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AIR HISTORICAL BRANCH

TRANSLATION NO. VII/11

The Douhet Theory and its  
application to the present War.

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A study prepared by the German Air  
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TRANSLATED BY: -  
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FOREWORD

Booklet 7 of the "Preliminary Studies in the History of Air Warfare" aims at giving a survey of Douhet's theories. The work contains the basic principles of his theory of air warfare and brings these into relationship with the actual events of the present war.

The treatise is based on the writings of Douhet, the comprehensive survey made by the Frenchman Vauthier, and on a number of studies dealing with the nature of air warfare up to the present day prepared by the 8th Abteilung.

(signed) von Rohden

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Modern warfare and its operations are decisively influenced by technical development. With the constant innovations in and perfection of methods of warfare, both the nature and effects of battle-actions take on a more complex and far reaching form.

In the ceaseless struggle forwards, research taps new material and mental sources, in order to open new roads of victory to the Command. Battle successes themselves grow with technical progress, because they are conditioned to a great extent by the technical qualities of weapons and instruments.

The introduction of machine-guns and the use of tanks and U-boats exercised an influence during the First World War and defined to a considerable extent the nature of the war, but the use of aircraft in battles over land and sea instituted a change of fundamental importance. Whereas the operations of the belligerents had previously been confined to the land and sea, now the whole of the sky had also become a combat area.

Air warfare, by its very nature, brought to the front new forces which obeyed their own laws and was constantly striving to break away from the restrictions of land and sea warfare. The early development of the Luftwaffe, which started between 1914 and 1918, took place within the framework of the Army and the Navy.

The use of air forces merely as a subsidiary force to the other two branches of the Service remained in existence for a long time. In actual fact even the members of the Flying Corps who were operationally independent had only a small sphere of activity, and it was not until towards the end of the war that their importance began to increase. The continuous technical improvement in aircraft, and the progress made in the sphere of navigation and armament increased the operational possibilities of the Luftwaffe and caused it to develop more and more on independent lines. In England a decisive conclusion had already been drawn from these facts and in July, 1918, the Air forces of the Army and Navy were combined as the ROYAL AIR FORCE and raised to the position of the third Service. All other countries were behind England in this respect and they entered upon the new road only very slowly.

The position and importance of the Luftwaffe within the combined forces was one of the most disputed problems of military science at the end of the First World War. As Germany was not allowed to possess a Flying Corps after the Treaty of Versailles, this argument was carried on mostly in England, France and Italy. The representatives of the old school insisted that air forces were to be used only in support of land and sea forces, i.e. as an auxiliary weapon. They would not admit the premise of independent air warfare, necessitating a third branch of the Services, on an equal footing with the Army and Navy.

On the other hand, the supporters of the new school stressed, first and foremost, the operational methods of the Luftwaffe, which altered fundamentally the nature of warfare operations in three-dimensional space made possible by technical development. They tried to prove that flying units could carry out independent operations and thereby have considerable influence on the course of a battle, apart from co-operation with the Army and Navy. They, therefore, refused the role of an auxiliary arm, which had fallen to the lot of the air forces during the war. Their goal was to break the old bonds, to obtain their own High Command and operate independently.

The battle of opinions, which swayed backwards and forwards after the war, was given an entirely new aspect by the writings of the Italian General Douhet.

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Douhet was born in 1869 in Caserta. He attended the Military Academy and became an artillery officer. Later he qualified for the General Staff and the technical Service and was made Commander of the Airship Battalion. In May, 1915, when Italy entered the war, Douhet was Chief of the General Staff with the Milan Division. In this capacity he expressed, in a report which was sent to the highest authorities, a very sharp criticism of the Italian methods of conducting the war. For this, he was court martialled and sentenced, in 1916, to one year's imprisonment; but the truth of his statements was soon proved and with it the lack of self-interest behind his actions. The sentence was quashed and Douhet was reinstated. When in 1918, he was promoted to Commander of the Flying Corps his military course had reached its peak. In 1921, shortly after his retirement, he was promoted to General, and from that time, he devoted himself exclusively to his work on the science of warfare.

As a man, Douhet had a frank and passionate character. If ever he considered a thing to be correct he had to say so freely and back it up to the best of his ability. He pursued his aims vigorously, without regard to any disadvantages which he might bring upon himself.

He combined clear reasoning power with a sense of vision for essentials and the scientific basis of his work. Intellectually he was very active and developed his thoughts with convincing eloquence; he also proved to be a talented writer.

