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**THE STRATEGIC APPLICATION OF AIR POWER IN
THE NEW WORLD ORDER**

By

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About the Author

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INTRODUCTION

A new world order ... a new era – freer from the threat of terror, stronger in the pursuit of justice, and more secure in the quest for peace, an era in which the nations of the world ... can prosper and live in harmony ... Today, that new world is struggling to be born, a world quite different from the one we have known ...¹

United States President George Bush

This is a turning point in the exercise of air power. That very significant change in the strategic picture, together with the application of mature high technology ... means that we are entering an era in which air power can at last apply the potential that has long been claimed for it, and do so with a precision that disarms criticism.²

Air Chief Marshal Sir Michael Armitage, Royal Air Force

States employ the four elements of grand strategy – economic, political, military and psychological – to achieve national interests. Successful grand strategies consider all of these instruments of national power although, depending on the interests promoted and the circumstances, one or another may dominate. During a conflict, strategic air operations directly attack those crucial parts of the elements of grand strategy which a hostile state is employing to achieve its national security objectives. The term ‘strategic’ implies a direct attack on an enemy’s sources of military, economic, political or psychological power.

Strategic air operations can be employed as a tool of coercive diplomacy to convey political messages or, as an element of warfare, to achieve military objectives. These air operations are some of the most responsive and flexible forms of military power and are frequently controlled by the highest levels of government. The objective sought determines whether an air attack is strategic, rather than the aircraft type used, the target location or whether conventional or nuclear weapons are employed.

During the Cold War air power concepts were primarily developed to meet the demands of the most critical theatre – Central Europe. The doctrines evolved were appropriate for the defensive, reactive NATO strategy and focused primarily on defeating a Soviet mechanised land assault.³ These Cold War doctrines should not be applied unthinkingly to future conflicts. Air power proponents have often been criticised for their simplistic view of wars as homogenised occurrences against a single type of opponent always with the same vulnerabilities.⁴ The end of the Cold War requires that strategic air operation concepts are re-examined, and improved doctrines be developed to guide the future application of strategic air power. These new doctrines must be appropriate to the changed international circumstances, but should be based upon the current theories, and the recent operational experience, of

¹ *Current Policy Document No 1298*, US Department of State, Washington DC.

² ‘New Horizons for air power’, in Blakely, Brigadier Gerald (editor-in-chief), *Defence Systems International 92*, Sterling Publications International Ltd., London 1992, p 266.

³ Armitage, Air Marshal M.J., RAF and Mason, Air Commodore R. A., RAF, *Air Power in the Nuclear Age 1945-82*, Macmillan Press Ltd., London, 1984, p 225.

⁴ Drew, Colonel Dennis M., USAF, ‘Two Decades in the Airpower Wilderness: Do We Know Where We Are?’, in *Air University Review*, September-October 1986, Volume XXXVII, Number 6, p 12.

strategic air operations. An evolutionary rather than revolutionary process is needed to determine the strategic application of air power in the new world order.

ASPECTS OF THE NEW WORLD ORDER

... the present international order has an enormous inertia about it, with numerous elements of disorder, numerous loose ends, a multiplicity of problems of all kinds, and some very nasty people at work.⁵

T. B. Millar, 1992

The features of the emerging international system relevant to future strategic air operations are an increasing focus on economic issues, changes in the nature of regional conflicts and developments in the roles of nuclear forces. Some recent technological advances in military aviation will also have a significant influence on the capability of air forces to effectively and efficiently apply air power in the new world order.

Economic Focus

During the Cold War a state's status and ranking was primarily determined by the size and perceived effectiveness of its military forces. Economically the Soviet Union was a minor power; the country was considered a superpower because of its military might. Economic measures now have more importance with nations focusing on economic and technological competitiveness, rather than on military prowess.⁶ Market economics, operating freely at the domestic and international level, have become fundamental in the new world order.⁷ Nations are emphasising economic development and seeking industries and commerce able to secure sustainable economic growth.

Economic factors are likely to markedly influence future conflicts. Confrontations may be caused by economic difficulties or restrictions. Economic sanctions will almost invariably be tried before military force is applied and the intent of such force may be to cause economic disruption. Attacking a state's economy will become an increasingly important means of imposing one state's will on another.

Regional Conflicts

The global military confrontation between the superpowers has ended; however, long-standing regional conflicts caused by ethnic, religious and territorial differences remain.⁸ Since the 1970s intra-state conflicts have steadily declined in frequency although regional inter-state wars have increased. Modern regional inter-state conflicts are generally limited wars with limited goals; rarely do they become total

⁵ Millar, T. B., 'A New World Order?', in *The World Today*, January 1992, Volume 48 Number 1, p 9.

