CHAPTER - I

RISE OF AIR POWER AND THE CONCEPT OF STRATEGIC BOMBING
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In a world, wherein human strifes and conflicts continue to endure, it has only been natural that most of man's otherwise innocuous inventions, innovations, and emerging arts have been consigned to the fields of warfare. The ingenuous art of flying - a dream realized after too long - could not have been any exception. Visionaries amongst the ranks of fighting men quickly seized at it, initially just to use it as a tool in aid of war-waging on the land and sea surfaces but later because of its very versatility and omnipotence developed it into a new dimension of fighting - in the air. Through this fighting in the air nations have acquired an ability to exert their influence and to project their will and power. This ability to exert power through the medium of the air has come to be termed as Air Power.

Conquest of the air had been an ambition of man for countless ages. He had been trying to fly as far back as he had been able to dream. Even his gods of the ancient
mythology were credited with wings by means of which they could get airborne. "The Chariot of Phoebus (Apollo): the winged sandals of Hermes (Mercury), subsequently lent to Perseus the fighter pilot; the stories of Pegasus and of the winged agronauts who fought the Harpies, are all variations on a common theme." 1

Leonardo da Vinci, at the beginning of the sixteenth century, had designed and produced a winged contraption which temporarily took him off the ground and, it being no more than a delayed drop, but in doing so, it stimulated the development of flight. "Following him, came a long trail of intrepid birdmen who spent hours watching birds in flight, and propounding theories on which they based practical experiments." 2 Although such experiments persisted yet there is no authentic record of anyone having successfully taken off from mother-earth until 1660 when Allard, and in 1678 Bernier, both Frenchmen made a creditable attempt to fly with machines. In 1783, the Montgolfier brothers made experiments with balloons filled with hot air. Later

hydrogen gas took the place of hot air as the lifting agent. Many of such experiments continued resulting in steerable balloons. Further modified, they were termed as flying machines. Then followed machines powered by manual power, electric power and even small steam engines of just three horse power. It was not, however, until the present century when the development of the petrol engine reached a high state of efficiency that the conquest of the air became a possibility.

Man's attempts and desire to fly and its consequential effects upon the affairs of mankind have also been a cause for concern for thinkers, and writers from almost all walks of life. Francesco de Lana, a Jesuit Monk, had warned the world, as early as in the 17th century that in the times to come there would be airships and one of these airships might be able to cause a ship to capsize by flinging down pieces of iron, kill the crew and set the ship ablaze with artificial fire, with bullets and with bombs. Louis P. Mouillard, an Algerian poet-farmer, who had also attempted to build a flying machine, wrote in *L'Empire de L'Air* in 1881:

> In the event of the problem of flight having been solved by man... All will have to be done over again: the fortifications, the manoeuvres, the defenses of the

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frontiers, strategy; all is brought to naught. It will even cause, in a very short time, the suppression of nationalities; races will be rapidly commingled or destroyed, for there will no longer be efficient barriers, not even those moveable barriers which we term armies. No more frontiers! No more insular seclusion! (sic) No more fortresses! ...Will society perish?  

He envisioned a period of distress and tempests followed by the one of restored equilibrium wherein humanity will enter into possession of the empire of the air.  

Giulio Douhet, an ex-cavalry officer of Italy, predicted in 1909 that the sky too was about to become a battlefield. He wrote several books such as, *The Command of the Air* (1921), *Probable Aspects of a Future War* (1928), *Recapitulation* (1929) and *The War of 19--* (1930). His fundamental thesis rested upon the lessons of World War I, as applied to Italy's strategic position vis-a-vis another European power in a future war.  

In Douhet's opinion, only an independent air force could obtain decisive results for Italy. Aircraft, he observed,
were weapons for offensive action, of incomparable potential, against which no effective defence could be foreseen. A nation attaining 'command of the air' could proceed to shatter the enemy's war potential and will to wage war directly by aerial bombing.  

He wrote:

Aerial warfare admits of no defensive attitude, only the offensive. Of two Independent Air Forces, the one stronger in combat should neither seek nor avoid aerial combat; the weaker should try to avoid it. But both stronger and weaker should always be in readiness to act even before hostilities break out; and once action has begun, both should keep in action incessantly and with utmost violence trying to hit the enemy's most vital targets—that is, targets more likely to cause repercussions on his air power and moral resistance.

