

Inter-war airpower theory and World War II

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ROSS HALL, JUN 28 2011

The development of air power in the realm of the military emerged almost at the same time as aviation itself due to the accelerating features of the First World War. Due to the extraordinary conditions that were placed upon the nascent air forces that were in operation, the variety of military applications that were available for aircraft quickly multiplied to the point where, by 1918, equipment and techniques had been produced to encompass almost every form of aerial mission (Mueller 2010: 1). Clausewitz claimed that the enemy's 'centre of gravity' was key to compelling an opponent in conflict or bending him to your will. This centre of gravity, while traditionally seen as the enemy's forces, can take many forms and many degrees of accessibility (Frankland 1995: 261).

With air power's inception, it became possible to make strategic strikes against the enemy's centre of gravity without the necessity of making contact in a traditional land or sea war. Instead, air power could be used to bypass the enemy's forces and take the fight straight to the enemy's heartland, to his new centres of gravity. Through using strategic bombing, it is possible to undermine the opponent's will and means to continue with a war without the need to engage in traditional battles. While there have been historical issues with land armies being able to navigate enemy terrain, and with naval forces being able to strike deep into enemy territory to obtain objectives without viable waterways, aircraft are unaffected by these issues and can instead, theoretically, attack at any point in the enemy's territory. In addition to this increased level of reach, aircraft are also able to be deployed at a much faster rate than traditional land and naval forces (Kiras et al. 2008: 183-184). Due to these innate advantages, it was quickly realised that air power presented a new aspect of warfare that, if applied correctly, could bring about quick and decisive victories. One of the main reasons for the rapid development of air forces during and after the First World War is that as Cohen claims, 'Air power is an unusually seductive form of military strength, in part because... it appears to offer gratification without commitment' (1994: 109). This belief aside, the first role that military aircraft took on in the military arena was of reconnaissance and observation to aide in the use of artillery. It was rapidly shown on the battle field that this was an important role that needed to be played, especially when the war began to get bogged down into a more attritional form of trench warfare. Furthermore, due to the growth in reconnaissance aircraft and the improvement of information being relayed to artillery positions, it was then necessary to develop fighter aircraft that could find and destroy reconnaissance aircraft as a counter measure (Kiras et al. 2008: 188). When technological developments permitted, it was possible to expand this field into more offensive weapons, such as the German Zeppelins. These were later found to be too difficult and expensive to build, base and maintain, whilst also being limited in the usage by the fact that they could not operate in winds of over 25-30 knots. In contrast to the Zeppelins, airplanes possess none of the disadvantages. They were considerably cheaper, easier to manufacture and their higher speed and smaller size made them more capable of self-defence (Corum 1997: 20). These developments helped to secure the future role that aircraft would play in successive wars and promoted the, at times, fierce debate as to how they would be best put to use.

During the interwar period, many theorists grappled with the issues revolving around airpower and what benefits it could afford a military that was able to adopt and apply effectively. These theorists include, although not exclusively, Viscount Hugh Trenchard, General Giulio Douhet and General William Mitchell. These theorists have developed various theories as to how air power is to be best applied to the theatre of war. They left a long lasting impression on the development of air power doctrine through endeavouring to best understand the abilities that aircraft could provide. This included the development of interest in aviation on the part of the public and government in order to produce investment in the face of resistance from the more traditional army and navy (Mueller 2010: 2).

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In his 1921 book, *Command of the Air*, Douhet argued that air forces had quickly become the primary means for conducting a war and that wars could be rapidly won through the implementation of a strategic campaign against the enemy's homeland. He believed that in warfare, the enemy's civilian population had developed into being the most important strategic target of all. This is because he believed that a successful aerial bombardment would demoralise civilians to such an extent that they would rise up and force the government to move for peace (Corum 1997: 26). This theory was based on the notion that during a war, the civilian population was the enemy's Achilles heel and would therefore provide an excellent target and opportunity for military forces to attack. Through attacking in this way, it was believed that a short and relatively concise war could be delivered to avoid the attritional battles that had been seen during the First World War. This position did, however, come with some drawbacks, as the German military foresaw, in that terror bombing of this kind was likely to cause reciprocation in kind and would prove to be counter-productive, actually increasing civilian resolve (Ibid). This psychological aspect to bombing campaigns would later develop and remain to be a determining feature in the strategies applied to the Second World War.