⁶ Garrity, Patrick J., 'The Depreciation of Nuclear Weapons in International Politics: Possibilities, Limits, Uncertainties', in *Journal Of Strategic Studies*, Volume 14, Number 4, December 1991, p 478.

⁷ Aftab, Maniam, 'The New World Order: A Critical Evaluation', in *Strategic Studies (Pakistan)*, Volume XIV, Number 3, Spring 1991, p 49.

⁸ Sewell, John W., 'Foreign Aid for a New World Order', in *The Washington Quarterly*, Summer 1991, p 37.

wars waged between fully mobilised societies determined to bring about an opponent's complete and final collapse.⁹

Many defence forces have changed from being infantry armies equipped for counter-insurgency to large, mechanised armies with supporting air forces and navies. However, counter-insurgency units can be largely self-sustaining, unlike the more sophisticated forces, which require the almost flawless functioning of extensive logistic and transportation networks.

During the Cold War there was a constant fear that regional conflicts could escalate into global nuclear war between the superpowers. In the Korean War certain areas were designated sanctuaries by US President Truman to prevent any inadvertent conflict escalation. The concept's perceived success led to sanctuary areas being frequently employed by political authorities to manage later Cold War clashes. Within these sanctuary areas, support infrastructure and logistic facilities were safe from attack; only those military forces deployed into the combat zone were considered legitimate targets. However, the role of sanctuary areas has ended with the Cold War, and attacks on regional strategic assets have once again become permissible. As the Gulf War revealed, military force can now be applied against an opponent's heartland, rather than only on his borders. Targets crucial to the continuation of a regional conflict can be attacked, regardless of their location, as there is little likelihood of escalation into global war.¹⁰

The problem of incomplete surrender seems an almost permanent feature of regional conflicts. Aggressor states, defeated on the battlefield, often do not accept the negotiated peace terms as binding, for the roots of a conflict usually lie within the domestic nature of the state. Israel has militarily defeated several Arab States; however, conflict continues. Britain defeated Argentina but the sovereignty of the Falkland Islands is still disputed by the Argentines. Obtaining a permanent peace may require reforming a nation internally. This is considerably more costly militarily, politically and economically for the victor than simply repelling an aggressor. Ensuring nations unequivocally accept a defeat and respect peace settlements will remain difficult in the post-Cold War era.¹¹

Nuclear Weapons Developments

The role of nuclear weapons has changed with nuclear forces no longer dominating global political and military agendas. Nuclear arms have ceased to define the character and focus of great power competition, or decisively shape international military plans and force structures. However, nuclear forces still retain their importance in preserving the peace between the major powers. They act as a hedge against a deterioration of international relations ensuring that competition remains at the political and economic levels.¹²

⁹ Snider, Don M. and Grant, Gregory, 'The Future of Conventional Warfare and U.S. Military Strategy', in *The Washington Quarterly*, Winter 1992, pp 216-217.

¹⁰ Armitage and Mason, *Air Power in the Nuclear Age 1945-82*, p 266.

¹¹ Quester, George H., 'The Growing Problem of Incomplete Surrenders; "Neither War nor Peace and Its Geographic Implications"', in Kliot, Nurit and Waterman, Stanley (eds), *The Political Geography of Conflict and Peace*, Bellhaven Press, London, 1991, p 73.

¹² Garrity, *Journal Of Strategic Studies*, p 465.

The strategy of nuclear existentialism is increasingly favoured as this only requires nuclear forces be operational; there is no need for elaborate or publicly announced plans for their use.¹³ The residual nuclear arsenals of the major powers, while providing a reminder of the risk of war, will be unrelated to any particular confrontation and emphasise retaliation rather than war-fighting.¹⁴

However, the end of the Cold War may promote nuclear weapon proliferation amongst the minor powers. Previously the two superpowers used extended deterrence strategies to encourage their allies to refrain from nuclear weapons acquisition. With the end of the Cold War, it is difficult to foresee any regional conflict in which a major nuclear power would be under such a serious threat as to legitimise the use of nuclear weapons to support an ally. The perceived failure of US extended deterrence guarantees has already led Israel to develop and maintain a nuclear arsenal.¹⁵ The development of nuclear weapons will appear particularly attractive to those nations without strategic depth. Like Iraq, these nations may seek nuclear deterrence by national means to negate a threat of extinction from large regional states.¹⁶

The Soviet collapse may induce certain states to acquire nuclear arms to compensate for the international tilt in favour of 'Imperialism' and 'Zionism'. Moderate neighbours could pursue similar efforts to protect themselves, or to maintain regional status and influence.¹⁷

Additionally, the ultimate fate of the former Soviet Union's nuclear arsenal remains uncertain and some weapons may yet be diverted to aggressive and ambitious nations. However, determining the true status of the nuclear programs of many minor powers is difficult. The full extent of Iraq's nuclear weapons developments was only fully realised when detailed and intrusive UN inspection was possible after the Gulf War.

