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THE USE OF TRANSPORT AIRCRAFT IN THE  
PRESENT WAR

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The Use of Transport Aircraft in the Present War.  
What deductions can be drawn as to the possibilities of  
development of air transport for military purposes?

The development of air transport to its present degree of military importance became apparent long before the outbreak of this war.

After the British had put aircraft into service as troop transports during the disturbances in Cyprus in 1931 and during the fighting in Iraq in 1932, and after troops, wounded, and supplies were carried by air in the Chaco War between Bolivia and Paraguay in 1933 - 34, the use of transport aircraft was demonstrated more fully in the Italian campaign in Abyssinia. This development was shown over European Territory and in European war conditions when German transports flew over countless numbers of troops from Morocco to the Iberian peninsula during the Spanish Civil War.

After these first signs it was clear that in a total war such as the present one, the possibilities of the transport aircraft would be exploited, and such developments have already changed some essential features of the picture of war.

The history of the transport aircraft is connected with the resounding names of German offensive operations, as well as with the memory of serious crises. Many pages could be filled with reports of indispensable help in countless minor tasks. The conspicuous examples of the use of transport aircraft in this war are so varied in their details, that the difficulties which generally exist in the use of historical examples, also arise here to a considerable degree. Basic knowledge cannot therefore result from a detailed description of a few particular examples but only from a coherent review of these experiences for which the especially characteristic examples may however be quoted for the purpose of historical evidence, and the prospect of an abundance of possibilities for the use of transport aircraft will be disclosed.

In the following pages a short description of the possibilities of using transport aircraft will be given, and then some conclusions on their use in active service with regard to questions of tactics, organisation and technical aspects. A consideration of possibilities of development in general will follow a survey of activity abroad.

Both types of transport aircraft, the powered machine and the glider, are capable of carrying men and freight. Independence from geographical limitations and speed are the main reasons for preferring them to other forms of transport. Limited load according to the weight and size of the freight or the number of persons proves a disadvantage. This however can be compensated for to a certain extent by using them in large numbers and by increasing their speed, and is a question of further development. The fact that the conditions for blocking communications in the air are different from those on land or sea, gives the transport aircraft its special importance for military purposes. Its tasks in the service of the army are as follows:-

- (i) Bringing up reinforcements and supplies in various tactical situations.
- (ii) Speedy transfer of army and air force units.
- (iii) Use in action.

In normal supply transport the advantage of the aircraft as opposed to rail, road or sea transport, lies especially in its speed. Above all it can maintain and increase the fighting power of the air force. The demand for constant readiness for action of flying formations and their dependence on equipment and spare parts form the most important reason for the use of this costly form of transport in bringing up supplies. The vast areas into which the war has spread and the problems of supply make transport aircraft more and more necessary for this task. Terrain difficulties in many areas and the speeding up and shortening of the way from the supply depot to the troops are

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reasons which justify the employment of the transport aircraft. Widespread and wasteful employment in special tasks must have unfortunate results. The art of managing, and in particular of managing supplies consists of using every available means for its own particular purpose, and in maintaining a healthy relation between expenditure and result by farsighted and practical employment of resources. Regarding transport aircraft, their most effective use is in cases where they cannot be replaced by another means of transport or where their use gives promise of an outstanding success.

Above all, this question arises whenever the tactical situation requires that supplies be brought forward at the shortest notice. If it is a case of maintaining the advance of a panzer spearhead to exploit a favourable situation, as can be seen in many examples from the campaigns in Poland and France, transport aircraft provide an especially suitable means of conveying the necessary supplies of fuel and ammunition. Independent of the most involved situations on the ground, they are the only serviceable and fast method of transport in such cases. This question arose in the Balkan campaign in April 1941, when there were no railways and only a few bad roads available to supply flying formations from the airfields in the newly captured plains of Salonika and Larissa. By means of the transport aircraft which had been made ready in Bulgaria, fuel and bombs could be carried over the mountainous terrain. From this concentrated use of transport aircraft for this work a foundation was laid for the future successful operations of the Luftwaffe and for the successes against the English evacuation fleet.