He brought out that victory smiles upon those who anticipate changes in the character of war not upon those who wait to adapt themselves after the changes occur. And that to conquer command of the air means victory, to be beaten in the air means defeat and acceptance of whatever terms the enemy may impose.

Alexander 11, a distinguished American scientist, in his address before the National Convention of

7. Ibid., p.168
the Navy League of United States, Washington (April 1916) exhorted America to produce not only flying machines but aviators as well "before the time comes when the necessity for their use in war arises...and that nation which gains control of the air will practically control the world".9

Winston S. Churchill as British Minister of Munitions, in a Memorandum dated 21 October 1917 wrote:

War proceeds by slaughter and manoeuvre...it is pointed out that an air offensive has never been considered on the same scale or with the same ruthlessness in regard to losses for adequate objects as prevail in the operation of armies. Aeroplanes have never been used to attack vital objectives in the same spirit as infantry have been used, viz. regardless of loss, the attack being repeated again and again until the objective is secured...the indispensable preliminary to all results in the air, as in, every other sphere of war, is to defeat the armed forces of the enemy.10

Brigadier General William Mitchell, an American theorist, concerned with the future role of air forces, spearheaded a public crusade for an independent Air Force. He proclaimed the dawning of an aeronautical era wherein destinies of all

9. Alexander Graham Bell, quoted in Emme, n.4, pp.31-32.
people would be controlled through the air. In such an era, aerial sieges could be laid against a country - so as to prevent any communication with it, ingress or egress, on the surface of the water or even along railways and roads... A new set of rules for the conduct of war will have to be devised and a whole new set of ideas of strategy learned by those charged with the conduct of war.11

Unlike Douhet, Billy Mitchell had stressed upon the use of transportation and communications in war as well as in peace: "Just as power can be exerted through the air, so can good be done, because there is no place on the earth's surface that air power cannot reach and carry with it the elements of civilization and good that comes from rapid communications."12

Air Power appeared, to these visionaries, as capable of acting faster than either land or sea forces and also capable of striking more directly at the enemy than armies or navies could.13 Whatsoever, the traditionalists and orthodox military men continued to consider aircraft as a


12. Ibid., p. 175.

sort of extended artillery only operating in conjunction with and under the control of the army commanders. The new visionaries, however, believed that air power could certainly supersede surface power. And, certain scattered incidents of armed conflicts wherein use was made of the aircraft, quickly proved that air weapon was destined to become ever more useful and was to be utilized in more important roles in order to achieve war-aims. Nevertheless, the difficult question to answer was not as to whether aircraft was important, but as to how important it was. No definite answer as regards the ultimate efficacy of the air power could be provided. It was held by some that "as the aircraft could not be flown without a propeller, nor a propeller fly without its aircraft, so was air power related to the war effort." 14

It is a well known fact that the effective development of air weapons could be carried through only by industrially developed countries who could harness technological innovations, economic resources and scientific progress. This was to lead to major power wars. Bruce M. Russet would

have us believe that there are two distinct and incompatible views of the way in which the distribution and redistribution of capabilities effect any incidence of major power war which can be discerned. According to him:

One predicts that there will be less war when there is approximate parity (and change towards it) among the nations and a relatively fluid power hierarchy. The other predicts that there will be less war when there is preponderance (or change towards it) of power concentrated in the hands of a very few nations, and relatively stable rank order among the major powers.¹⁵

It has been rightly observed that "wars appear to be inevitable in the state systems as we know it".¹⁶ They have to be lived through in case mankind is unable to establish a tranquil peace.