Many minor powers are also actively pursuing acquisition of short and intermediate range ballistic missiles capable of penetrating most current air defence networks. Operational nuclear armed ballistic missiles could deter international intervention in a regional conflict and allow aggressive nations considerable local freedom of action. These nations could attempt direct intimidation of major powers or neighbouring states to extort economic or political advantages; blackmail, even nuclear terrorism would be possible.¹⁸

Major powers or neighbours may be unwilling to accept nuclear proliferation. The actual or potential development of nuclear weapons has already come close to inducing warfare. The Soviet Union, during the early 1970s, expressed interest to the US in a preventive war against China to prevent nuclear weapons development for

¹³ *ibid.*, p 489.

¹⁴ Freedman, Lawrence, 'Whither Nuclear Strategy?', in Booth, Ken (ed.), *New Thinking about Strategy and International Security*, Harper Collins Academic, London, 1991, p 86.

¹⁵ Snider and Grant, *The Washington Quarterly*, p 220.

¹⁶ McNaughter, Thomas L., 'Ballistic Missiles and Chemical Weapons: The Legacy of the Iran-Iraq War', in *International Security*, Fall 1990, Volume 15, Number 2, p 29.

¹⁷ *ibid.*, p 29.

¹⁸ Gergorin, Jean-Louis, 'Deterrence in the post-Cold War Era', in *Adelphi Papers 266 New Dimensions in International Security*, Part II, Winter 1991/92, p 10.

similar reasons Israel bombed the Iraqi nuclear reactor at Osirak.¹⁹ In the Gulf War, for the first time, an existing effort to develop nuclear weapons was decisively blocked by international military action endorsed by the UN Security Council.²⁰

Military Aviation Technological Advances

The operational experience of strategic air attack using conventional weapons during the Second World War indicated that a massive bomber force was needed. With the cost and complexity of modern aircraft such substantial numbers can no longer be acquired. This problem has been overcome by advances in aircraft and weapon technology. A few aircraft with conventional weapons can now have a greater effect on strategic targets than could the Second World War bomber fleets.

In October 1943 230 B-17 'Flying Fortresses' attacked the ball-bearing plant at Schweinfurt; their effectiveness could now be equalled by only eight F-16 fighter aircraft. Moreover the small, relatively modest F-16 can fly three sorties in the same time that a B-17 could fly one; in real terms, F-16 support and manning costs are a mere fraction of the four-engine, 10 man B-17.

The development of precision guided munitions (PGM) is reinforcing this trend. During the Gulf War, 60 aircraft with unguided ordnance proved unable to destroy an Iraqi nuclear reactor complex; the mission was later accomplished by eight aircraft with PGMs. The Soviet General Staff believe PGMs have a military effectiveness comparable to tactical nuclear weapons, without the latter's inherent political difficulties and the problems of extensive collateral damage.²¹ Discriminate attacks, with minimal collateral damage and few unintended civilian casualties, are now practical and consistently achievable. Improved technology has made unnecessary the large bomber fleets of the Second World War or the nuclear weapons of the Cold War to conduct a strategic bombing campaign.

CONTEMPORARY STRATEGIC AIR OPERATIONS CONCEPTS

Air power can be strategically decisive if its application is intense, continuous, and focused on the enemy's vital systems.²²

General William Momyer, USAF, 1978

Strategic air operations are focused on the centres of gravity of those grand strategic elements being employed by a hostile state during a conflict. Clausewitz defined the centre of gravity as 'the hub of all power and movement, on which everything

¹⁹ Cohen, Eliot, 'The Future of Force and American Strategy', *The National Interest*, Number 21, Fall 1990, p 4.

²⁰ Bundy, McGeorge, 'Nuclear Weapons and the Gulf', in *Foreign Affairs*, Volume 70, Number 4, Fall 1991, pp 89-90.

²¹ Grau, LTCOL L.W., US Army, 'Continuity and Change: A Soviet General Staff View of Future Theater War', in *Military Review*, December 1991, p 11.

²² Momyer, General William W., USAF, *Airpower in Three Wars*, U.S. Government Printing Office, Washington DC, 1978, p 339.

depends'.²³ Force applied against an opponent's centre of gravity produces the maximum disruption of his ability to fight.

Political and military leaders must consider carefully the overall impact of strategic air operations. The strategic application of air power against economic, political, military and psychological centres of gravity simultaneously produces both positive and negative effects. The grand strategic elements are considered separately, although the concepts applicable to one generally apply during all strategic air operations.

