becoming a double-edged sword, when viewed purely through the prism of resource expenditure. A well-thought-through balance—in strategy and concept of operations—has to be maintained to ensure that, at the strategic level, the benefits of the intelligence gained outweigh the expenditure of operating airborne surveillance and reconnaissance assets.

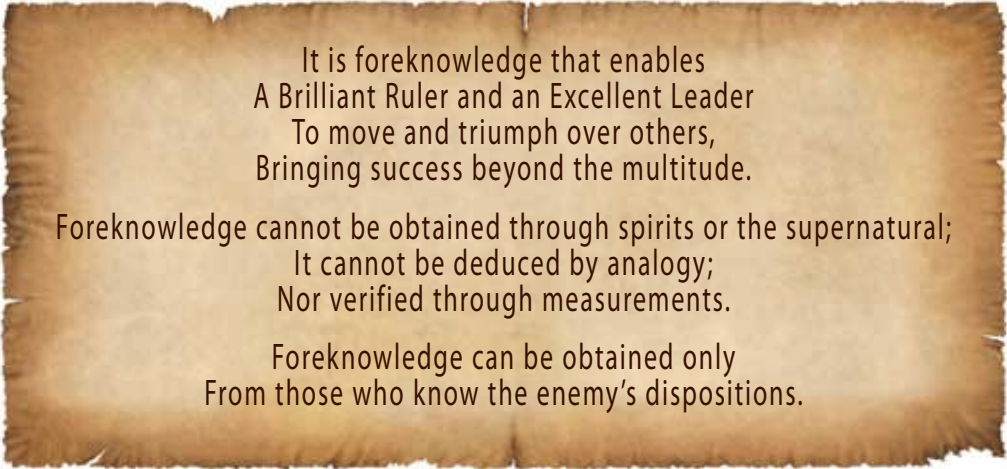
In the prevailing security environment, the need to have accurate and assured intelligence is critical to formulating a successful national security strategy. Considering that warlike scenarios when overt ISR (Intelligence, Surveillance and Reconnaissance) can be undertaken are not commonplace, intelligence gathering capabilities assume greater importance. In certain contexts, it may even be advantageous to let the adversary know that their actions are being monitored, since it will contribute indirectly to the concept of deterrence. Sun Tzu's admonition not to be miserly when resources are required for gathering intelligence stands completely vindicated in the contemporary security scenario. It is the responsibility of the government of the nation to ensure that adequate financial and other resources are made available to the military forces to create a sufficiently robust intelligence gathering, analysing and disseminating system that

is commensurate in quantum of capability with the declared security strategy of the nation. The thread that connects resource allocation, adequacy of intelligence, military preparedness and the high probability of victory in conflict is as strong in the current environment as it was in Sun Tzu's time. The concept—balancing the ends, ways and means of strategies—remains constant, only the methods to achieve the desired political end-state have changed.

Air power assets are at the forefront of ISR operations

Resource expenditure and strategic level benefits of information operations must be balanced

Governments must ensure ISR operations are adequately resourced to ensure information superiority



It is foreknowledge that enables
A Brilliant Ruler and an Excellent Leader
To move and triumph over others,
Bringing success beyond the multitude.

Foreknowledge cannot be obtained through spirits or the supernatural;
It cannot be deduced by analogy;
Nor verified through measurements.

Foreknowledge can be obtained only
From those who know the enemy's dispositions.

What enables the wise government and the good commander to strike and conquer, to achieve things beyond the reach of ordinary men, is foreknowledge. This foreknowledge cannot be elicited from spirits, cannot be obtained inductively from experience, nor by any deductive calculation. Knowledge of the enemy's dispositions can only be obtained from people who know their condition.

The whole art of war consists in getting at what is on the other side of the hill, or, in other words, in learning what we do not know from what we do.

Arthur Wellesley, First Duke of Wellington

Foreknowledge or prescience is the basis for the success of an excellent commander, since such knowledge makes it comparatively easy to formulate winning strategies that would defeat the adversary whose strategic plans and operational concepts are already known through intelligence. In the military context, knowledge is the foundation for vision, an understanding of what the future might hold, which is based on a clear appreciation of the plans of the adversary. Sun Tzu very clearly denounces the concept of using non-scientific methods to predict the future and also reliance on analysis that is based on conjunctures and less than factual data.

In Sun Tzu's time, accurate foreknowledge was only obtainable from people who physically knew the adversary's dispositions. However, in contemporary terms, information can also be gathered from a number of other sources, both overt and covert, with growing emphasis on the use of technology. The common factor here is the role of people, whether physically gathering information as humint or analysing information obtained from other sources to confirm its veracity and usefulness. In all cases, it is this knowledge that will provide the necessary and vital input to commanders to achieve decision superiority that will lead to success in conflict.

This stanza is as true today as it was when Sun Tzu wrote it in antiquity. Only foreknowledge of the adversary and their plans can provide complete assurance of success to one's own strategy, provided it has been designed with the built-in capability to cater for the dynamic conflict environment. This is true of all commanders, irrespective of the environment in which they operate. A majority of the ISR assets in contemporary conflict areas will be airborne and, therefore, the allocation of these assets to the appropriate areas becomes an additional responsibility of the air commander. In contemporary conflict, air power is the primary provider of foreknowledge, created through the skilled employment of airborne and space-based assets that gather information on a continuous basis. However, these assets are extremely expensive to acquire and operate and also require specialised technological training for the personnel. This contributes to a situation wherein the demand for intelligence can never be met to the complete satisfaction of all commanders. The air commander has to be extremely astute in allocating ISR resources and prioritising their employment. There is also a need to conserve a certain amount of the capability to be used in emergencies and for unforeseen situations that might arise in the course of a campaign, which further complicates the role of the commander in directing the use of ISR assets.

By 'intelligence' we mean every sort of information about the enemy and his country—the basis, in short, of our plans and operations. If we consider the actual basis of this information, how unreliable and transient it is, we soon realize that war is a flimsy structure that can easily collapse and bury us in ruins. The textbooks agree, of course, that we should only believe reliable intelligence, and should never cease to be suspicious, but what is the use of such feeble maxims? They belong to that wisdom which for want of anything better scribblers of systems and compendia resort to when they run out of ideas.

