“[Australian air attacks] exacted the most frightful sacrifice from [troops], severely damaging their morale. The feeling of helplessness in the face of the enemy fliers instilled a paralysis in both officers and men. The columns of savaged artillery pieces, automobiles, and motor transport, together with shattered wagons, horses, and men, blocked the road in many places.”

German Gen. Liman von Sanders, advisor to Turkish Forces Palestine 1918

As the Air Force moves towards its preferred future through Plan Jericho it is tempting to perceive air power as a modern concept which has only now evolved to a sophisticated form after more than a century of powered flight. However, history shows us that while the general perception of military aviation 1914–18 is of aces living short but daring lives is not altogether inaccurate, what is frequently missed in the narrative is the rapidity with which military flying became a complex weapon of war. The use of the air to further wider objectives as opposed to the simple use of aircraft to generate effects in the land or maritime domains was evident as early as 1915 when Britain, France and Germany conducted strikes against targets outside of immediate war zones.

The potential for aviation to change the conduct of conflict was well appreciated in the years leading to World War I. At the Hague Convention of July 1899, such were the concerns regarding the threats posed to civilian towns and other ‘undefended’ targets by aviation, the delegates agreed to a declaration banning—for five years—the discharge of projectiles and explosives from balloons or by other platforms in the air. At the second Hague Convention of 1907 the declaration was reaffirmed. The considerations of the Hague Conventions were timely since in 1911 aircraft were used operationally for the first time by Italy during the Italo-Turkish War. Initially in the reconnaissance role, by November aircraft were being used to conduct bombing strikes on Turkish positions. The Italian aviation commander during the Italo-Turkish War and in World War I, Julio Douhet, was to write a seminal work on the nature of air power in 1921 titled The Command of the Air. While intended to address Italy’s defence needs, many see in this work the seeds of the strategic bombing campaign of World War II.

Clearly, the great powers were all well aware of the potential for aircraft to pursue war aims beyond the immediate battlespace to the extent that civilian assets could become targets. The initial response was to limit such threats through the Hague Conventions. However, by 1914 only the Governments of the UK, USA, Portugal and Belgium had ratified the agreement. The realities of total war in 1914 changed such notions of limiting warfare to military targets to the extent that by January 1915 both Britain and Germany had conducted air raids on their adversary’s cities. Any consideration regarding the potential for civilian casualties was rationalised by focusing on the military nature of the targets selected.

By 1917, such were the deprivations caused by German fixed wing and airship attacks on London that the national will to continue the war against Germany was thought to be threatened. The nature of this debate in the UK in part mirrors Douhet’s 1921 thoughts on strategic bombing and informs the more refined modern doctrine of effects-based targeting.
At the operational level, the threat posed by German airships to Britain resulted in the Royal Naval Air Service, as early as September 1914, developing an offensive/defensive control of the air strategy based on attacks on enemy airbases, interception of air raids, active defensive measures such as anti-aircraft batteries and passive defence such as the use of blackouts. The first of the Smuts Reports of 1917 (see Pathfinder 43) further directed the development of the UK's integrated air defence system—an enhanced version of which was employed during the Battle of Britain 23 years later—with radar being the only element missing in 1917. The second Smuts report recommended the establishment of the Royal Air Force as an independent arm of Britain's armed services.

Within the ground campaign on the Western and Eastern Fronts, the use of aircraft for reconnaissance purposes quickly developed into a practical tool for informed decision-making. The successful British retreat from Mons, the French victory at the Battle of Marne and the German encirclement and subsequent victory over Russian forces at the Battle of Tannenberg were all, in part, influenced by intelligence gained from the air.

When Australian forces landed at Gallipoli in April 1915 they were supplied with aerial reconnaissance images from the Royal Naval Air Service (RNAS). The reconnaissance capability in theatre included the purpose built seaplane carrier HMS Ark Royal as well as deployable aerial camera and film processing units complete with image analysts and intelligence officers.

Aerial observation was further enhanced through the use of radio. As early as 1912, British airships equipped with transmitters demonstrated the effectiveness of aerial observation during prewar exercises. In one prophetic instance LTGEN Douglas Haig was out maneuvered and soundly beaten during an exercise in July 1912 by LTGEN Sir James Grierson who had near constant intelligence reports transmitted to him from an airship.

By 1917, the Australian Flying Corps (AFC) No 1 SQN was routinely employing radio equipped aircraft in Palestine and, later on the Western Front, the AFC's No 3 SQN employed radios on a daily basis. While the use of radio was employed for artillery and observation reports on ground forces, new and effective uses were continually found. For example, during a period of British air superiority in the second half of 1918, No 3 SQN aircraft began reporting on attempts by German aircraft to establish local air control. As enemy formations were located, their tracks were reported and RAF Sopwith Camels were duly sent to intercept the interlopers. This early form of AEW&C, while rudimentary at best, was a forecast of the potential for later developments.

The threat posed by unlimited observation by aircraft naturally resulted in the concept of control of the air over friendly territory while maintaining freedom of operations over the adversary. From this simple concept the doctrine of air superiority developed. When, in 1915, French pilot Roland Garros modified his aircraft to fire a machine gun through his propeller arc he set a precedent for combining the act of flying the aircraft with that of targeting another aircraft. The Fokker Eindecker E1 fighter further developed the concept when it was fitted with the first successful 'interrupter mechanism', which harmonized the firing of the machine gun with the movement of each propeller blade. This, the first airborne weapons system essentially integrated the aircraft's power plant, weapon and flight controls with the act of flying, aiming and operating the gun—all of which was centrally controlled by the pilot.

The development of practical fighters resulted in pressure being applied to the aviation industry to produce aircraft with ever more powerful engines and expanded flight envelopes. As in the 21st century, the battle for control of the air in World War I was fought out as much in the design houses of aircraft manufactures as it was in the air.

The experience of employing air power over the last 105 years has enshrined the characteristics and roles of air power in doctrine and in campaign planning. While the technology and performance of 5th generation air forces have long since exceeded those of 1914, the essential nature of conflict and that of the employment of air power has remained constant. What evolves and generates change are the 'ways and means' in which adaptive human responses in combination with technology has created opportunities and threats which in turn has forced change to organisation, capability and plans.

**Key Points**

- The fundamental characteristics and roles of air power were establish during World War I.
- There is an unbroken chain linking the modern understanding of air power to the events of 1914-18.
- The application of air power will continue to evolve in line with threats and opportunities created by a combination of technology and human decision-making.