Economic

Strategic bombing doctrine was originally founded on the recognition of the economic aspects of 20th Century warfare.²⁴ Douhet, Mitchell and Trenchard argued that air power should destroy the factories producing military equipment, in lieu of costly tactical combat between surface forces. They considered armies and navies were superfluous as enemy surface defences would be by-passed by overflying aircraft striking directly at the vital elements of an opponent's economy to obtain an inexpensive and rapid victory.²⁵

In the interwar years the theory was refined by the US Army Air Corps Tactical School (ACTS) who believed that precision bombing of a critical part of an important industry would cause the collapse of a nation's economy.²⁶ A modern industrial society was perceived as intricate and sensitive to disruption; a general breakdown could easily be caused, thereby shattering national morale.

However, operational experience during the Second World War revealed that the needs of the peacetime economy had provided nations with a large reserve industrial capacity able to be exploited during a war.²⁷ Modern industry was not delicate but robust; product substitution could attenuate bombing effects provided there was adequate time.²⁸ Only when a state's economy was critically strained and time was short did economic attacks produce decisive results.²⁹

Such conditions occur when a nation's economy is struggling to meet the urgent battlefield needs of engaged military forces. The Desert Storm strategic air campaign destroyed the Iraqi transportation system, prevented the movement of oil and cut

²³ von Clausewitz, Carl, *On War*, Edited and Translated by Michael Howard and Peter Paret, Princeton University Press, New Jersey, 1984, p 596.

²⁴ Strachan, Hew, *European Armies and the Conduct of War*, George Allen and Unwin, Boston, 1983, p 153.

²⁵ Luttwak, Edward N., 'An Emerging Postnuclear Era?', in *The Washington Quarterly*, Winter 1988, pp 6-7.

²⁶ Greer, Thomas H., *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, Office of Air Force History, USAF, Washington DC., 1985, p 57.

²⁷ Possony, Stefan T., *Strategic Air Power: The Pattern of Dynamic Security*, Infantry Journal Press, Washington, 1949, pp 120-122.

²⁸ Olson Jr., Lt. Mancur, USAF, 'The Economics of Target Selection for the Combined Bomber Offensive', in *RUSI*, November 1962, p 314.

²⁹ Gilster, Dr. Herman L., 'On War, Time and the Principle of Substitution', in *Air University Review*, September-October 1979, Volume XXX, Number 6, pp 11-15.

electricity supplies. The nation was unable to support its army in Kuwait and rapid and complete military disintegration occurred when the land war commenced.³⁰

Relying solely on strategic attacks leaves the initiative with the enemy to accept or refuse demands. An opponent may be willing to absorb punishment and could take advantage of being allowed to concentrate on defeating a single threat. Strategic air operations should be integrated with other military activities to produce a cumulative, synergistic effect on an opponent's ability to continue a conflict. When they are, successes such as Desert Storm are possible; when they are not, poor results, like those of the Korean War strategic bombing campaign, are likely.³¹ Strategic air campaigns uncoordinated with complementary surface force actions can prove to be of little more than nuisance value.

Advanced technology allowed the Desert Storm strategic air operations to be conducted in parallel rather than in series. Traditionally, targets had to be continually reattacked to cause gradual degradation, although the time between attacks allowed a respite for repairs. With more effective weapons, the whole breadth of strategic targets can be engaged and the entire strategic base crippled rapidly. This resolves the ACTS concept's major shortcoming: the determination of the vital, vulnerable segment which would cause systemic collapse. In practice, such precise intelligence has proved very difficult to obtain. Detailed information is no longer necessary as parallel air operations negate the absorption and recovery capability of an enemy's economy.³²

Sustaining strategic air operations requires air superiority, although the two operations are often mutually supporting. The Luftwaffe in the Second World War could refuse combat and ignore fighter sweeps. When these were combined with strategic air operations against vital economic targets, battle had to be accepted, with ultimately disastrous results for Germany.³³ Strategic air attacks on economic targets are not appropriate for all conflicts. The USAF applied ACTS concepts in the Rolling Thunder campaign of the Vietnam War. The attacks had limited effect as the North Vietnamese economy was not essential for the self-sustaining guerrilla warfare waged by the Vietcong in South Vietnam. Only when North Vietnam employed large conventional, mechanised forces during the 1972 invasion of South Vietnam were strategic air offensives effective.³⁴ The Desert Storm strategic air attacks were successful because Iraq was an ideal opponent, being ethnically fragmented, semi-industrialised and employing large, mechanised land forces in a conventional war. Conversely, strategic air operations would be totally unsuitable for an intra-state conflict involving irregular forces and terrorist activities.