Douhet's steadfast personality was reflected in his method of work. He stated his findings in an objective and logical manner, and avoided definite solutions and prophesies. Even if he tended to underestimate the value of military experiences in the course of history he did take as the basis for his studies the most important general lessons from the First World War. He always regarded things from the point of view that the future is nearer to the present than the past.

Douhet attached particular importance to the new technical instruments of war. He tested their possibilities and effects in order to draw conclusions for future wars. Nevertheless, he never lost sight of the restrictions imposed by the reduction in expenditure on armaments.

The military treatises of Douhet were printed in a series of pamphlets and essays, which appeared mainly between 1920 - 30. The titles of his most important writings, from which one can form a general picture of his ideas, are as follows:

- "Supremacy in the Air" (editions 1921, 27)
- "The form of future great wars" (1928)
- "The problem of total war" (1928)
- "How to obtain Air Supremacy" (1928)
- "The Air Army" (1928)
- "Defensive on the ground - Offensive in the Air" (1929)

The German version of Douhet's main work is called "Luftherrschaft" (Air Supremacy) and also contains his forecast of the "War 19..".

A composite work, which was to have contained his own theories, and the objections raised to them, was never published. Whilst still engaged on this work, the General died, in 1930.

The Douhet theory was developed with logical consistency and unity into a school of thought, which was soon to be the central point of all observations on military science.

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The basic theme which runs through all the works of this Italian writer, underlies the revolutionary importance of the Luftwaffe for the course of all future wars. In this respect, Douhet saw a deep cleft between the battles of the past and those of the future, a cleft which had been caused by the progress of technical development. The wars of the past centuries were for him only conflicts between the armies and navies of individual states. Peoples and dynasties were only concerned indirectly with them. The First World War was the first to exceed these limits. Douhet saw in the World War a battle of nations which demanded all the strength of the opposing peoples. Victory in this struggle went inevitably to the party which could destroy the material and moral reserves of the opponent before it was exhausted itself. As a result of the advent of automatic weapons, the battle took the shape of a war of positions, in which the decision was reached by attrition of the enemy. Meanwhile, the war at sea was dominated by the overwhelming strength of the Allied fleet.

In Douhet's opinion both the Army and Navy entered the war in a state of unpreparedness, because they did not assess correctly the value of the technical methods of warfare - (automatic weapons and U-boats). They had thus failed to exploit fully the new forces available.

The General warned against the assumption that the next war would take the same form as the last one. In spite of the broad canvas on which the 1914/18 war had run its course, for Douhet it belonged to an era that was dead and gone.

The basic character of wars, as it had been previously manifested, underwent a decisive change, according to the theories of Douhet. There was now added a factor which up to now had been disregarded, which was for future judgement quite new, and which was to have an equal influence on both sea and land warfare. With the advent of the air arm, the whole territory of nations came within the scope of the attacking weapons of the enemy and could become a theatre of war. Differences between the front and home, which in the First World War were still distinguishable, should no longer exist. On this basis Douhet designed a completely new picture of future warfare.

He believed, that in the approaching struggle as had already happened in the First World War all the forces of the belligerent peoples would have to be harnessed in the interests of the war effort. Victory would fall to that side, which was first able to destroy the resistance of the enemy, both materially and morally. For land and sea warfare he predicted no particular changes, because the factors, which formed their fundamental rules, were the same as those of the past.

Douhet considered it, however, impossible to view the operations of the Army and the Navy separately, because with the advent of the Air Force, warfare had assumed a new character. In his opinion the attrition of the enemy nation necessary for victory could result only indirectly through the forces of the Army and the Navy. The main burden of the battle in the future war, would be borne by the Air Force, by means of attacks on the enemy's sources of power.

In the interests of an effective execution of these decisive tasks, the General considered the skies to be unsuited to a defensive mode of warfare. For him, air offensive was the most simple form of warfare and air defence the most difficult. Logically, therefore, he postulated that the flying forces should be engaged on offensive operations. As in the First World War the fronts had become static, he considered defence to be the easiest mode of battle for the Army and the Navy. He gave them, therefore, only defensive commissions and wished to dispense with land and sea offensives, on account of the tremendous supplies necessary.

The methods of attack by which the enemy's powers of resistance

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were to be eliminated, were H.E. incendiary and gas bombs. The General had perhaps too high hopes of their effect. He was of the opinion that the war would only last one month, if the most important of the large towns, and the centres of industry and commerce could be attacked with 300 tons of bombs. Even in cases where the morale of the civil population might be high, he considered that the obliteration of these towns would mean a complete breakdown of the basic social system of a nation.