Evolution of Strategic Air Thinking

In the initial stages the same fleet of aircraft was used for bombing as well as for routine army cooperation work. But most of the General Headquarters were reluctant to


lose valuable aircraft in almost ineffective bombing sorties. In a review carried out in 1915, the Royal Flying Corps Headquarters found that out of 141 attacks on railway objectives, only three were, indeed, successful. General H.M. Trenchard (later Marshal of the Royal Air Force Viscount Trenchard), after studying this Review, laid down that -

present spasmodic efforts against unsuitable or unimportant objects will be discontinued. Aeroplanes will not be used by Armies in attempts to influence local situations by bombing railway stations and junctions. Sustained attacks with a view to interrupt the enemy's railway communications will be ordered by General Headquarters in conjunction with the main operations of the Allied Armies. Special squadrons are being trained for this purpose.17

This postulate appears to be the first allusion to the principle of concentration as applicable to bombing and also the first reference to sustained attacks and specialized bomber squadrons. It was, indeed, the first serious attempt to centralize the control of bombers in order to prevent their misuse by subordinate formations. In 1915 itself, the Royal Flying Corps Headquarters issued another paper on bombing policy laying down the mode of attack by swarms of

aeroplanes. According to this, the leader of the swarm was to be equipped with a simple bomb-sight; when others in the formation were to see the leader drop the bombs, they also were to drop theirs. This, in practice, however, resulted in bombs falling in a very wide pattern suitable only for large targets. Subsequently, many developments and modifications were carried out to make the bombings more effective and capable of selective damage. In this regard, the most important development was the setting up of a long range bomber force by the British, which was termed as the Independent Air Force. "Its aim was the strategic air bombardment of enemy vital centres."18

During the course of the First World War the 'Independent Air Force' was situated in the rear of the French armies to emphasize its independence from the control of General Headquarters and the British Expeditionary Force. The targets allocated to it were German centres of production and communications. It was placed under the command of General Hugh Trenchard. By the end of the War, this Force possessed eleven squadrons mainly equipped with variants of DH4 and DH9, whose radius of action was about

18. Ibid., p.20.
100 miles and bomb carrying capacity of about 500 lbs. Some of the raids carried out by this Force, on targets in Ruhr and Rhineland in Germany, were successful but could not really produce decisive results. These bombing attacks, at best, irritated the German Government and had a marginal impact on the morale of their forces. When the War ended in November 1918, the plans to bombard the important towns in Germany, including Berlin, with long-range four-engined Handley-Page bombers based in England with as much bombload as 1650 lbs. had not materialized. To many observers, "the First World War ended without providing any conclusive proof of the offensive power of aircraft. The air battles in this war were concerned mainly with achieving air superiority through the destruction of the enemy's air forces." 19

It was evident during the operations that the bombers could penetrate the enemy defenses as much as to the limit of their radius of action. Bruce M. Russet rightly observes that "World War-I was conceived, planned and conducted essentially within the framework of so-called conventional strategy. There was a reliance on force of arms which is

characteristic of conventional forces". The war's strategy centred on belligerents' putting the greatest and most effective forces, properly supported into most vital battlefields, and deploying the most effective naval forces to support and protect shipping. This was at the most a strategy of land battles and sea-battles only. One of the most important deductions from the operations of the First World War was the realization that it was practically futile to strike at the product and not the structure of an enemy's war-making system. However great the material damage and loss of fighting elements in the battlefields might have been, as long as the enemy could repair that damage and substitute those fighting elements from his internal resources, he could continue to wage war. This realization was to lead to the formulation of the theory of strategic bombing.

The hallmark of strategic thinking, was no longer bringing an enemy to battle. The new strategic thinking emphasized the terrorization of civil population through air

attacks in order to compel surrender.\textsuperscript{22} The prime aim now was to assail an enemy's industry, communications and morale in order to force acceptance of the desired terms even though his armed forces might not have suffered defeat on the traditional battlefield. "The defeat in workshop and homestead was to take place of defeat in the field as the first aim of strategy."\textsuperscript{23} This, indeed, had been initially the aim of naval blockades but no navy had ever been able to succeed in making the blockade more than an ancillary element in war-waging.

According to R.J. Overy, "the aircraft threatened to dwarf the contribution of other services or even to supplant it altogether."\textsuperscript{24} The notion of combined arms, accepted everywhere in principle, came in for a state of doctrinal flux. The new weapon the aircraft was proving difficult to get integrated into a predominantly infantry-oriented operational conception. In fact, it engendered pressures for

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23. Ibid.