Carl von Clausewitz

On War, Michael Howard and Peter Paret (Translated), 1976

It is almost certain that a nation by itself will not possess the full spectrum of airborne and space-based ISR assets and capabilities and, therefore, will also be reliant on allies and partners for the provision of intelligence. However, the nature of alliances and international relationships is such that it creates the drawback of available intelligence not necessarily being complete because of a number of factors like, interoperability, doctrinal differences, rules of engagement etc. Sun Tzu's injunction that foreknowledge is vital to success in conflict is a clear pointer to the necessity for a nation to apply all possible effort to 'nurture' these relationships. However, these are the realities of contemporary conflict and strategic commanders and civilian leadership alike should be aware of them and would have to cater for these exigencies when committing a nation to war.

***Foreknowledge of adversary plans can make one's own
strategy successful***

***The demand for information can never be fully met, increasing the
strategic air commander's responsibilities***

Alliances will have to be relied on to complete the information picture

The Divine Web

There are five sorts of Intelligence:
Local,
Inside,
Counterintelligence,
Deadly and
Secure.

When the five Intelligence all occur together
And none know of the method,
This is called the Divine Web.
It is the treasure of the Ruler.

Local Intelligence comes from natives showing the way;
Inside Intelligence from the enemy's officials;
Counterintelligence from the opponent's Intelligence.

Deadly Intelligence is deliberately created false
information,
Knowingly passed to the enemy.
Secure Intelligence is to be trusted.

There are five sorts of secret agents or spies—local, inside, counter, deadly and secure. When all of them are working simultaneously and no-one knows their methods of operation, it is achieved through organisational genius and they are treasures of a government. Local spies are hired from among the people of a locality, inside spies from among enemy officials and counter spies from among enemy spies. Deadly spies are own spies who are deliberately given fabricated information and used to spread it, and secure spies are those who return with accurate information.

Sun Tzu's words have been translated most commonly to mean different kinds of 'spies'; however, the Chinese words that are used in the original could also be translated to mean channels of information. This stanza therefore, could be taken literally as discussing the different kinds of 'spies', their application and the explanation of the five types of intelligence that they provide. Alternatively, it could mean five different types of information channels. In the modern context, commanders, except those directly responsible for the allocation of ISR resources, are less interested in the information

sources than the product. The term 'spy' itself has become anachronistic. Information is multidimensional and, therefore, it is necessary to analyse and correlate all the five types of information available to create a complete strategic picture. When a nation has the organisational structure in place to have all five channels of information gathering operating simultaneously and the facility to combine and convert the inputs from all the five sources, and the entire process conducted with security that cannot be breached, the operation is almost foolproof. The intelligence so produced will be of the highest quality and accuracy.

Intelligence

Intelligence is the information produced by a country's intelligence and security organisations on the activities and capabilities of the nation's enemies. The information must be the product of close analysis and evaluation of all available data and be set in context so that it gives useful insight into the enemy's future actions.

After the Yom Kippur War of 1973 several senior Israeli intelligence officers were removed from their posts. The complaint against them was that they knew everything about the Arab capabilities but had little concept of how the Arab nations would employ those capabilities to attack Israel. Thus the Israelis were caught unawares by the Arab attack—particularly the Egyptian thrust across the Suez Canal.

Ian MacFarling

Air Power Terminology, 2000, p. 63

After the end of the Cold War the importance of humint had been greatly devalued to the detriment of holistic intelligence availability. However, the recent conflicts in Afghanistan and Iraq have reinforced the need for humint and processes have been initiated to remedy the situation. Sun Tzu emphasised the importance of people contact and the criticality of such contacts to ensure the veracity of one's own information channels. Piecing together the complete picture from disparate and scanty information is one of the major leadership skills that the treatise mentions in a number of places. In terms of humint, the five channels can be thought of as that gathered through local sources, those obtained from officials of the adversary on one's own payroll, information from double agents or counterintelligence, misinformation spread to the adversary through one's own agents and the information brought out by an agent personally.

The role of air power in establishing and securely maintaining the information channels will vary with circumstances. In terms of humint it would normally be restricted to the insertion and extraction of assets and the dissemination of analysed data. In extreme cases the protection of human assets in adversary territory could also become a necessity and

air power, even though not ideally suited for such operations, is perhaps the best option available under these time- and option-constrained circumstances. In contemporary conflict, the nature of humint has undergone a change in that the use of 'spies'—and the sinister meaning that it conveys—is fairly restricted.

The five different categories of 'spies' that Sun Tzu listed and the dissimilar types of information that they provide can be differentiated in terms of the requirements to formulate an effective strategy to achieve victory. The five channels should provide information regarding the following basic factors. The first channel should provide information regarding the local terrain, which is best obtained from within the area of operations through the expertise of local people. Air power can also provide vital information regarding the terrain through aerial mapping and surveillance. This is geospatial intelligence. However, in some cases confirmation of adversary deployment may require local knowledge. The second is to obtain information regarding the adversary's plans and intentions, obtained by gathering inside information from the contacts that one has within the adversary camp. Air power can utilise its significant signals intelligence capability to string together the adversary intention through analysis of communication and electronic emissions collected from deep inside adversary territory.

Third is the need to have double agents who provide the information regarding the adversary's methodology to collect intelligence and their organisation and functional concepts. While this is predominantly a humint activity, signals intelligence and countermeasures that can be cleverly deployed will also provide a great deal of information that can be used to create foreknowledge of the adversary intentions, uncover weaknesses in their intelligence and thereby neutralise their advantage. The fourth channel is one of misinformation that is fed to the adversary to confuse their planning and force deployment so that one's own forces can then exploit the weaknesses thus created. The use of media, even without their direct knowledge of being used, to spread false information could be considered as a viable proposition. Air power assets can also be used to indicate force deployment in one area of the theatre while the actual plan would be to attack another area. Air power's reach and speed allows it to be repositioned very rapidly after the conflict has actually commenced. Misinformation of the adversary or deception is a vital part of information warfare.