In this connection, Douhet discussed the question of whether the dangers of air warfare could not be eliminated by an international treaty. He denied this, and was firmly convinced that sooner or later one or other of the two belligerent parties would resort to air attacks. So that the enemy should not obtain the advantage from the very beginning, he demanded a clear inquiry into the inevitability of this form of attack.

In preparing his evidence, the General started at "the conception of maximum effort", as he often expressed it in the basic concepts of his theory. He examined the question of how the total supplies at his disposal should be shared out amongst the Army, the Navy and the Air Force in order to obtain the greatest possible effect. For this purpose, he ascertained the relative value of single branches of the forces within the whole framework of the forces. He investigated the question of how these branches could, in their respective spheres, attain the greatest possible effort for the collective forces. The General based his opinion on the conclusions which he himself had drawn from the events of the First World War, viz:- defensive on land and sea, offensive in the air. Thereby Douhet believed that he was doing justice to the limits of capability of each branch of the forces. The Army could only operate on land, the Navy was confined to sea-operations. The Air Force, however, opened up the possibilities of operating in combination with the Army and the Fleet and, in addition, of executing independent missions. They would thus be able to use their resources with the greatest effect. From this statement the general drew the conclusion that when the greatest effective use is made of the Air Force, then the total effort of the armed forces reaches its greatest heights.

In order to ensure a corresponding rational distribution of supplies, Douhet suggested the creation of a unified Ministry of Defence and High Command. Thus on the organizing side he wished to serve the common goal of all branches of the forces, to eliminate all splitting of strength and guarantee a balanced and harmonious liaison.

Within this framework, the General laid down four zones of operation. The Commands of the Army, the Navy, the independent Air Force, and the ground air defences, should come under the High Command. All of these had the same aims which Douhet set the armed forces as a whole. They were contained in these two main duties.

- 1) Defence of the homeland.
- 2) Attack on the enemy's defensive positions, in order to penetrate into the enemy country.

In order not to clash directly with the views held by the Army and Navy, these aims had first of all to be clarified as far as the Air Force was concerned. The idea of a concentrated air attack was decisive in defining the individual duties of the various branches of the armed forces.

As Douhet considered the sky to be the decisive combat area, he demanded for it the strongest deployment of power and offensive operations. He wanted to combine the whole of the available air strength into one force with a definite offensive character. He rejected the idea of an "auxiliary force" for the Army and the Navy, with flying formations to strengthen the air defences of the homeland. For active air defence he considered that the only solution was Flak, which could be concentrated on the most important objects. On the other hand, he considered it necessary to develop passive air defence to the utmost.

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Douhet used Italy as an example to explain these views. In the event of war the Army would have to throw back any attacks of the enemy on the frontiers and defend Italian territory from an invasion of enemy armies. Immediate air support would not be granted for this purpose.

The Navy would have to repel attacks from the sea on Italian territory and ports. Moreover, the safety of Italian sea traffic in the Mediterranean would have to be ensured, also without air support.

In the same way, the territorial air defence had to work without flying units. It could only rely on the active ground defences which were placed in position for the defence of the most important objects in Italy. Moreover, the whole of Italy should be covered by a comprehensive system of passive air defence. For defensive measures in the sphere of the Army, the Navy and the air protection of the homeland, Douhet granted only the necessary minimum of forces, for he considered that the object of defensive operations was merely to provide the Air Force with sufficient time to win a decisive victory. Thus Douhet wanted to make the Luftwaffe as strong as possible at the cost of the other branches of the Forces, which would be used only in defensive operations. He expected the Air Force to achieve a decisive victory in a very short time.

The theory which he had formed from his studies of maximum effort, that the air was the decisive battle area, had to be proved. In connection with this two questions arose.

- 1) Is supremacy in the air really of such great importance, and
- 2) Can this supremacy be attained?

In his answer the General expanded upon the advantages, which, in the event of war, went with the possession of air supremacy. He saw in air supremacy the possibility of attacking without hindrance the whole land and sea area of the enemy and of crippling the resources of the enemy nations. From these direct attacks on the enemy home front he expected quite considerable moral and material results. Especially advantageous was the fact that the air forces of the enemy could be wiped out and at the same time one's own sphere of activity could be offered the necessary protection. The overwhelming importance of the Air Force lay in the wide scope of its operational activities.

In order to win air supremacy the General considered that the first essential was the elimination of enemy air force operations. This could be prepared by attacks on the opposing ground organisation and in the destruction of enemy flying units in the air. As one's own air power increased, so the successful conclusion of the battle for air supremacy would be assured.