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airforce's establishment as a separate wing within the armed forces. This brought about the Royal Air Force in 1917, the French Armée de L'Air in 1933, and the Luftwaffe in 1935, into being, on equal footing with their respective armies and navies. However, the armies continued to see infantry as the main medium of war and aircraft simply as support weapons at par with or just replicas of artillery whereas "the air forces regarded themselves as much more than mere ancillaries to the ground forces, and this armour's proponents argued that it was the rightful main weapon and infantry the support".25

By the end of hostilities of the First World War, it had become amply clear that aircraft had added a new dimension to Sea warfare. At the battle of Jutland, the first converted aircraft carriers had been used for reconnaissance only. The leaders in the field for purpose-built carriers were Britain, Japan and the United States. A controversy, however, kept raging as to the best use of aircraft for bombing of other ships or the bombing of land targets from the sea or for the aerial defence of the

25. Millet and Murray, n.13, p.299.
surface fleet or for reconnaissance only. In the inter-war period, the British navy made use of aircraft for reconnaissance. Naval authorities remained skeptical of the ability of aircraft to sink large ships, so, little effort was made in the direction of producing the aircraft capable of doing so. Even when the navies realized the importance of air power during 1930s most of the naval air arms still remained deprived of urgent resources. But the Japanese naval leaders followed all aspects of a combined naval-air strategy. This was partly because of the rivalry with the Japanese army over air force development.26 However, the aircraft carrier tended to lie at the centre of the Japanese Pacific strategy.

Armies had initially welcomed the air-weapon as they had a horse or a tank. They had found it to be quite useful for seeing the other side of the hill and also for launching shells from the so called flying platform. But the military men in cockpits or the pilots very early showed some restiveness at being commanded and administered "in almost all the embryo air forces of the world, the pilots were

regarded with some apprehension by the older regular Army
and Navy officers.\textsuperscript{27}

The role that Air Forces were expected to perform by
the armies was merely of cooperation with them. But even on
the point of cooperation there existed certain fundamental
differences at a tactical and command level between air
forces and the armies. On the whole, however, there was no
doubt about the necessity of air support for the ground
forces. Such support was required both in offensive as well
as defensive role. In these support roles the Air Forces
were expected to attack enemy ground formations and to
harass the movement of their troops and supplies to the
front. The Air Forces were required to undertake tactical
bombing attacks of enemy's rear depots and bases, and to
speed up the progress of own army's attack, or to strengthen
the resistance of a defending one.\textsuperscript{28} The defensive role was
said to be dependent upon the offensive tactics. In the
protection of ground troops and friendly rear areas from
enemy air attack, Air Forces could play a uniquely important
role.

\textsuperscript{27} Saundby, n.3, p.9.
\textsuperscript{28} Overy, n.14, p.9.
The postulates of Douhet's *The Command of the Air* (1929) had gravely offended the sensibilities of civilians as well as soldiers and sailors. There was to be no distinction between soldiers and civilians while targeting enemy lands. The war was propagated as "a conflict of whole peoples, employing the entire human and material resources of society, a struggle in which the distinction between combatants and non-combatants vanished." Douhet had observed that "half the damage and casualties inflicted during the First World War would have sufficed to achieve victory for either side if they could have been accomplished in three months instead of four years. A quarter of it would have been sufficient if it had been inflicted in eight days." In such propagations there could really be no place for morality in warfare. This kind of propagation gave birth to the concept of strategic bombing.


30. Saundby, n.3, p.35.
Concept of Strategic Bombing

In its essential the concept of Strategic Bombardment was best stated in Douhet's writings. This concept envisioned a defensive role for surface forces, an aerial offensive designed to secure command of the air, and the aerial destruction of an enemy's capability to support surface forces and its will to continue the war. Douhet believed that command of the air would be established by attacks against enemy's aviation facilities and not through aerial fighting. He, therefore, advocated development of a battleplane capable of both defending itself in the air and of destroying hostile ground objectives.31

According to General Carl A. Spaatz, strategic bombing may be defined as being an independent air campaign, intended to be decisive, and directed against the essential war making capacity of the enemy. Its immeasurable advantage over two dimensional technique is that its units (heavy bombers and fighter escorts) are not committed to position in battle; on the contrary, they carry out their assigned

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missions, and then return to base to prepare for fresh assault.32

The conceptual roots of strategic bombing can be traced back to imaginative fancies and H.G. Well's *War in the Air* (1908) can be described as the most evocative work on Air Power which spurred strategic thinking. Wells had imagined air war to be inextricably involving civilians in their homes and all the apparatus of their social life. In *The World Set Free* (1914), Wells predicted the decisive military role of Air Power. In his writings Wells elaborated upon the potentialities of the contemporarily developing air weapons.