³⁰ 'Strategic Air War in the Gulf: Conflicting Views', *Aviation Week and Space Technology*, 27 January 1992, p 65.

³¹ Stewart, Colonel T., USAF, (ed.), *Airpower; The Decisive Force in Korea*, D Van Nostrand Coy Inc., Princeton NJ., 1957, pp 280-281.

³² Waters, Gary, Gulf Lesson One – *The Value of Air Power: Doctrinal Lessons for Australia*, Air Power Studies Centre, RAAF Base Fairbairn, Canberra, 1992, pp 143-144.

³³ McFarland, Stephen L. and Newton, Wesley Phillips, *To Command the Sky: The Battle for Air Superiority over Germany, 1942-1944*, Smithsonian Institute Press, Washington, DC., 1991, pp 117-192.

³⁴ Clodfelter, Mark, *The Limits of Air Power: The American Bombing of North Vietnam*, The Free Press, New York, 1989, pp 117-211.

Psychological

Early air power advocates also suggested air bombardment might win wars rapidly by terrorising the enemy's civilian population into demanding immediate peace at any price. Douhet believed wars should be initiated by an onslaught against morale. In his opinion,

To bend the enemy's will, one must put him in intolerable circumstances; and the best way to do that is to attack directly the defenceless population of his cities and great industrial centres.³⁵

The threat of such attacks was at the centre of the nuclear deterrence strategies practised by the great powers during the Cold War. However, conducting attacks on civilians, using conventional weapons during limited wars, has become internationally morally and ethically unacceptable.

Morale may be adversely affected by means other than killing civilians. Destroying certain targets may cause civilian hardship, affecting the popular will to continue a war; particular buildings or monuments may have great spiritual value, represent societal aspirations, or national unity. A developing nation may consider newly acquired industrial capabilities as symbols of nationhood and progress. When selecting targets, their connotations must be carefully considered as well as their purely objective value.

The skilful use of threats covering a number of targets, selective attacks and careful timing can create a feeling of helplessness and panic. With the material effects of an attack reinforced by psychological warfare, a wave of antipathy towards the domestic leadership may be nurtured. The limited bombing of Rome in 1943 precipitated a political crisis which ended in Mussolini's removal. Bombing brought a thoroughly discredited regime's unpopularity to a peak and signalled to an active anti-war opposition that the time was ripe for political action.³⁶ Air attacks can only create political instability; they cannot install a new government. Unless there is a strong and well organised anti-war opposition, morale bombing may affect people's attitudes but never yield a decisive strategic effect.³⁷

The context of a strategic attack on morale is critical. Scud missile attacks caused widespread panic in Teheran during the Iran-Iraq war, contributing to a striking decline in morale. The damage was limited with only some 2,000 civilians killed. However, the attacks came when most Iranians were not prepared to endure further hardships and the nation was beset by economic and political crises.³⁸ Conversely, German and Japanese morale resisted bombing, even when the situation appeared hopeless, because the populations were fearful of pillage and plunder following allied victory. International diplomacy relieved Iranians of any good reason to endure the hardships of war brought home by limited missile attack. Palatable alternatives to

³⁵ Possony, *Strategic Air Power: The Pattern of Dynamic Security*, p 146.

³⁶ *ibid.*, p 165.

³⁷ *ibid.*, p 167.

³⁸ McNaughter, *International Security*, pp 5-15.

bombing are important in helping to produce a collapse in popular will; the way out must be less painful than further resistance.³⁹

Military

During the Cold War, the two superpowers developed and continuously refined counter-force strategies intended to guide effective attacks on their opponent's nuclear forces should conflict erupt. The great potential destructiveness and psychological impact of nuclear weapons meant that even their limited application could determine a conflict's outcome. Successful strategic attacks on an opponent's nuclear forces would limit the damage they could inflict in retaliatory strikes and possibly terminate a war. In the 1980s, chemical and biological weapons became popularly considered as comparable to nuclear weapons, all three types being collectively termed 'weapons of mass destruction'.⁴⁰ The Gulf War saw strategic air operations conducted against Iraqi chemical and biological weapons and production facilities because of their strategic importance.

More conventional weapon systems may, depending on the conflict's nature, also be perceived to have significant destructive capability or psychological impact at the strategic level. The Soviets considered PGMs as so destructive that counter-PGM targeting would receive the highest priority and form the initial phase of any future war.⁴¹ During the Gulf War, Iraqi Scud missiles were armed with conventional warheads and had marginal military effectiveness. However, their psychological impact and the strategic imperative of keeping Israel from intervening, ensured their employment could affect the war as a whole. The Scud missiles did have a strategic effect and their suppression became a major military goal.