In any case, Douhet was strongly opposed to using any division of his flying forces for defensive duties. For him it amounted to a direct contravention of the essential nature of the Air Force and a weakening of its effect, when some sections remained in the homeland as a defence against enemy attacks.

On these basic ideas of his theory, the General formed his regulations for the operation and organisation of the Air Force. The choice of targets he made dependent upon a series of considerations of military, political, social and psychological significance. He was determined to avoid every fixed scheme and demanded here, above all, flexibility in forming judgments and in making decisions.

Douhet was of the opinion that the air war would never assume the form in which only the two opposing air forces were actively in combat. On both sides air attacks against enemy territory would start in order to strike at the centre of his resistance. The first targets would be static objects,

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the ground organisation of the enemy Air Force and its aircraft industry. In executing such attacks, the stronger side need not avoid air combat; but the weaker side would have to do so. The strategic offensive always seems to be the more effective method, even if one's own Air Force should be numerically inferior to that of the enemy.

To attempt to achieve air supremacy by means of air battles alone would, in Douhet's opinion, take too long. He demanded from the flying units two things: sufficient strength for air battles and also for attacks against ground objectives. In this sense, the attacks against the sources of power behind the enemy lines would have a double purpose; firstly, to inflict losses on the enemy and secondly to entice his air forces into battle. Against all the laws of the past concerning war strategy, he was prepared to renounce surprise attacks because he wished to force the enemy defensive forces to fight.

In order to be able to meet all possible difficulties effectively, the attacks would be flown in mass formation. Douhet pressed, therefore, for a decrease in the size of the Army and Navy in order to use all possible resources for a strengthening of the Air Force. Army and Navy air forces he considered to be pointless, superfluous and even dangerous, because they were withdrawn from the struggle for air supremacy and as a result would have no influence on the actual course of the battle. His ideas on aircraft types were based on the same thought process. He rejected the fighter aircraft, because its value was always changing due to improved speeds and manoeuvrability. He advocated the bomber type of aircraft as a basic type for his air force, in order to possess a comparatively stable fighting force in the air. In this respect he had in mind an "air cruiser" which would combine the qualities of a bomber with heavy armament and strong construction. He regarded it as an important advantage if the air battle could be carried out in this manner with a compact group of aircraft of similar types.

These theories were more than a development on previous ideas. They meant a radical change in the ideas of military science, which had been accepted up to that time. The new ideas broke away completely from the existing conceptions of the methods of warfare and showed how the "sky force" opened up new possibilities.

The ability of an air force to hit and cripple the heart of the enemy nation at the beginning of hostilities, led the General to a re-valuation of the other branches of the forces. This formed the basis of his new war treaties.

The effects on the operation and the training of troops were far-reaching. Moreover, because of this the Command was faced with entirely new problems. In order to justify this from the very beginning, Douhet wished to establish a War Academy for the whole of the forces, in addition to the General Staff Colleges for the separate branches of the forces. Here the General returned to his old ideas on the maximum effort of the forces. He retained a grasp of the situation as a whole even when emphasizing the importance of the Air Force.

In order to serve the general aim of the armed forces, the successful conclusion of the war, he wanted to make the Air Force a decisive weapon. Liaison in command and action, clever balancing of forces and mutual understanding for the work in a common cause, were the defining principles of his programme. It was basically a matter of indifference to him whether the war was won on land, on sea, or in the air, but, as he had recognized the sky as the determining battle area, he wished, in the general interest, to achieve victory in this sphere by the concerted use of all available forces.

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In judging this train of thought one must always realise that Douhet based his observations on the characteristics of his native country. He

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constantly used the geo-political and military position of Italy and the natural boundary of the Alps in the North in order to expound and prove his theories. It was by no means his intention to lay down binding and rigid rules for the conduct of war by all countries. Thus, these ideas which were formed with Italy as the country concerned, could not generally be applied, for it is quite obvious that every people, every state and every economy must be considered in the light of its racial, historical and geo-political characteristics. To this extent, the new ideas expressed on air warfare were limited in their implications.

Nevertheless, it was natural that, the exposition of such a revolutionary theory should call forth some criticism. Indeed, there followed a scientific argument, in the course of which innumerable objections to the new theory were raised. The opponents of the General declared air warfare to be illegal, they rejected the creation of a unified High Command and took exception to the decisive role to be played by the Air Force in modern warfare. The critics attacked the fundamentals of the Douhet theory when they declared the Air Force to be ineffective and the attainment of air supremacy impossible.