Timely, Accurate and Relevant: Evolving Challenges for Intelligence

Key Points:

1. To be of value to the warfighter, Intelligence support must be accurate, timely and relevant.
2. Increased tempo and complexity of operations makes it far more difficult to deliver timely Intelligence support.
3. Intelligence Officers may suffer a crisis of relevance, but could have a role in helping prevent Information Overload.
4. Strategic uncertainty or ambiguity diminishes the Intelligence system's capacity to prepare aircrew for operations.
5. Complex threat environments and tasking for fighter operations increases the information environment of aircrew, and hampers the ability of Intelligence Officers to provide timely, relevant and accurate support.

Byron Reynolds

Postmodern Tactical Air Intelligence, 2006, p. 53

The fifth information channel is about keeping the strategic headquarters accurately informed at all times regarding the progress of the conflict, particularly in an operation that is not going in one's favour. At the operational level, air power is best suited to carry out assessment of the effects created by one's actions and also to network the information across the vertical spectrum of command. However, it must also be noted that this network itself could become a strategic vulnerability. Space-based ISR can provide information regarding adversary deployment that will indicate their intent. Other than the differences in the methodology of collection and dissemination brought about by the technological innovations, the different factors that need to be known regarding the adversary's intent have not undergone any tangible change in the two millennia since Sun Tzu wrote his treatise.

***Airborne assets can map the terrain and provide signals
intelligence to identify the adversary's intent and capability***

ISR contributes considerably to creating foreknowledge

***Air power can be used as a deceptive tool and also to carry out
assessment regarding the effects being created***

In the work of the Entire Force,
Nothing should be more favourably regarded than Intelligence;
Nothing more generously rewarded;
Nothing more confidentially treated.

Intelligence cannot be employed,
Without enlightenment and intuition.
Intelligence cannot be used
Without humanity and generosity.

The Work of Intelligence
Cannot succeed without subtlety and ingeniousness.

Subtlety of subtleties!
Nowhere neglect the Use of Intelligence.
If the work of Intelligence
Is prematurely divulged,
Then those who discuss it beforehand,
And those who listen,
Are both dangerous.

Within the whole force, the secret agent is the one who is closest to the commander, who is rewarded the maximum and whose activities should be preserved in utmost secrecy. Spies cannot be usefully employed without the commander possessing intuitive sagacity and knowledge, and they cannot be properly managed without benevolence and justice. A commander needs subtle ingenuity of mind to make certain the truth of espionage reports. There are no situations where espionage cannot be used, if it is truly subtly and delicately done. If one's own plans relating to secret operations are prematurely divulged, the agent and all those to whom he spoke of them shall be put to death.

Sun Tzu states categorically that information management requires a commander to exercise some of the ultimate and most highly developed characteristics of leadership—intuitive wisdom, fair benevolence and subtle ingenuity. This stanza lists the requisites for conducting ISR, the areas where such activities could be used and the handling of intelligence leaks within one's own forces. There is also an implicit warning that all information made available may not be useful, but that there is also a need to guard against devaluing an information source prematurely. The information source must not

determine the usefulness of information that is being passed on, it is the commander who must decide the level of its relevance.

To conduct surveillance, the commander needs to be wise and a keen observer. Wisdom is required to determine the areas to be viewed and observed to ensure that the appropriate information is highlighted from the large amount of information that will be gathered. Successful strategic leaders have always been interested in the broader aspects of security, and used it to create a vision for the future while also being able to identify the right information for contextual decision-making. Sun Tzu proclaimed that as long as espionage was conducted subtly, there was no situation where it could not be used.

All information obtained from prisoners should be received with caution, and estimated at its real value. A soldier seldom sees anything beyond his company; and an officer can afford intelligence of little more than the position and movements of the division to which his regiment belongs. On this account the general of an army should never depend upon the information derived from prisoners, unless it agrees with the reports received from the advanced guards, in reference to the position etc., of the enemy.

David G. Chandler

Maxim LXIII, *The Military Maxims of Napoleon*, 1987

Chandler further annotates:

The interrogation of prisoners can still be very valuable for up-dating information and corroboration purposes, but, as the maxim suggests, it requires handling with care. The planting of erroneous information in this way is one of the oldest tricks imaginable. On the evening before Blenheim (1704), for example, Marlborough sent carefully 'briefed' deserters into Marshal Tallard's camp with misleading information suggesting that he was in full retreat. In fact he was about to march through the night in seven columns to attack the French early on 13 August. In 1943, Allied intelligence used the corpse of a tramp killed in an air raid to create 'the Man who Never Was'—a supposed Royal marine staff officer carrying details of a non-existent Allied landing operation—in order to conceal the actual forthcoming invasion of Sicily.

Today, as already remarked, the problem is profusion of intelligence information rather than its lack. The great difficulty, just as in Napoleon's day, is verification.

In Sun Tzu's time the method to deal with leakage of information in one's own camp was radical, to say the least, although the point is well made. The distribution of information and the procedures required to ensure its security are vitally important. The flow of information must be controlled and at times it may become necessary to isolate

a particular information source or dissemination agency to ensure information security. Confidentiality of information is critical to the success of one's own campaign.

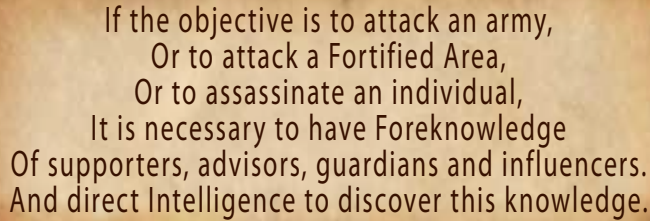
The leadership requirements for information management are common to all Services. Since air power contributes very heavily to the gathering, analysis and dissemination of information, air commanders will always have to be professionally trained in ISR and IO (Information Operations). Developing the acumen to identify and exploit information of contextual value from within a large and amorphous quantity that is always available in contemporary conflict situations requires experience and the sophistication to apply intuition. This is not to indicate that commanders of other Services do not need to be professionally trained or possess the necessary acumen, but to emphasise the contribution of air power towards ISR and IO. Air commanders at all levels will have to deal with ISR and IO and skilfully manage the valuable assets to optimise their contribution. Therefore, there is a great need for these capabilities to be a strong element or dimension of the professional mastery of air commanders.