Political

During the 1980s attacks on leading individual opponents at long range became feasible and internationally acceptable. In 1985, Israel retaliated to a terrorist attack on civilians in Cyprus by bombing the PLO Tunis headquarters in an attempt to kill the PLO leader, Yasser Arafat. Similarly, the 1986 US raid on Libya included an attack on Colonel Gaddafi's palace.⁴² Directly attacking the political elite individually responsible for a conflict is readily justifiable, both domestically and internationally. Nations frequently emphasise, when waging wars, that they are in conflict not with the people of a hostile state, but only with their leaders. The threat of attack may convince political leaders that a war is lost, while effective decision making may be impaired by fear or elite dispersion. Leaders may become distanced from their people because of the security measures necessary for their survival. Public appearances important for maintaining national morale may be prevented.

The leadership attack concept widened towards the end of the Cold War when US nuclear doctrine placed increasing emphasis on surgical strikes against specific targets

³⁹ *ibid.*, p 15.

⁴⁰ *ibid.*, pp 30-33.

⁴¹ Grau, *Military Review*, p 20.

⁴² Lucken, Brigadier J. M., British Army, 'A Review of the Utility of Conventional Strategic Bombardment', in *Seaford House Papers 1990*, Addis, Charles and Hayne, Jeremy (eds.), p 63.

whose destruction would paralyse the Soviet political-military establishment.⁴³ The intent was to destroy the Soviet leadership's ability to exercise control, by killing the political leadership, by making it impossible to communicate with subordinates, or by destroying the means by which leadership orders were carried out.⁴⁴ Broad based attacks on strategic level command and control were a major aspect of the Desert Storm strategic air campaign, albeit using conventional weapons. Such attacks may ensure unpopular central governments have considerable difficulty maintaining political control over distant, restive territories leading to internal conflicts. Desert Storm air attacks led to Kurdish and Shi'ite uprisings. These could have split Iraq had the air raids continued, preventing Iraq re-establishing political control. Autocracies and totalitarian regimes are particularly sensitive to political attacks; democracies with broad based popular support are considerably less vulnerable.

There are some practical difficulties in conducting attacks on national political leaders and structures. There can be a large number of targets, they are frequently hardened and often their location is not precisely known. Determining the precise location of important members of the political elite can be difficult. Furthermore, if successful, the attacks on strategic command and control may fatally impair an opponent's ability to negotiate war termination.⁴⁵

STRATEGIC AIR POWER IN THE NEW WORLD ORDER

The object in war is to attain a better peace – if only from your own point of view.⁴⁶

B. H. Liddell Hart, 1954

Strategic air operations are most effective when integrated with other military actions, parallel operations are conducted and air superiority has been gained. They are not suitable for all wars and before being undertaken must be deemed by political authorities and military commanders to be appropriate to the war and the opponent.

Considering the expected nature of conflicts in the new world order, and contemporary strategic air power concepts, future strategic air operations should be directed against: firstly, the political leadership; secondly, strategic weapons systems; and lastly, those key economic capabilities crucial for military effectiveness and long term national viability. In the emerging international system, these target types are the centres of gravity of the political, military and economic elements of a state's grand strategy.

Morale, the centre of gravity of the psychological element of grand strategy, should only be indirectly assaulted through attacks on political, military or economic targets. However, in common with all combat activities, air attacks on national centres of gravity can create problems. Political and military leaders must carefully balance the

⁴³ Gergorin, *Adelphi Papers 266 New Dimensions in International Security*, p 4.

⁴⁴ Richelson, Jeffrey, 'The Dilemmas of Counterpower Targeting', in Ball, Desmond and Richelson, Jeffrey (eds), *Strategic Nuclear Targeting*, Cornell Paperbacks, Ithaca NY, 1988, p 162.

⁴⁵ Gray, Colin S., 'Targeting Problems for Central War', in Ball, Desmond and Richelson, Jeffrey (eds), *Strategic Nuclear Targeting*, Cornell Paperbacks, Ithaca NY, 1988., pp 183-184.

⁴⁶ Liddell Hart, B.H., *Strategy*, 2nd Rev. Edn., Signet Books, New York, NY, 1974, p 353.

advantages gained with the difficulties created before strategic air attacks are authorised.