Members of the Army and the Navy would in no circumstances renounce their auxiliary Air Force units. They cited the experiences of the world war in order to prove the necessity for immediate air support, under the command of the Army or Navy. Then again there were those who advanced their own ideas on the Air Force, and who were of the opinion that the outcome of the air war would be decided exclusively in air battles.

There was also much dissension concerning the employment of the Services and their possibilities of effective action. The opponents of the General believed his ideas could not be accepted as a basis for a new theory of warfare until they had been proved in actual practice. Others put the objection that the Air Force was a very expensive weapon and that the realisation of the Douhet theory would ruin the country. The critics cited various examples to prove that the decision would not necessarily be made in the air. The critics went so far as to say the Douhet wanted to do away with the Army and the Navy.

In general then, there was not one point of Douhet's war thesis, which was not subjected to severe criticism. The General himself was the most active element in the controversy which had arisen; for he answered every one of his opponents. Untiringly he took up his pen time and again in order to lend new force to his theory, and in order to fortify it against all contradictory judgments. Douhet would not give way a single inch in his demands. On the contrary, he repeated, in his numerous controversial publications, what he had tried to prove in his main works: the decisive importance of the strategic air offensive in the form of a massed break-through to the sources of enemy power.

#### IV.

How far Douhet was actually right was first shown by the developments which took place during the Second World War.

The quick successes which were won in all theatres of war by the German Wehrmacht between the years 1939-41 must be credited to a large extent to the supremacy of our Luftwaffe. The unquestioned air supremacy which our own air forces won inside a very short time, enabled a large-scale air-offensive to be mounted. This fact became a decisive factor in the frame-work of the war as a whole. Distinctive features of this modern method of warfare were the flexible use of the Luftwaffe in large areas, the determination to fight to the end and concentrated air attacks against the centres of enemy resistance.

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Just as Douhet had called for in his theory, large scale operations could now be carried out. To a limited degree, this occurred with the outbreak of hostilities. The Luftwaffe contributed greatly to the successful conclusion of the "Battle of Poland". Beyond the operational spheres of the Army and the Navy, the Luftwaffe, in accordance with the new theory of warfare, attacked targets deep in the enemy territory. With the possession of air supremacy, we succeeded in disorganising the movements of enemy troops, prevented the Polish retreat over the Weichsel, and paved the way for a pincer movement.

It is true that the flying units did not bear the brunt of the battle alone. The Army front did not remain static, as Douhet had presumed, but was always being pressed forward powerfully under the protection of the air umbrella. In order to achieve a rapid elimination of the enemy, the German Command could not limit its actions to a merely defensive land-battle, for it was precisely in the offensive co-operation of the land and air troops that the secret of their success was to be found.

Similarly, but in far more difficult conditions, the occupation of Denmark and Norway was completed in the early months of 1940. In this undertaking, too, the Luftwaffe showed itself to be a decisive factor in the success of the complete plan of campaign. Here again, however, a defensive policy on the part of the Army and the Navy would not have contributed to the success of the enterprise. The geographical conditions of the Northern European terrain in themselves contradicted, on this occasion, the ideas which Douhet had expounded using Italy as an example. As regards the actual operations of the Luftwaffe, too, new aspects arose which had not been considered in the theory. The General had overlooked the possibilities of an airborne operation and the question of supplying advanced positions by means of air transport. It was shown, therefore, that in detail, the course of the war followed only partially in the train of thought of the Douhet theory. Basically it was proved to the whole world, however, to what extent the hopes placed in air force operations corresponded to the actual possible effect of the third arm of the Forces. Far ahead of his time, Douhet had realized that dominant strength in the air made it possible to achieve tremendous successes.

Broadly speaking, the Douhet theory was substantiated during the course of the campaign in the West in May and June, 1940. In his forecasts of the future war he had allocated to the Luftwaffe as its first targets the ground organisation of the enemy air force and its aircraft industry. The German Command pursued the same policy. At the beginning of the battle mighty blows were struck against the enemy's jumping off bases in the Netherlands, Belgium and North East France, resulting in the destruction of the Dutch and Belgian air forces and forcing the British and French forces, which were badly hit, to use dispersal airfields. Their well-planned and combined operations, which in the meanwhile had met with many difficulties, were further reduced by the destruction of the Potez works and ten M.E. depôts.

The German air forces fighting in the West possessed sufficient aircraft for air battles and for attacks against ground objectives. Thus they succeeded in a very short time in gaining air supremacy, in destroying industrial factories and in giving strong support to the Army.

In accordance with Douhet's ideas, concentrated attacks were carried out, almost unhindered, against the enemy's industrial centres, involving large areas of French territory.