*The commander must determine the value of the information being
made available, not the source*

ISR can be conducted in all situations

*ISR and IO are fundamental dimensions of the professional
mastery of air commanders*

Counterintelligence



If the objective is to attack an army,
Or to attack a Fortified Area,
Or to assassinate an individual,
It is necessary to have Foreknowledge
Of supporters, advisors, guardians and influencers.
And direct Intelligence to discover this knowledge.

Whether the objective is to crush an army, to storm a city, or to assassinate an individual it is necessary to know the talents and holistic capabilities of the opponents. Espionage must be conducted to ascertain this.

The fundamental basis of Sun Tzu's philosophy of war is one of invasion, of taking the initiative to pursue strategic objectives offensively. In these situations it is necessary to have information regarding the adversary that is as detailed and complete as possible. Such information should contain details regarding the adversary's alliances, their concepts of operations and operational capabilities. This stanza gives the details of the information that is necessary to develop a successful strategy against an adversary and also the type of information that will permit the identification of their weaknesses that can then be exploited to gain natural advantage in conflict.

Information Warfare includes manipulative, disruptive or destructive actions taken covertly or overtly during peacetime, crisis or war against societal, political, economic, industrial or military electronic information systems. The purpose is to achieve informational advantage over an adversary and to influence behaviour, deter or end conflict or, that failing, to win a war quickly and decisively, with minimal expenditure of capital, resources and personnel and with minimum casualties on either side. Information Warfare includes actions taken to preserve the integrity of one's own information systems from

cont.

exploitation, corruption or destruction while at the same time exploiting, corrupting or destroying an adversary's information systems and in the process achieving an information advantage in the application of force.

Colonel Alan D. Campen, USAF (Ret)

'Rush to Information-Based Warfare Gambles with National Security'

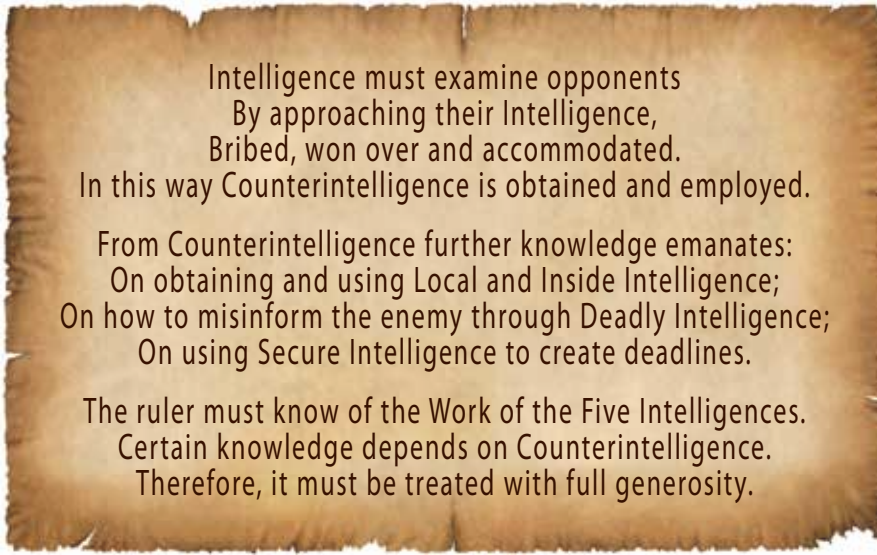
Signal Magazine, July 1995

The information requirements will change in the course of a campaign. The flexibility that air power provides with adaptable systems and sensors provides dynamic options in such an environment. Air power should be employed to carry out ISR, first on an as required basis, and as the conflict becomes imminent, covering as much area and for as long as possible. The conduct of offensive campaigns is heavily reliant on intelligence regarding the adversary and their manoeuvres, especially in the initial phases when it will be necessary to gain and maintain the initiative. In contrast, a defensive campaign is built mainly on being reactive to adversary actions, although the air campaign even in this context would have to transition into an offensive one sooner rather than later. The details of attacking an army or assassinating an individual are more operational and tactical in nature, even though the requirement for information would be more immediate and time sensitive as compared to more strategically oriented actions.

Detailed information regarding the adversary is essential to plan and execute an offensive campaign

Information requirements will change through the progress of the campaign

Air power should carry out ISR even in the pre-conflict phase



Enemy secret agents must be contacted, bribed and doubled into one's own usage. These double agents can be used to recruit native and inside spies, cause misinformation through expendable spies and use living spies at the appropriate time in a planned manner. The basic objective of all types of espionage is complete knowledge of the enemy and this can be derived and confirmed from the double spy, who must be treated liberally.

Sun Tzu laid great emphasis on the information gathered through double agents and prescribed them as the most important of the five types of 'spies'. These sources not only provide information regarding the adversary, including their understanding of one's own forces, but also regarding their perceptions of the broader security environment. By controlling these sources one can assert a certain amount of influence on the adversary's opinion and view of one's own forces. Information regarding the full breadth of the security situation is important since all strategies have to be developed within the framework of grand national security imperatives that are heavily influenced by the prevalent security environment. Essentially, Sun Tzu is advocating a two-way communications process that can be used to one's own advantage. The second part of the stanza also implies that different types of information, obtained through a number of ways, should be coherently used to build the complete strategic picture for the commander.

Counter-Information

Counter-information seeks to establish information superiority through control of the information realm. Counter-information creates an environment where friendly forces can conduct operations without suffering substantial losses, while simultaneously denying the enemy the ability to conduct their operations. The focus of the effort is on countering the enemy's ability to attain information advantage. Counter-information, like counter air and counter space, consists of both offensive and defensive aspects.

Offensive Counter-information (OCI). OCI includes actions taken to control the information environment. The purpose is to disable selected enemy information operations. OCI operations are designed to destroy, degrade or limit enemy information capabilities and are dependent on having an understanding of an adversary's information capabilities. Examples of OCI include jamming radars and corrupting data acquisition, transformation, storage or transmissions of an adversary's information; psychological operations; deception; or physical or cyber attacks.