Political Leadership

For some three centuries, attempts to kill opposing political leaders were generally considered illegitimate; only members of a state's military forces were acceptable victims. Since 1945 this principle has gradually broken down and leaders of an enemy state are usually regarded as criminals. The political elite during a conflict can now expect to be the subject of attack and may have to lead the semi-nomadic life which Yasser Arafat currently does.⁴⁷

The capabilities of modern air power makes killing distant political leaders readily achievable; however, excellent intelligence is essential. The Israelis missed Yasser Arafat in Tunis because he was unusually late arriving at the PLO headquarters. During the later stages of the Gulf War, the US would probably have attempted to kill Saddam Hussein; however the requisite intelligence was not available. Intelligence concerning the location of members of a nation's ruling elite will be most accurate before a conflict commences; therefore nations may perceive value in pre-emptive action. The 'Lucretia Borgia' solution of killing one's political enemies is, however, a reversion to an older, more brutal age.⁴⁸

Sudden political problems may be caused by killing or injuring national leaders or by preventing easy, timely communication between them. If the allies had known in advance, could they have taken advantage of the confusion and uncertainty in the German command structure immediately after the attempt on Hitler's life on July 20, 1944? Strategic air attack could create such an opportunity in some future conflict, although the impact on an enemy's ability to conduct military operations or organise postwar recovery cannot be accurately or confidently predicted.

A state with a political system destroyed during a conflict may be vulnerable to attack from neighbours, suffer civil turmoil with unpredictable results, or require large scale policing. A nation thus defeated may disintegrate into scarcely viable entities, governed dictatorially and racked by civil and inter-state conflicts.⁴⁹

Strategic Weapon Systems

Strategic air attacks on the nuclear, chemical and biological weapons of aggressor states will probably occur early in future regional conflicts. Such weapons are legitimate targets under law-of-war treaties, disturb international and domestic sensibilities and are perceived as threatening to global stability and peace. Their supporting infrastructure is often large, difficult to disperse or camouflage and vulnerable to air-delivered weapons. However, the weapons themselves are increasingly compact and mobile.

⁴⁷ Van Creveld, Martin, *On Future War*, Brassey's (UK), London, 1991, pp 199-200.

⁴⁸ Van Creveld, Martin, 'The Persian Gulf Crisis of 1990-91 and the Future of Morally Constrained War', in *Parameters*, US Army War College Quarterly, Volume XXII, Number 2, Summer, 1992, pp 31-33.

⁴⁹ Gray, *Strategic Nuclear Targeting*, p 185.

Considerable effort was expended in 'the great Scud chase' of the Gulf War, although missile launches continued until the war's end. The apparent difficulties suppressing Scud missiles may influence states to take pre-emptive actions, to destroy strategic weapons before they enter service or, if operational, before they disperse after a war commences. The threat of a disarming first strike may cause strategic weapons to be used early in a crisis; states may consider they must 'use 'em or lose 'em'.

The current methods of preventing the proliferation of nuclear, chemical and biological weapons, and of controlling the development of ballistic missiles, have had only limited success. UN approval of attacks on weapons of mass destruction during the Gulf War may have established a precedent for coercive arms control. In future, the UN Security Council may authorise strategic air operations in peacetime to eliminate the nuclear, chemical and biological arsenals, and the ballistic missile facilities, of aggressive and renegade regimes.⁵⁰

Key Economic Capabilities

The destruction of a nation's economy can cause a rapid military collapse; however, the civilian population can also suffer if the attacks are not sufficiently focused, become indiscriminate or cause excessive collateral damage. Those parts of a nation's infrastructure which exclusively support military rather than civilian purposes can be difficult to determine, so good intelligence is essential. This may prove difficult as modern communication systems, media networks, electrical power facilities and transportation networks all have civilian and military uses. If the air attacks are not well planned, unsanitary conditions and diseases could proliferate, famines may occur and medical care be discontinued.⁵¹ Such conditions may sow the seeds of future conflicts.

A solution to the problem of incomplete surrenders may be to cripple an aggressor state's economy during a conflict in order to prevent large military forces being recreated immediately after war termination. Developing nations are particularly vulnerable to economic attack, because of their limited infrastructure and industrial facilities. Strategic air attack may gravely disrupt these states' national economic development, creating difficulties for many years.⁵² However, precise and carefully considered force application is essential or else a 'bad' peace could result. In such circumstances, a nation suffering serious economic hardships may become politically unstable and create further regional strife.

Moreover, the new world order's emphasis on market economics is creating global and regional economic interdependence. Damaging a hostile state's economy may, after the conflict has ended, adversely affect neutral or friendly nations, or even the

⁵⁰ Lewis, William H. and Joyner, Christopher C., 'Proliferation of Unconventional Weapons: The Case for Coercive Arms Control', in *Comparative Strategy*, Volume 10, Autumn 1991, pp 305-309.

⁵¹ Zacks, Captain Yuval Joseph, US Army, 'Operation Desert Storm: A Just War?', pp 30-35 in *Military Review*, January 1992, p 33.