Similarly, amongst the statesmen, soldiers and political figures of those times, there were many who dwelled at length on Air Power and also helped in the development of the concept of strategic bombing. Amongst such personages, the top-notch are Winston S. Churchill, Stanley Baldwin,33 Herman Goering and Franklin D. Roosevelt. Many of the civilians and scientists also expressed their


33. It was Stanley Baldwin who had mentioned "The Bomber Will Always Get Through", quoted in Emme, n.4, p.50.
views and expertise on the subject. Amongst these worth-
mentioning are Marvin W. McFarland who was head of
Aeronautics Section of Science and Technology Division;
Alexander Graham Bell, the distinguished American scientist
who devoted his energies towards the improvement of
stability in aircraft and other aeronautical matters, during
the First World War.

The Smuts Memorandum of 17 August 1917, the paper that
led directly to the creation of Royal Air Force, had also
discussed air warfare in these terms:

The day may not be far off when aerial operations with
their devastation of enemy lands and destruction of
industrial and populous centres on a vast scale may
become the principal operations of war, to which the
older forms of military and naval operations may become
secondary and subordinate. 34

General Smuts was, however, not the first one to suggest an
independent and separate air service. 35

In the years that followed the end of the First World
War, though the pace of technological development slowed
down yet the theoretical speculation continued unabated. In

34. Noble Frankland, The Bomber Operations Against Germany
(London: Faber and Faber, 1965), pp.21-56.

Great Britain, Royal Air Force was fighting for its institutional life. The separate service enthusiasts now experimented with the idea of air control operations in which aircraft were used for police functions of the Empire and thus the value of strategic air bombardment was largely lost.\footnote{Saundby, n.3, pp.46-48.} The development of military aviation in France and in the United States was also retarded by its subordination to the two older services.\footnote{Ibid.} Brigadier-General W. Mitchell passionately crusaded for an independent air force and its parity with army and navy.\footnote{Alfred F. Hurley, \textit{Billy Mitchell: Crusader for Air Power} (New York: Franklin Watts, 1964), p.17.} Mitchell observed in \textit{Sky Ways}:

> The advent of Air Power which can go straight to the vital centres (of an enemy) and entirely neutralize or destroy them has put a completely new complexion on the old system of war. It is now realized that the hostile army in the field is a false objective and the real objectives are the vital centres. The old theory that victory meant the destruction of the hostile main army, is untenable.\footnote{Brigadier General W. Mitchell, quoted in Saundby n.3, p.50.}

In the initial stages the terms strategic and independent were freely substituted for each other in order
to express bombing operations conducted independently of surface forces, whether on land or sea. Strategic Bombing was taken to mean as that bombing which was directed against the strategic resources of an enemy's war capability by long range bomber capable of waging a strategic air offensive. 40

Mitchell was, indeed, one of the great prophets of air power, who put forward the idea of strategic air bombardment conducted independently of land and sea operations in his first book on air power, Our Air Force: The Keystone of National Defence, as early as 1921. In Winged Defence, published in 1925, he stressed that air power had brought with it a new doctrine of war, and that the basis of air power was the bomber aircraft. In his last book, Sky Ways, written in 1930, Mitchell strongly attacked the classical doctrine that the object in war must always be the defeat or destruction of the armed forces of the enemy. 41

In February 1920, the US War Department had authorised the establishment of eleven special service schools for the

41. Saundby, n.3, p.50.
The Air Service Tactical School at Langley Field in Virginia was destined to play an important role in moulding the theories for the employment of air forces in war. The curriculum in the school covered all aspects of aerial tactics and strategy. Coupled with the technical advancement and the design of aircraft between 1926 and 1932, the concept of strategic bombing offensive emerged as the dominant theme. At the basis of the theory of strategic bombing lay the assumption that within any national economic system there were certain connective links which when destroyed would throw the entire system out of gear, or at least large parts thereof into utter jeopardy.