The unceasing attacks against the enemy Army, especially the demoralising effects of the Stuka squadrons, had a great influence on the rapid and successful course of further operations. The advance to the Channel was made possible only because both flanks of the spearhead were protected by air reconnaissance and by strong active air support. Thus, the expectations from the theory of air warfare had been largely fulfilled. The losses in men and material inflicted on the enemy by air action were so high that his resistance

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was crippled. Furthermore, the impression of German air superiority and the hopelessness of combating it, must be regarded as an important psychological motive in the weakening of the French will to resist. The enemy was, therefore, in the full sense of Douhet's ideas, materially and morally conquered by the Luftwaffe - although with the modification that, in this case also, the Army had its place in the strategic offensive.

Thus the sky had not become the sole decisive theatre of war. In spite of the importance of the air operations, the rapid victories in the West were in no small measure due to the fact that the ground forces did not remain on the defensive. The encircling operations by means of airborne attacks in Holland and Belgium opened up the possibility of over-coming strong enemy positions behind their lines and thus broadened the scope of land operations. Contrary to Douhet's theory, it was shown that land warfare was not conducted on the same lines as in 1918. In the planned co-operation of tanks and aircraft the holding of firm lines of defence was no longer possible and a new phase of mobile warfare was opened.

The air war against England between August 1940 and June 1941 was, however, based on a fundamental of the Douhet theory, viz:- defensive on land and sea - offensive in the air.

The original intention of invading the British Isles was given up. Thus for the first time Douhet's theory of air warfare existing alone was realized. In conformity with the strategy which had resulted in the destruction of the French Air Force, the immediate objective now was the elimination of the RAF. In August 1940, more than 1000 targets of the enemy Air Force and aircraft industry were attacked. The desired result, the attainment of air supremacy over Southern England could not however be achieved.

In these circumstances two factors arose which varied from the Douhet theory:-

- 1) The impossibility of gaining and retaining air supremacy without occupying the enemy country, having regard to the technical limitations in existence at that time.
- 2) The impossibility of forcing a decision through air warfare alone.

This was confirmed when, after the cessation of direct attacks against the enemy Air Force, the battle against the British industrial centres began. Certainly the operations which were flown without interruption for 10 months against England were of paramount importance for the future course of events. The economic damage to the various areas of supply proved to be large. The influence of the air war on aircraft production and thereby also on the effective attacking power of the RAF could not be denied. It was, indeed, not until two years later that the enemy's Air Force had recovered sufficiently to strike back. By this means the time fixed for the beginning of the massed attacks on Germany was postponed and our own flying units had won sufficient respite for the fight against Russia.

The decision which Douhet had hoped for as a result of warfare conducted along completely strategic lines had however not yet been won. Whether that would have been possible if operations against England had been continued, must remain open to question. In September and October, 1940, alone, for example, 49 large scale attacks and 283 nuisance raids were flown against London. In these raids 3,743 tons of H.E. and 14,409 incendiary containers (AB36) were dropped. Even though no gas bombs were used in the operation, nevertheless, according to Douhet, a much smaller number of bombs should have sufficed in order to convince the enemy nation of the uselessness of further resistance. In actual fact this expected collapse did not happen. It would have been wrong to measure the British power of

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resistance by Italian standards. The material damage had led to a weakening of England's potential war strength but this was not of decisive importance.

Even so, the successes which had been achieved proved that the strategic advantages of an island position could be considerably diminished by massed air attacks and that England too was now exposed to the immediate effects of the war.

The course of the air war since 1941 has been characterised by the fact that the Luftwaffe has not been used again in concentrated attacks against one opponent on one front. It has been forced by simultaneous operations in several theatres of war to direct its blows at the enemy in many directions. The inevitable result has been a decrease in its operational strength on the various sections of the front. Thus the deviation from the previous rules of operational air warfare in favour of immediate support for the Army and the Navy became an actual fact. The primary conditions for an operation according to the rules of Douhet now disappeared.

The situation in the East afforded a perfect example. As a result of its inferiority, the strategic Luftwaffe was forced to abandon its real tasks, despite a clear recognition of the disadvantages which would result.

Neither in Russia nor in the Mediterranean nor in the West could German air superiority be maintained, and the initiative went increasingly to the enemy. The pressure of events forced the Luftwaffe on to the defensive.

Thus the phase had occurred which Douhet had wanted to avoid. In the General's opinion, the strategic offensive was always the most effective form of operation. He considered it should be used even in circumstances where one's own Air Force is weaker than that of the enemy.