⁵² Singh, Air Commodore Jasjit, 'Into the 21st Century – Smaller or Larger Air Power: A Regional View', in Stephens, Alan (ed.), *Smaller But Larger: Conventional Air Power Into The 21st Century*, RAAF Air Power Studies Centre, Canberra, 1991, p 109.

victors. No sensible strategist should seek to transform a hostile country into a desert for, as Nietzsche said, deserts spread.⁵³

The long term impact of attacks on key economic facilities however, may be limited by the further development of weapons which disable, rather than destroy. During the Gulf War, Tomahawk cruise missiles with carbon fibre warheads were used to disable Iraqi electrical generating facilities by causing massive short circuits. Standard high explosive warheads would have destroyed the facilities, creating long term problems for the civilian population. Disabling weapons may allow decisive military advantages to be gained while inflicting damage relatively easily rectified after the war has ended.⁵⁴

Morale

Retaining international and domestic approval of military actions requires avoiding bombing civilians or civilian associated targets. States are being increasingly careful to adhere to the international laws-of-war, which are steadily evolving to outlaw attacks on civilians. The most precise current formulation is the 1977 Geneva Protocol I Article 48 which states:

The Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian and military objectives and accordingly shall direct their operations only against military objectives.

This Article is becoming internationally considered as customary law and therefore binding on all nations, irrespective of the law's status, or whether individual states have ratified it.⁵⁵ Civilians should not be attacked directly for moral, ethical and legal reasons; however, they must be made aware that a war is occurring so they put pressure on their government to cease the conflict.⁵⁶ Air raids on Iraqi command and control facilities in Baghdad were scheduled for the middle of the night, to ensure Iraqis knew the war was continuing and their government was incapable of containing it.⁵⁷

The targets of strategic strikes could be political, economic or military. The actual attacks should be conducted in a manner, and against those parts of a target system, which will have a demoralising psychological impact, as well as a material effect. Attacks to impair civilian morale have usually been undertaken only after economic attacks have failed to produce decisive effects; in future civilian morale should be targeted for indirect attack from the start of the conflict.⁵⁸

⁵³ Possony, *Strategic Air Power: The Pattern of Dynamic Security*, p 50.

⁵⁴ Fulghum, David A., 'Secret Carbon-Fiber Warheads Blinded Iraqi Air Defenses', pp 18-20 in *Aviation Week and Space Technology*, April 27, 1992, p 18.

⁵⁵ Roberts, Professor Adam, 'International Law and the Use of Force: Paper 1', in *Adelphi Papers 266 New Dimensions in International Security*, p 61.

⁵⁶ Warden III, John A., 'Airpower employment in the Future World', Paper presented at the *Tufts University Conference on the Air Force*, 3 April 1991.

⁵⁷ Clodfelter, Major Mark, USAF, 'Of Demons, Storms, and Thunder: A Preliminary Look at Vietnam's Impact on the Persian Gulf Air Campaign', in *Airpower Journal*, Winter 1991, p 26.

⁵⁸ *ibid.*, p 23.

All strategic targets should be evaluated considering the effect on the enemy's state of mind and the regime's stability as well as the material damage able to be inflicted. Such evaluation requires a deep knowledge of an enemy's national institutions, popular psychology and economic infrastructure.⁵⁹ A psychological warfare campaign must be conducted simultaneously to reinforce and maintain the adverse affect of bombing raids on national morale.

CONCLUSION

The emerging international system focuses strongly on economic growth, industrial development and commerce. Regional conflicts are occurring more frequently, generally involving sophisticated military forces requiring extensive logistic support from national economies. A war's conclusion may not resolve underlying disagreements although, with the end of the Cold War, sanctuaries cannot be used to shield an opponent's critical elements. The nuclear forces of the major powers are declining in importance; however, the proliferation of nuclear, chemical and biological weapons amongst minor states may create difficulties.

Technological advances now allow small numbers of aircraft to have disproportionate effects on strategic targets, with minimal collateral damage and few civilian deaths. Strategic air operations have limited impact if conducted gradually or intermittently; to be effective they must be continuous, intense and sustained. Effective strategic air operations require air superiority and close integration with other military operations.

Strategic air operations in the new world order should be applied, in order of priority, against a hostile nation's political leadership, strategic weapon systems and key economic capabilities. Morale should only be indirectly assaulted through attacks on the specified target sets. These strategic air operations attack the centres of gravity of an enemy's sources of political, military, economic, and psychological power. Such operations affect a conflict as a whole, by focusing on those elements of the grand strategy which a hostile state employs in pursuit of its national objectives. The characteristics of the emerging international system and of strategic air power indicate that strategic air operations will be more relevant and have greater utility in the new world order than in the old.

⁵⁹ Lucken, *Seaford House Papers 1990*, p 66.