Defensive Counter-information (DCI). DCI includes those actions that protect our information, information systems, and information operations from the adversary. DCI programs, such as operations security (OPSEC), information security (INFOSEC), and counter intelligence assess the threat and reduce friendly vulnerabilities to an acceptable level. Improving security procedures designed to safeguard equipment and information can prohibit unintentional and unwanted release of information.

AAP 1000—*Fundamentals of Australian Aerospace Power*, 2002, p. 203

Sun Tzu also anticipated that resources allocated towards information management activities in the normal course will be limited and therefore advocated the establishment of lavish rewards to information sources. This has an almost uncanny resemblance to contemporary situations wherein the defence budget itself is limited and within the defence there is always a tendency to downplay the resource requirements for information operations and the sustaining of information sources. Almost always, the budget for intelligence gathering is insufficient to produce the necessary quality of information required for effective employment of the force. The investment in information is not resources merely in terms of finances and assets but there is a need to invest time and effort, which translates to the training and education of intelligence professionals.

In contemporary military terms, the procurement of the full spectrum of assets required to provide the desired information coverage will be far too expensive for any one nation to afford. The trend is towards a sharing of information assets within allies and coalition partners with sufficient caveats enforced to stem any leaks. While in a superficial manner this seems to be an adequate solution, in actual fact there are a number of challenges that surface in this coalition approach to information exchange. In most cases the owners of

the most proficient and proliferate information sources will tend to keep core items to themselves to ensure that information security is not compromised. As a corollary, the forces that benefit from the information gathered by others will tend to place a lesser value on the information, since the problems of collection are not readily apparent to them. Further, the different rules of engagement that coalition partners adhere to in contemporary conflict situations will make the analysis of the same information produce different operational solutions and courses of action. Information sharing, even between the best of allies, is a complex exercise that has to cater not only for each nation's requirement but also pay heed to the personalities of the commanders involved. However, the irrefutable fact is that information is the cornerstone on which the success of a campaign rests.

Resource allocation for information gathering will always be insufficient

*Information sharing between allies, while not the optimum solution,
is the only way forward*

Information is the cornerstone on which the success of a campaign rests

In Ancient Times,
The rise of the Shang Dynasty
Was due to I Chih of the Hsia Dynasty;
And the rise of the Chou Dynasty
Was due to Lu Ya of the Shang Dynasty.

Only a Brilliant Ruler and an Excellent Leader,
Can conduct their Intelligence with superiority and cleverness,
Thereby achieving great success.
Intelligence is a key element in warfare,
The Entire Force relies on this for every move.

This is the essence of Strategy.

Only an enlightened government and a wise commander, knowledgeable in using the highest intelligence of the army in a superior manner, are assured of great success. Espionage is a vital element of warfare, because a force's ability to manoeuvre is dependent on it. This is the essence of strategy.

In this final stanza of the treatise Sun Tzu goes back to the lessons of history, which he analysed with mathematical precision to create a tangible pattern. His rules of strategy therefore are not infallible, but based on the probability of them being consistently correct more times than being wrong. He provides examples in this stanza of two successful dynasties in ancient China that achieved success through the development of robust information networks. The Shang sovereign was victorious over the Hsia king because I Chih once served with the Hsia and relayed their secrets to the Shang (prior to 1766 BC). Similarly the Chou sovereign was victorious over the Shang king because Lu Ya once served in the Shang army and relayed their secrets to the Chou (prior to 1122 BC). An enlightened government and skilled commander should place the most intelligent and effectively trained people in the information analysis sections to ensure that the force is always victorious. Intelligence is the key to victory because all manoeuvres of the force are dependent on it, the lack of intelligence being the first and conclusive step towards defeat.

In the contemporary scenario, the scope of intelligence is not restricted to the battlespace or the factors directly connected with conflict. It encompasses all activities of a nation aligned to ensuring its security and brings all elements of national power into the equation. The intelligence gathering process and its employment is also normally controlled at the highest levels of national security, except in cases of actual conflict

when a certain degree of decentralisation may be permitted to cater for contextual requirements. The entire security apparatus of a nation is dependent on accurate intelligence to develop robust security strategies and to counter the strategies of potential adversaries. Sun Tzu claimed that this was the essence of a winning strategy. This is the concept with which Sun Tzu chose to close his treatise—intelligence focused on people and providing knowledge to achieve decision superiority. In essence, the quality of the people defines victory in conflict.

The central problem is not collecting and transmitting information, but synthesizing for the decision maker.

Richard Burt

There are no 'battle management' magic bullets that will substitute for the ability of on-scene commanders, soldiers and airmen to make appropriate decisions based on the ebb and flow of events.

Richard P. Hallion

*The scope of intelligence encompasses national security at
the grand strategic level*

Intelligence is the essence of a winning strategy

The quality of the people define victory in conflict

Conclusion

From time immemorial, obtaining adequate knowledge of the adversary's plans has been a primary concern of all military commanders. The insatiable quest for information regarding all aspects of the adversary—their culture, domestic compulsions, economic status and a myriad other factors, on top of the essential military inputs—has been a constant factor in the history of warfare. Rather than decrease this demand, the modern technologically-enabled ISR gathering assets have only increased it with commanders now insisting on immediate updates on adversary deployments and manoeuvres. Sun Tzu emphasised the need to have adequate information to ensure victory and elaborated on the use of 'spies' to collect verifiable intelligence that a commander could use. The basic requirements have remained the same over the past 2000 years, only the methodologies of the collection, analysis and dissemination have now become technology-enabled and improved in the speed with which information processing can take place. The doubts regarding the veracity of the information have remained the same through the ages.

Information superiority, or foreknowledge, as Sun Tzu termed it, is fundamental to formulating a winning strategy based on detailed knowledge of the adversary's capabilities and intent. A successful strategy, that can be executed smoothly will not only assure battlefield victory but will also have direct impact at the grand strategic level of national security.

A number of factors affect and constrain the operations conducted to gather intelligence in order for the force to have information superiority. In the contemporary battlespace, the demand for information can never be met completely and to the satisfaction of all commanders. This situation is further exacerbated by the less than adequate resource allocation towards intelligence operations under normal circumstances. This forces a nation to share intelligence as well as the assets with allies in an effort to ensure that a complete picture is available to the commanders and other decision-makers. However, considering the disparities in rules of engagement and at times even the operational ethos of different national forces, this is not an optimum solution.