Giulio Douhet appears to have exercised influence upon the policy framers of the Air Corps Tactical School along with that of William Mitchell. American air leaders certainly acknowledged Douhet's influence in the early conception of the strategic air offensive and called his fundamental doctrine the foundation stone on which the great European Air Forces were built, and "its ideas accepted as

the fundamental axioms today". Amongst all the writers the one whose influence was foremost in the development of the concept of strategic bombing in the United States, was Mitchell. His articles, books, speeches and his court martial harangues drew the attention of the American people and military-men towards the importance of aerial warfare. Foreseeing the Japanese attack on Pearl Harbour, years before it occurred, he analysed the strategic problem, a Japanese-American conflict could pose. One of his solutions, the fire-bombing of the Japanese cities, became the core of the US air strategy in the last six months of the Second World War. 44

Major MS Fairchild who was one of the instructors at the Air Corps Tactical School, in his lecture entitled "Air Force: National Economic Structure" on 1 June 1940, declared that -

we cannot and do not intend to actually kill or injure all the people. Therefore our intention in deciding upon this method of attack (against the national economic structure) must be so as to reduce the morale of the enemy civilian population through fear of death or injury for themselves and their loved ones - so that


they would prefer our terms of peace to continue the struggle, and would force their governments to capitulate. 45

Major Fairchild was certainly not in favour of mere propaganda or the dropping of paper-leaflets. He, like many other instructors at the School, was in favour of inflicting "intense suffering" 46 upon the civilian populace.

President Roosevelt had protested vehemently against the Japanese air raids on Chungking and the Soviet bombing raids in 1939 over Helsinki and other cities during Soviet-Finnish War. He had stated that the American people wholeheartedly condemned the unprovoked bombing and machine-gunning of civilian population from the air. 47 But when the Second World War began the American military planners came up with plans to strategically bombard specific target systems which were vital to the enemy's continued war effort. They argued that destroying the civilian economy would depress civilian morale. Demoralized workers and

45. Ibid.
46. Ibid.
wrecked factories would be unable to produce the tools of war. Denied materials, they needed to fight, the armed forces would collapse, further undermining national will to resist.48 Enemy populace would be demoralized, they argued by the continued deprivations and suffering and would ultimately lose faith in the ultimate triumph of their armed forces. Sustained bombing of the enemy cities could entirely destroy their morale forcing them to beseech their government to surrender.

The connections between President Franklin D. Roosevelt and the US air forces actions were generally indirect, vague and very important. His general outlook, which the leaders of the military arms noted and absorbed, suggested boundaries for permissible behaviour by the American military services.49 Roosevelt had a passion for secrecy. He avoided precise commitments that might limit his freedom of action. He knew that without public and congressional support it would be difficult if not impossible to achieve his larger goals. Such an approach placed a limitation, if

not on the means the armed forces employed, then on what the public could be allowed to understand about the methods used. 50

Roosevelt was Assistant Secretary of Navy in the Wilson Administration and had exhibited a military approach to most of the problems. He is reported to have "ridiculed Navy Secretary, Josephus Daniels, when the outbreak of World War-I shocked Daniels' faith in human nature and civilization and similar idealistic nonsense." 51 And, thus, when it was his turn to lead his country into war, he presented the struggle against the Axis powers as a conflict between darkness and light, which required enemy's absolute capitulation, and indirectly gave a green signal to the military men to use the sternest possible methods in ground or air attacks.

Henry L. Stimson, the Secretary of War, had an affinity with the military way of life. War was part of his heritage. He had begun military service with the National Guard, enjoying the strike duty to which his unit was called. In World War-I, he had served at the front as an artillery

50. Ibid., p.439.
51. Schaffer, n.29, pp.4-5.
officer. Stimson took pleasure in the military way of life, its ceremonies, orderliness and professional directness. "At one time he considered himself more a soldier than a lawyer". 52 Similarly Assistant Secretary of War Robert Lovett also had a military background. He had flown navy combat planes in World War-I.