It is true that repeated attempts were made on the Eastern Front to achieve lasting effects through air operations. The great expanse of the enemy terrain made it exceptionally difficult, however, to attack the opponent's sources of power, as laid down in the Douhet theory. Attacks were, therefore, carried out mainly against communications and traffic centres behind the enemy front. As the Soviet production centres were mainly out of range of our aircraft this seemed to be the type of strategic air attack which would inflict the most damage on the enemy. Attacks on the important war armament factories in Gorki, Jaroslavl, Rybinsk, Moscow and Leningrad were carried out not and again, but were not sufficiently effective because they were executed with too few aircraft and at too great intervals. The aim which Douhet had in view for attacks of this nature could not be attained.

In actual fact all the flying formations had to be thrown into the battle in direct support of the army in difficult situations, such as arose at Stalingrad, Wolchow, Luban and in the Crimea. Their forces were thus dispersed and, tied as they were to the land operations, they could not be effective against the considerable reinforcements which were being kept mounted behind the enemy lines. They were in the true sense of Douhet's expression an "auxiliary air force" and were thus incapable of playing a decisive role. In the battle for air supremacy and that against the sources of enemy power the German Luftwaffe no longer had any part.

Forced on to the defensive from the point of view of both numbers and quality of aircraft, the Luftwaffe inevitably suffered defeats. Our own air operations became weak in comparison with those of the enemy. The enemy's stream of supplies flowed practically unhindered up to the front line and there made possible the beginning of his successes. Thus it was also clearly shown on the negative side how correct was Douhet's general picture of the overwhelming importance of the Luftwaffe in modern warfare.

The operations in the Mediterranean theatre of war since 1942 have proved this. Our own Naval forces there were on the defensive, and

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the main burden of the battle against the Allied attempts to reinforce their armies in North Africa was born by the Luftwaffe. Although the success gained by our forces in this campaign was considerable, the number of aircraft at our disposal at this time was insufficient to enable us to stop the Allies from reinforcing their front against Tunis. In this theatre also, air operations were gradually confined to support of the Army and the Navy. As a result of their numerical inferiority, therefore, they were forced to adopt a plan of campaign which was directly opposed to the principles laid down by Douhet.

The enemy had now wrested the initiative from us. He was now pursuing the opposite course to our own, i.e. he was passing from the air defensive to the air offensive. As a result of his far-sighted planning our opponent was able to adopt the ideas of Douhet at the same moment that we were forced to abandon them. The English and Americans, profiting by their experiences of the first war years, had built up a strong air force suitable for strategic warfare, as well as for support of the Army.

Apart from the events in the secondary theatre of war in the Mediterranean, the enemy Army and Navy were on the defensive. The Air Forces, however, had, since 1942, steadily increased the weight of their offensive from Western bases. Douhet's basic demand of defence on land and sea and attack in the air, once again became a definite proposition. By reason of its overwhelming superiority, the Anglo-American air offensive before the invasion came much nearer to a realization of the Douhet theory than the German operations in 1940/41. The Western Allies had extended their aircraft production to such an extent, that in 1942 they were able to enter into the fight against Western and Central Europe with superior forces.

As in the theory of the Italian General, the battle for air supremacy was the preliminary step. Gradually the enemy attacks embraced the occupied territories of the West and penetrated further and further into the Reich.

First of all they concentrated mainly on the coastal territory, in order to force back our own fighter squadrons. After 1943, however, the operations spread over the whole of Belgium and France. They were directed continuously against our ground organisation, especially fighter airfields, and against our aircraft industry. Within the borders of the Reich too, attacks were now carried out on a large scale against aircraft factories, and centres of fighter production such as Kassel, Oschersleben, Rostock, Warnemunde, Regensburg, Wiener Neustadt and Marienburg were heavily raided. The ultimate aim of these widespread operations was the elimination of the enemy Air Force, which Douhet considered to be the primary condition in the struggle for air supremacy. Continuous attacks against our war industry and the morale of the German people marked the end of the battle against the Luftwaffe. In this phase also the enemy was obviously following Douhet's ideas. Operations against industrial and communications targets were supplemented by terror raids.

The concentration of effort, which was noticeable in these operations, was also in harmony with the new theories. In the first half of 1943 the Allies flew mainly terror raids against German towns, but nevertheless tried to hit industrial and armament-factories. From the middle of the same year these operations grew to the size of "Liquidation raids" in which residential quarters and industrial and communication depots were all equally involved. During the early months of 1944 the main weight of enemy attacks was concentrated, next to aircraft production, on communication targets. From the middle of May the Allied raids on the Reich were directed especially against German synthetic oil industry.