Airborne ISR capabilities are extremely expensive to acquire and resource intensive to operate to the desired degree of competence and for the required period of time. It is incumbent on air commanders to ensure that there is an advantageous balance between resources expended and the strategic benefits that will be derived for the operations.

Air power is at the forefront of ISR operations and therefore air commanders have to be well versed in all aspects of information operations. They have to be able to judge, correctly, the value of information that is being produced through a plethora of sources and also to disseminate the appropriate data to the relevant areas while continuing to guide the air campaign. Proficiency in conducting ISR and IO therefore

becomes a fundamental requirement in the development of professional mastery of air commanders.

As in Sun Tzu's time, even today, intelligence is fundamental to winning battles, campaigns and wars. The quality of intelligence produced and the further refining of available information into credible knowledge that permits commanders at all levels to have war-winning decision superiority is the product of human beings, albeit enabled by technology. People, therefore, remain the fundamental nodal point in information warfare. Some things are eternal constants in the pursuit of national security.



Conclusion

This book has endeavoured to draw a clear thread between the ancient military wisdom that Sun Tzu propounded in his treatise on politico-military strategy—*The Art of War*—and the intricacies of the application of modern air power within the truisms that he proclaimed, across the spectrum of contemporary conflict. This conclusion therefore is, firstly, a generic distillation of the major principles from Sun Tzu's original work that directly impact national security, armed conflict and military leadership. They are not necessarily arranged in the order of the chapters and no attempt has been made to select a designated number of principles from each chapter. Secondly, as far as possible, air power aspects that either enhance or constrain the application of these principles to contemporary conflict scenario have been explained simultaneously. The injunctions regarding military leadership have been summarised separately in the firm belief that, although certain elements have been

tailored within this book to suit the peculiarities of air campaigning, they are all equally applicable to leadership in any of the other Services. It must also be highlighted here that in *The Art of War* the original principles were aligned to the circumstances of the day, but even a cursory study will reveal without difficulty their meaning and connotations in the contemporary security and military conflict scenario.

Sun Tzu's original book is almost impossible to summarise for two major reasons. First, it is in itself one of the most succinct of books, with no frills and explanations other than the barest one-liners and, therefore, paraphrasing it would perhaps only make it longer than the original. Second, each chapter covers a number of principles and concepts that are in certain cases related to each other and in others completely independent topics. Further, most chapters end with some issues and challenges of military leadership being underlined. Therefore, a chapter-wise summary will become an extremely disjointed document. There is a third reason, applicable to this interpretation only, which makes summarising this book an even more onerous task. The connection between the timeless strategic axioms put forward in *The Art of War* and contemporary air power strategy and concepts requires a great number of adroit and nuanced explanations. These would not easily fit into a seamless mould built around each chapter.

National Security

Every nation needs a well-formulated national policy from which the grand national security strategy can be easily derived. This is the first principle.¹ This grand national security strategy is the capstone principle from which all other security strategies draw life. The absence of either of the two will, without doubt, spell disaster for a nation's sovereignty and in extremis even its very survival as an independent state.² The national security strategy in its turn is the fountainhead of the guidelines to all elements of national power that must work in conjunction with each other to secure the nation. The national security strategy will also be a foundational factor in the decision-making process that commits a nation to war or even other activities that contribute to and ensure the security of the nation.

¹ The principles being listed are not in any order of priority or in any chronological or other order that Sun Tzu advocated. In fact, they have been arranged to fit into the convenient model of national security at the strategic level, the conduct of a conflict and military leadership requirements, into which the conclusion has been arranged.

² A State is the main political authority within a sharply defined territory. Its authority normally rests on a written constitution. Article 1 of the Montevideo Convention on the Rights and Duties of States (signed in Montevideo on 26 December 1933) lists the requirements for statehood. It states that the following four criteria should be met for the state to be recognised as one: a permanent population, a defined territory, a government and a capacity to enter into relations with other states.

A nation must clearly enunciate its security imperatives and expand on the non-negotiable issues that it considers of paramountcy in terms of national security. This is the second principle. This has more implicit inferences regarding national security and the apparatus that controls the nuances, especially at the strategic decision-making level. The critical national security imperatives and objectives must be mutually agreed between the political and military leadership, making the politico-military relationship of the utmost importance and of direct bearing to national security. This is especially vital in a democratic nation fielding a voluntary military force.

An effects-based security strategy, based on all elements of national power and formulated at the highest level of national security command, is the optimum way to ensure the holistic security of a nation. This is the third principle. An effects-based strategy is not a new concept of the 21st century. This was a strategy very clearly enunciated by Sun Tzu with the injunction that the effects must be created both at the physical and cognitive domain of the adversary. Only by creating cognitive effects will it be possible to avoid physical conflict, which was one of the major points that Sun Tzu repeatedly made in the treatise. If conflict has already been joined then air power is a non-replaceable capability in enforcing an effects-based strategy. Its speed, reach and responsiveness provide the wherewithal to apply lethal force in a time-critical manner with precision, discrimination and proportionality to create the desired strategic effects.

Conflicts, Wars and Military Campaigns

Viewed from a very broad strategic perspective, conflicts need not always lead to wars or military campaigns. However, for a nation a conflict would always involve confrontation as a result of direct or indirect threats to national security. These confrontations could be at the economic or diplomatic levels and may have only the bare minimum input from the military element of national power. As a corollary, while both overt and covert wars and campaigns are predominantly military-led, there will always be inputs from other elements of national power while the war is being planned, executed and more so in the post-campaign period. Success can only occur with this whole-of-nation approach to security.

Conflicts and wars to secure the nation are the realm of all elements of national power. This is the fourth principle. Sun Tzu starts his treatise with the injunction that the decision to go to war is the most important one a nation will have to make. This is true even today, irrespective of the *modus operandi* and of the point in the spectrum of conflict that the war would be conducted. The need to have all elements of national power involved throughout the process cannot be overemphasised. Sun Tzu also cautions about the pitfalls that could ensue if a nation is taken to war by an incompetent strategic politico-military leadership. Most cases of this nature will result in defeat and failure that will have a direct impact on the security of the nation in a number of ways.