The Chief of the Army Staff, General George C. Marshall, was the pre-eminently uniformed official of his country during the Second World War. When USA formed the Joint Chiefs of Staff in 1942 to coordinate the actions of military services he dominated it. In the Anglo-American Combined Chiefs of Staff he became one of the principal exponents amongst western strategists of War along with Roosevelt and Churchill; "of a war fought on many fronts with traditional land and sea forces and with the newly emerging weapons of air power." 53

The men chiefly responsible for the development of the concept of strategic bombing and directing it in the World War-II were Frederick L. Anderson, Henry H. Arnold, Lewis H.

52. Ibid., p.6.


Most of these men were vigorous and relatively young during the Second World War. Arnold was the oldest at fifty-five and Norstad was the youngest at thirty-four. They were daredevils and dynamic officers. Most of them took on to stunt flying and demonstrated that they had complete control over the flying machines with scant care for personal safety. Amongst these, James Doolittle is best remembered for the air raid of 18 April 1942, which he personally led against mainland targets in Japan, taking off in B-25 medium bomber from the decks of USS Hornet. Doolittle was a highly trained engineer who had taken "aeronautical engineering courses at McCook Field, Ohio, and received Master of

54. Schaffer, n.29, p.220.
Science and Doctor of Science degrees in aeronautics from Massachusetts Institute of Technology.\textsuperscript{55}

Haywood S. Hansell was a technological expert and a strategic planner. He greatly contributed to the American Air Force's strategic planning. It was he who had sent very long range bombers from Marianas against the Japanese home islands. He contributed a lot to the AAF's strategic planning and was one of the chief designers of the American Air War against both Germany and Japan.\textsuperscript{56}

General Ira C. Eaker had started his career as an infantry officer, later switching to Signal Corps Air Service. He played a significant role in keeping the "idea of air power alive in the inter-war years by persuading newspaper columnists, magazine writers, and radio reporters to promote the views of airmen."\textsuperscript{57} He became the Commander General of the US Army Air Forces in the United Kingdom. At the end of the war in Europe he returned to the United States as deputy commander, Army Air Forces, and Chief of the Air Staff.

\textsuperscript{55} Ibid., p.9.
\textsuperscript{56} Ibid., p.10.
\textsuperscript{57} Ibid., p.12.
General Carl A. Spaatz had started his career as an infantry officer and later joined Signal Corps. Spaatz was the deputy chief of the Mediterranean Allied Air Forces, and from January 1944 until after Germany surrendered, he directed the US strategic air forces in Europe. Later, he moved to the Pacific to direct the "final strategic bombing missions against Japan, including the atomic attacks on Hiroshima and Nagasaki." 58

General Hap Arnold headed the Army Air Forces in the Second World War. "He was a member of the United States Joint Chief of Staff and of the combined chiefs of staff. He played a central role in directing air operation around the world." 59 In his memoirs he wrote of his family's early wish that he become a minister, then reflected that he really had become a preacher selling the idea of air power with such evangelism as it would have taken him to sell the "Wages of Sin." 60

58. Ibid., p. 13.
60. Arnold, n. 42, p. 104.
The Air Corps Tactical School played a very significant role in the theorization and development of the concept of strategic bombing. According to Haywood S. Hansell:

the greatest US contribution to the strategic concept of air warfare and its practical application was made by Col. Harold L. George. The idea was first developed by George and his associates at the Air Corps Tactical School. Under his guidance as Chief of the Air War Plan Division, the concept was translated into sound strategic plans for employment of US air power. This was done in the face of strong opposition from proponents of surface warfare. The concept envisioned undermining of the enemy's will and his capacity to wage war, by bombing selected industrial, economic and military system. 61

Indeed, the Air Power was to have a profound impact upon the grand strategy of war and it was hoped that air power may be able to shorten war by inflicting concentrated attacks. Thus conceived, nurtured and assimilated, the concept of strategic bombing was to perpetrate atrocities on an unprecedented scale. But it could still not rid the world of warfare, may be, it had not reached the proportion as visualized by Alfred Nobel in 1892, when he stated that "the day when two army corps can annihilate one another in one

second, all civilized nations, it is hoped, will recoil from war and discharge their troops". 62

The aura of mystery and power had surrounded the aeroplanes right from the beginning. The Rise of Air Power and the Conceptualization of Strategic Bombing is, indeed, the story of men, machines and machinations.