Viscount Hugh Trenchard assumed that the bomber will always be able to succeed in reaching its target through any defences, and therefore does not need to be accompanied by a fighter escort. He also claimed, alongside Douhet, that an aerial offensive against the civilian population of the enemy can produce positive outcomes as civilian morale is fragile, although he believed that British morale was stronger than that of the Germans. By attacking the civilian population with bombing runs, the moral effect will be much stronger than the physical effect. His belief in using aircraft as an offensive weapon rather than a defensive one, led to the notion that by attacking beyond the frontlines of the war, into the enemy's heartland, it would be possible to increase the psychological effects that the bombing campaign would have (Jordan et al. 2008: 195). Through attacking deep into enemy territory, the civilian morale could be broken by not only attacking the population itself, but by striking vital industrial targets as well as communications, as the loss of these centres would cause the population to put pressure on the government to make peaceful terms with the enemy. This position had been made before by Sun Tzu, who claimed that,

'The general rule for the use of the military is that it is better to keep a nation intact than to destroy it... It is better to keep an army intact than to destroy it... Therefore, those who win every battle are not really skilful – those who render others' armies helpless without fighting are the best of all' (Boyd and Warden 1994: 5).

Trenchard did, however, differ from Douhet in that he believed the bombing campaigns should be waged in accordance with international law, therefore limiting collateral damage, selecting urban targets for military significance and attacking infrastructure and production areas (Mets 1999: 34-39).

The view that a capable air force could bypass traditional forces was also shared by many in the German high command before the Second World War, including Maj. Gen. Walter Wever and Maj. Gen. Helmuth Wilberg. Under these theorists, the 1935 *Luftwaffe Regulation 16: Conduct of Aerial War*, taught military students that the primary target for air forces was 'the attack on the sources of enemy power'. These sources of power included centres of industrial production, food production, import facilities, power stations, the rail system, military installations and the centres of government and administration (Corum 1997: 27). These theories did away with the Clausewitzian theory that the enemy's centre of gravity was primarily his military forces as it was now possible to bypass them through the air, and strike at his heart, delivering a quick and decisive victory.

In Trenchard's view, any problems that might occur through the use of bombers, such as poor accuracy, must be overcome as air superiority is vital for all other military operations to succeed. This air superiority would be established by a battle prior to any other engagements that would then determine the future course of the war. The theory of gaining air superiority as a necessary prerequisite for any further military operations was also shared by Johannes von Seeckt. Von Seeckt pictured an air force that would be used to strike deep into the enemy's heartland as an opening move of any campaign. He believed that the first mission for the air force would be to attack the enemy's aerial capabilities and destroy its aircraft while they are still on the ground, thus reducing the risk of a counter attack and securing air superiority over the battlefield. Once this air superiority is gained, it would then be possible for the air force to strike deep into the homeland, targeting mobilisation centres and rail transport centres. This move to paralyse the enemy's capabilities to mount a counter-offensive would be conducted as a modern, motorised and mobile ground force move forwards on the offensive (Corum 1997: 24). A move of this kind would also

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effectively draw the enemy's aerial capabilities away from the front in order to defend the homeland as it came under increasing attack, this would as a result leave front line troops without aerial cover, and due to the increasing defence needs, draw vital resources away from the front (Frankland 1995: 64).

General William Mitchell believed that by using the ability to effectively leap-frog the enemy's forces, it would be possible to wage wars on the all-important centres of gravity that would be so decisive, the total level of suffering would be reduced, therefore making the use of air power in wars more humane than either land or naval forces. Mitchell broke away from Trenchard, claiming that air superiority would be achieved through successive attacks on the enemy's air power on the ground, as well as in an aerial battle. He also claimed that the new high-altitude, four engine bombers would be too difficult for the current generation of slower-climbing fighters to reach before they needed to turn back for fuel, and as such, would be free from interference. This would result in bombing runs constantly reaching their targets unharmed and would not need to have a fighter escort. Due to this, it would be possible to mount daylight bombing runs to deliver greater accuracy, thus shortening offensive campaigns to an extent where they would be quick, economical and humane (Mets 1999: 34-39). He also claimed that these campaigns could be of such a high magnitude in terms of damage to the enemy's heartland that they would have to capitulate with demands without making any form of counter-offensive (Ralston 1999: 54).

There was a belief that was held on both sides of the Atlantic prior to the outbreak of the Second World War, that due to the very nature of the new aerial weapons, and the scale of the medium in which they operate, that the resulting invulnerability would prevent any kind of real aerial battle from taking place. This would in theory allow for the wholesale destruction of the enemy's centres of gravity without receiving casualties in anything like the numbers that would be expected in a typical military campaign (Ralston 1999: 54).