Sun Tzu states that conflict is as inevitable as the changing of the seasons and therefore a nation must always be prepared for war. This is the fifth principle. There is also an indelible connection between this principle and the importance of the decision-making process that leads a nation to war. The comparative capabilities of one's own military forces and those of the potential adversary and the skill of the military commanders are two basic points that must be analysed and considered the starting point in the decision-making process. The axiom that conflict is inevitable must always be kept in mind when a nation is formulating its security strategy and developing the agencies that will ensure its security. Further, Sun Tzu points out that a static defensive posture will always be eroded with the passage of time because of the dynamic nature of the security environment. This resonates even more when examined in terms of the contemporary international security scenario. A majority of the challenges that arise from the dynamism of the battlespace can be mitigated by air power, if its inherent characteristics of flexibility and responsiveness are carefully tailored to suit the context by sophisticated air commanders.

Sun Tzu advised that every action taken by the State must be beneficial to it in the broader context of the nation's wellbeing and that the cost of winning a war must not debilitate the economy or the security stance of the nation. This is the sixth principle. He emphasised that physical conflict must be a last resort action, but went on to advise that if the nation must engage in war, it must be ensured that victory is achieved through a short and swift campaign. By achieving swift victory, the leadership will be able to meet the second requirement of the conflict, that of bringing overall advancement of the national security posture. An air force of 'strength'—not merely numerical, but with resident high-end capabilities and the capacity to employ force multipliers—is a strategic element of national power within the security equation. When the nation's air force possesses adequate balanced capabilities and is employed within a clearly laid down and tangible air strategy, it can create effects that transcend the battlespace and achieve strategic results. Air power's rapid response and capability to provide both lethal and nonlethal solutions to emerging threats support the concept of advancing national security in a cost-effective manner.

Sun Tzu declared that situational strategic analysis and planning at all levels of command and conduct of war is a foundational requirement for victory. This is the seventh principle. The planning process to enter into conflict, with even a decidedly inferior adversary, has to be detailed with sufficient contingencies built into it. Before the actual planning of the campaign, it is necessary to carry out a strategic analysis of the context and possible repercussions—political, both domestic and international, economic and social—of going to war. The campaign plan by itself must be joint, dynamic enough to cater for emerging security issues and must be based on exploiting the identified weaknesses of the adversary. The air campaign plan must stem from the joint plan and directly contribute to achieving the joint campaign objectives. Perhaps more than the other Services, air forces, by virtue of their coverage of the entire theatre of operations and beyond, will have to dovetail their campaign plan with the strategic plan for the entire campaign. Only then can the

fundamental tenet of the employment of air power be effectively applied, 'centralised control and decentralised execution'. In all cases, a basic requirement is for the plan to be able to contain the very high dynamism of the battlespace.

Sun Tzu propagated the strategy of surprise and momentum as a war-winning concept. This is the eighth principle. The element of surprise can be employed at all levels of war, from the strategic to the tactical, and in cases it will create at least a temporary advantageous situation. Surprise is indelibly connected with deception, in the cognitive domain through the creation of illusion and in the physical domain through direct means. Momentum of the force can be created by a number of methods and also at the physical and conceptual levels of the conflict. When the force is able to practice deception, exploit the element of surprise and manoeuvre aggressively, it is certain that the road to victory is open to it. Air power is a vital element in all three endeavours. Air power has the capability not only to influence, but when employed skilfully, to control the tempo and direction of a conflict. Enhancing the momentum of one's own force and restraining that of the adversary is more easily attempted through the employment of air power. The element of surprise is perhaps best realised through pre-emptive air strikes on the adversary's centres of gravity. The capacity of a force to create the element of surprise is enhanced if the nation has sufficient strategic depth to keep the adversary unaware of the initial movements and positioning of forces. In instances wherein such depth is either not available or cannot be used advantageously, air power can create virtual depth by being able to carry out the pre-emptive strikes without having to carry out any pre-conflict positioning.

The forces in the field must be manoeuvred opportunistically, even before conflict, to ensure that they are always positioned advantageously at the beginning. This is the ninth principle. Sun Tzu believed that a skilled commander should always be observing the adversary and the probable theatre of operations with the aim of identifying their weak areas that could be exploited at a later stage. This requires strategic situational awareness of a high order, which is one of the primary contributions of air power to the joint pre-conflict picture of the emerging battlespace. Manoeuvring the force is also facilitated, in the contemporary context, by employing airlift capabilities as required. Using air mobility to position and re-position the force and to supply deployed forces has the advantage of reducing the vulnerability of the force to ambush and assuring the security of the lines of supply. This is a particularly prized capability in contemporary irregular warfare scenarios. Sun Tzu coupled the concept of manoeuvre warfare and the skill of the commander to indicate the importance of the leadership in obtaining victory and the impact that a commander can have on the outcome.

While he elaborated on the means by which victory could be obtained, Sun Tzu also defined victory. He advised that the culmination of a conflict in victory occurs only when the desired strategic end-state has been achieved, and the end-state should always be aligned correctly with the grand national security strategy of the nation. This is the tenth principle. This has implications for the military leadership. In order to ensure

that the political end-state required to be achieved through the employment of military forces is within the capability of the forces available, the strategic military leadership would have to be influential in the grand strategic level of national leadership. This is a politico-military environment wherein the military commanders would need to be valued members of the strategic decision-making body of the nation. Going into conflict with an unachievable end-state will lead to ultimate strategic defeat, irrespective of the brilliance of the military forces in the actual conduct of combat operations. Further, this situation will also prolong the conflict thereby increasing the impact of the economic burden and human casualties that are inevitable in any campaign.