Thus the war against the sources of power, as postulated by Douhet was to a great extent carried out. The four-engined aircraft

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used by the enemy in all these raids were able to penetrate deeply into the Reich, were capable of carrying a considerable bomb-load, and possessed stability and heavy defensive armament. In these respects, they resembled Douhet's ideal type of "air cruiser".

It was not found possible, however, to do without a strong fighter force. On the contrary it soon became apparent that even the Flying Fortresses needed increasingly strong fighter protection. Convinced of the destructive effect of air attack, the General had overlooked the fact that technical progress in air defence went hand in hand with the rapid advance in flying technique.

It was not the case, as Douhet had tried to prove, that all the squadrons employed in the defence of the homeland were superfluous and useless. The ARP organisation, developed to the utmost, was of itself insufficient. Only by the effective co-operation of passive defence with the Flak and fighter defences did the defence system achieve its maximum strength.

The end of the war could not be brought about, either materially or psychologically, by air warfare alone. Events proved Douhet to be right when he maintained that the differences between front line and home front would be eliminated by the air war. Grievous as were the losses suffered by the Reich and the damage inflicted on it, German resistance did not collapse under these blows. Here again it was clear that the General, judging from the point of view of Italians, had grossly underestimated national morale. Finally the short period of time in which he hoped to force a victory by air warfare had now become an illusion.

For two whole years the enemy conducted his massed attacks against Western and Central Europe in order to bring about the weak condition which he considered to be an essential condition for an invasion. Even if these attacks could not bring about a final victory yet they proved themselves to be of the utmost importance for the further course of the war. Above all, the overwhelming air superiority of the enemy contributed greatly to the success of the invasion. If we had had even equality in the air, the operation could not have been carried out successfully.

The enemy could operate his strong bomber and fighter forces practically unimpeded over the whole of the Western theatre of war. By this means he enabled his land troops to break through and opened up the road to the East. On this occasion the Army and Navy also played their part in the strategic offensive. However, they did not enter the picture until the Air Forces had laid down a barrage enabling them to advance, under air protection, and complete the victory. The whole of the Douhet principles, were not, therefore, put into practice by the enemy. Indeed, it is open to doubt whether absolute air warfare is at all possible under the present-day tactical, technical and organisational conditions.

In a correct appreciation of the effect that could be gained, our opponents had concentrated on air attacks, although they had not renounced the use of the Army and Navy. Thus, in the true sense of Douhet's theory they attained the maximum effort from that arm of the Forces which had fundamentally influenced the conduct of warfare. The possession of air superiority was an essential condition to the great enemy successes in the West.

It is remarkable that Douhet foresaw the course of such operations at a time when the air arm was only in its early stages of development.

Using the experiences of the First World War, he created a new theory of strategic air warfare, which has remained, even up to the present day, a burning question in all observations on military science.

"Douhetism" soon went beyond the borders of Italy and was regarded by foreign powers as being of epoch-making importance. Although the General's

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theory was based mainly on conditions in his own country, its fundamentals became a part of the military science of all countries.

He paved the way for an independent air force, and demonstrated the necessity for a third arm of the Forces, on an equal footing with the other two.

The General wished to do justice to the importance of technical progress and thus to make full use of the possibilities of technical weapons in any future war. He had recognised that the Air Force, being a weapon of space, would be governed by new laws and for that reason would have to be separated from the Army and the Navy.

Firmly convinced of the importance of his ideas, he overcame all obstacles, and carried his work to a clear and logical conclusion.

His ideas on air supremacy and air offensive formed the basis of the new school of thought. In the war of space, which would be carried out by the Air Force, Douhet saw the only opportunity of avoiding a repetition of the static fronts of the 1914/18 War. He therefore believed that he would be serving the collective aim of the forces best if he based all preparations for war on the assumption of a large-scale strategic air war. The massed breakthrough to the opponent's sources of power was to force the decision in the future war.

In this new theory, as in every revolution, the old was valued too little and the new overestimated. Douhet did not advance beyond the point of view of the First World War in his ideas on the operational possibilities of the Army and Navy. To recognise the limitations of his theory does not, however, lessen its importance. The course of the European war since 1939 has shown to what extent Douhet's thoughts were a part of the future. Air supremacy and air offensive did in fact become decisive factors in the battle.

Even to day, then, we must develop the ideas of Douhet in order to extricate ourselves from the defensive position which has been forced upon us by the pressure of the enemy powers. The re-conquest of air supremacy is a decisive factor in the outcome of the war and if achieved, will guarantee final victory.

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