In reality, however, the levels of destruction that would have been needed to bring a quick and decisive end to the Second World War that was so desired by the inter-war theorists was simply not possible. Air power quickly became unstuck by problems as simple as bad weather that prevented the bomber crews from being able to deliver their payloads to their destinations, even with the use of modern equipment such as radar. Simple problems such as this resulted in lasting damage to the image of air power, causing many to believe that air power was instead best used as a tool for supporting ground and naval forces, rather than operating in its own, independent capacity with its own missions and goals (Jordan et al. 2008: 197). Even from the earliest strategic bombing campaigns, there were a great number of problems that needed to be remedied before any real, significant damage could be dealt with air power. In the First World War, for example, the British bombing campaign during 1918 resulted in 1,177 German casualties and 15.3m Reichmarks in damages. These early results were also accompanied by a large level of losses that were unsustainable in the long-term. These bombing runs resulted in the loss of 328 British airmen for every 3 civilian bystanders killed, and for every 1.54 tons of bombs dropped; one aircraft was lost (Corum: 1997: 21).

Unescorted bombers, following the direction of theorists such as Viscount Trenchard and General Mitchell, suffered heavy losses when facing aircraft that were capable of intercepting them. The bombers ability to actually hit their targets accurately fell far short of the pre-war expectations that were often a result of exercises conducted in perfectly ideal conditions. When the bombers moved to conducting runs at night so as to avoid such heavy losses, they then ran into problems with accuracy when dropping their payloads as they had great difficulty in finding their target cities. Rather than the strategic knockout that had been predicted by the pre-war theorists, air battles fell into contests of attrition, where acceptable losses were set at 5 per cent per mission. This gave a grim prospect for air crews as an attrition rate of just 5 per cent meant that their average life expectancy was as low as 23 sorties (Mueller 2010: 3).

The issues of poor targeting abilities were particular visible in the air campaign against Japan in 1944. In this campaign, the bombing was condemned as a failure due to the issue of not being able to produce enough visible damage to the targeted industrial plants. Due to the focus on visible damage, the focus was instead placed upon incendiary attacks, which from March 1945, were deemed as a great success as the damage that these caused could be easily quantified in terms of the area that they covered, which could be viewed from the air. Even with a large amount of visible damage, these attacks made little contribution to the war's overall outcome and due to naval blockades, attacks against the main industries of the Japanese mainland proved unsuccessful as they had already been shut down prior to the attacks. Also in this campaign, the Japanese government was willing to accept that there

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would be a degree of civilian losses from American firebombing (Pape 1996: 57). This is not to say that aerial bombing in all situations was not successful in demoralising the target's civilian population as quite the opposite was seen to have occurred in Germany. After the Second World War, interviewed German civilians almost unanimously claimed that bombing was the hardest part of the war that they had to bear (Frankland 1995: 64). In these situations, there was simply the issue of the governments that ruled them. The targeted populations did not rise up against their governments and demand capitulation with the enemy's demands as theorists such as Douhet had predicted, instead the resolve had been hardened by years of bombing (Mueller 2010: 3). This may have been solely due to the social and political construction of the target countries. Both Japan and Germany were dictatorships that were determined to keep the war going at any costs. Both Japan and Germany were willing to take the civilian casualties if it meant that the war machine could keep on rolling towards the enemy. This occurred even with the unprecedented scale of bombing, especially in Germany. The scale of the bombing runs against Hamburg in just one week in July 1943 was such that almost as many civilians were killed as were in the entire Blitz on British cities. In the face of such devastation, it appears clear that the Third Reich would have continued the war regardless of the impact of the bombing campaigns on both infrastructure and the civilian morale and population (Gregor 2000 1051-1053). This issue gave rise to the notion that 'In war the chief incalculable is the human will' (Sakulich 2001: 29). This view was one put forwards by J.F.C. Fuller and B.H. Liddell Hart who claimed that the aim of all military planning should be the strategic paralysis of the enemy's forces. This can be done through the destruction of the enemy's military organisation, and therefore its military strength. Also, with this aim, it is necessary to economise on the use of military force, requiring instantaneous effects through the massive implementation of force in the first instance of combat to prevent the 'slow bleed of successive, slight body wounds' (Boyd and Warden 1994: 6). While these policies were implemented with the massive wielding of air power on the Allies' part, in the case of the campaigns against Japan and Germany were simply not successful enough to bring about the swift end that was so desired by the inter-war theorists. With this in mind, it could be fair to say that strategic bombing may have enjoyed a greater level of success in shortening wars had the targets for its use been chosen in a better way. Assumptions would have been made in Allied war cabinets that the civilian populations of enemy countries would rise up, as this was seen as a likely occurrence in their countries. This therefore represents a projection of domestic social construction onto the enemy, which had this not been done, could have prevented long and drawn out bombing campaigns, resulting in a better allocation of aircraft and resources to shorten the war in other ways.

All of these issues eventually meant that even with the great amount of investment, development and innovation that had pushed aviation forwards before and during the Second World War 'Airpower did not win the war on its own, but it proved to be the critical weakness on the Axis side and the greatest single advantage enjoyed by the Allies' (Gray 1999: 228).

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