Sun Tzu advised that one of the fundamental ways to achieve victory in conflict is by creating an imbalance in the adversary's forces. This is the eleventh principle. Air power is ideally suited to create an imbalance within the adversary force and then to exploit it. This is mainly because air power has the capability to operate, simultaneously if necessary, at all levels of the conflict and, further, its tactical actions can be so tailored that it creates strategic effects. In the contemporary battlespace, where the adversary is normally diffused and reliant on their asymmetry to succeed, sophisticated employment of air power can neutralise this advantage. In fact, air power's ability to create a series of effects in parallel at distinctly different areas of operations, as well as around and beyond the theatre, both in the physical and cognitive domains, is by itself an asymmetric capability that cannot be neutralised very easily. Conventional forces with adequate air power capabilities have a war-winning element in their hands.

Adequate knowledge regarding the adversary—national support to the conflict, economy, alliances, capabilities of the military forces, its sustainment capacity, ability of the commanders, concepts of operations—is a foundational requirement for victory. This is the twelfth principle. The requirement to have 'information superiority' to achieve victory has not changed through the ages and is as much a requirement today as it was in Sun Tzu's time. The difference is only in the manner in which information regarding the adversary and their intentions are collected, collated and disseminated. In contemporary conflict situations, the contribution of air power in this area is critical. The trend in modern military forces is to combine information and knowledge dominance to ensure a level of situational awareness for the commanders to create success in all their actions that then becomes an unassailable war-winning factor. This level of situational awareness ensures decision superiority in a force, which then becomes invincible.

The successful conduct of a campaign requires the commander to have adequate control over the battlespace in order to retain and exercise the ability to manoeuvre the forces. This is the thirteenth principle. In Sun Tzu's time, the ability to manoeuvre the force was to a great degree dependent on the geography and terrain of the battlespace combined with the capability of the adversary to deny manoeuvre opportunities. In contemporary conflict this would translate predominantly to control of the air and, to a lesser extent, to the adversary's surface force capabilities to constrain manoeuvre options. Obtaining and maintaining adequate control of the air is dependent on a number of factors. Some of the

major factors are, robust campaign planning, the spread of air power capabilities within the force, training, resource availability, realistic appreciation of comparative capabilities, innovative concepts of operations and skilled application of combat air power. However, smaller air forces will always face the challenges and limitations of the quantum of capabilities that can be brought to bear, the strain of concurrency in operations, attrition replacement ability and resource availability.

Military Leadership

Sun Tzu proclaimed unambiguously that triumph in battle and overall victory in a conflict is completely dependent on the skill and sophistication of the commander. This is the fourteenth principle. Military leadership is a complex and extremely nuanced human undertaking, and its criticality in the planning and conduct of a campaign can only be undervalued at the cost of victory. Sun Tzu listed a number of characteristics that a successful commander must possess, not in a single chapter, but spread across the entire treatise. In addition he also elaborated on the possible flaws, which if a commander is seen to have, could be exploited to one's own advantage or by the adversary as the case may be. The major character traits that will lead to the success of a commander are professional mastery—that itself has a number of elements to it—moral courage, ethical uprightness, patience, knowledge, superior decision-making ability and vision.

Professional mastery consists in having the mastery of the environment in which the force operates, for example mastery of air power in an air force commander; the ability to contribute effectively to the national security strategy; awareness of the morale of the force and the ability to ensure that it is maintained at a sufficiently high level; a discerning implementation of the concept of centralised control and decentralised execution in the conduct of a campaign; the talent to transition from a defensive campaign to an offensive stance at the opportune moment; and a clear grasp of the comparative strengths and weaknesses of the opposing forces.

The challenges of military command were many and complex during Sun Tzu's time. In the contemporary military forces, perhaps these challenges have only increased in their complexity and become much more finely defined and articulated. Further, command in conflict adds its own measure of pressures to the commander's responsibilities. Wars are still fought and won by human beings and there is always an element of the unknown in dealing with them. This unquantifiable factor can only be appreciated by a commander with an intuitive mindset, a trait that is not common but is invaluable. Considering the vital role that a commander plays in ensuring the triumph of the force, a skilled commander with the necessary characteristics and intuitive skills is an asset that cannot in any way be replaced. Such a commander will make the force indomitable.

Final Words

The Art of War contains many principles that could be explained at different levels within the spectrum of conflict. A large number of those principles have been identified and explained in the book and a selected few paraphrased in this conclusion. It must also be understood that the choice of these major principles, although not random, can be changed dependent on the perspective of the analysis and interpretation that has been done. In this book, the focus has been primary analysis of Sun Tzu's principles through the lens of contemporary air power while continuing to maintain a broader perspective of the spectrum of conflict.

There is no doubt that Sun Tzu's ancient book of military philosophy is as valid today as it was in ancient, warring China. The connection between the axioms and the employment of air power, as described in this book, is only one possible extrapolation of the intense text of the original. *The Art of War* is a multifaceted book and air power is a complex capability. Therefore, making the connections between the two at the strategic level is an intricate process. The assertion in this book has been that there is a deep and tangible connection—informative, practical and philosophically useful—between Sun Tzu's timeless aphorisms and the more modern concepts for the optimum employment of air power. It is indeed so.

Throughout this trajectory from 250 BC to the 21st century, the timelessness of Sun Tzu's thoughts has been validated and, conversely, the critical all-encompassing nature of air power as a crucial element of national power underscored.

Sun Tzu highlighted three basic premises as universal truths. First, war will always be a mixture of regular and irregular, direct and indirect actions, and a competent force must have a mixed balance of capabilities to cater for this. Second, the operating environment is always dynamic and produces an infinite number of variables making it almost impossible to predict the outcome of a battle, campaign or war. This ambiguity can only be overcome by skilfully combining the flexible resident capabilities of the force and adaptable concepts of operations through sophisticated command ability of the leadership. Third, war is always a costly and complex undertaking—irrespective of its duration, or whether one has won or lost—in terms of the resource expenditure to the State, disruption of the development of the nation and most importantly in terms of lives lost.

War should always be the last option in ensuring the security of the nation. However, when a nation must resort to war, it must pursue victory and the desired end-state with vigour and using all elements of national power to their optimum. Sun Tzu's *The Art of War* provides astute insights into conflict in both the physical and cognitive domain and states a number of aphorisms—equally applicable in contemporary conflict as they were in antiquity—that lead to triumph.

Every attempt to make war easy and safe will result in humiliation and disaster.

General William Tecumseh Sherman



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