Transport aircraft have even more operational importance in situations where no other means of transport can be employed.

Air transport is a decisive factor in cases where encircled troops must be supplied, or when supplies must be conveyed over enemy-controlled waters. The fighting strength of encircled troops and the carrying out of their orders with their present-day dependence on supplies, depends on the success of air transport.

The latest events of the war have provided many examples of this, especially on the German side. We remember Narvik, Africa, Demjansk, Cholm, Velikie Luki, Stalingrad, the Kuban bridgehead, the Crimea, Tcherkassy.

The supply of Stalingrad is an especially characteristic example, in which the problems of air transport became of major importance. Difficult as it may be to assess fairly all aspects of the war effort, acknowledgement must be made to the work of the air transport.

The encirclement of the 6th Army in the Stalingrad area, which was completed at the end of November 1942, caused the supply of a concentration of 260,000 men to become a question of air transport. Because of the size of the task, large transport formations had to be kept in continual service.

At the outset the 6th Army required 500 tons of supplies daily, though this requirement was considerably reduced later. The demands of the Army could be met in normal conditions by 10 Ju.52 transport groups employing 60% of their aircraft daily. An average daily demand such as this naturally cannot be met if loads are increased by two or three hundred per cent to make up for days when the weather does not permit flying. Consequently transport resources must be adjusted to this increased output.

With regard to the extent of requirements, it must be taken into consideration that this does not only depend on the mass of encircled troops and their weapons, but also on the supplies available in the encircled area. As these are used up, the extent of requirements will grow, and as the number of men and weapons diminishes it will decrease. If the necessary consideration is given to a reasonable supply administration, especially for days when heavy fighting takes place, supply will exceed demand.

A basic factor for the effective use of the transport aircraft is the type of supplies it must convey.

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If the aircraft lands with the supplies in the encircled area it can use its load capacity to a far greater extent than would be possible if it dropped supply containers and packed loads. A number of points must be considered regarding the tactical position on the ground and in the air, as well as conditions with the troops to be supplied, when weighing the advantages and disadvantages of landing or dropping supplies. In cases of large-scale supply an attempt must always be made to build a landing strip in the encircled area, which will be large enough for the transport aircraft and which cannot be threatened by the enemy on the ground. The supply of Stalingrad by transport formations was effected by landing almost until the conclusion of the battle while formations sent in to bring additional supplies dropped their goods. When the airfields used at first at Pitomnik and Passargino fell into Russian hands, only the airfield at Gumrak was available, and as its construction had been commenced too late and hastily completed it was only suitable for Ju.52s and proved insufficient for the supply of the encircled troops. The lack of close cooperation between the Luftwaffe and the 6th Army is shown here to disadvantage and proves that the ground organisation of the Luftwaffe had also important tasks to fulfil in the encircled area.

As the tactical situation on the ground has a direct effect on the number, type and suitability of airfields available, the relation between them and air transport must therefore be taken into consideration. There is another important factor regarding the effective use of air transport and the forces required - distance. The longer the distance to be covered, the smaller the number of transport sorties will be and the more effective the defences must be; there may be heavier losses and greater wear and tear of the aircraft. The increasing difficulties of air supply can be shown by the increase in distances; from 230 km. between Stalingrad and the airfields at Morosowskaja and Tazinskaja, (which were usable up to Christmas 1942), to 330 km. between Stalingrad and the airfields at Ssalsk and Swerewo. When Russian tanks appeared on the airfield at Tazinskaja one foggy morning destroying some of the aircraft and forcing the rest to take off to the south-west without receiving orders regarding their destination, there was, apart from the effect of the loss of the aircraft, a decrease in the supply service which lasted for some days. This example is an especially good illustration of this point.

The level of transport output required, the type of supply, and the distances imposed by the situation on the ground are the first and to a certain extent the absolute basis for the assessment of the forces required. At the time of the operation itself it becomes a matter of fulfilling the transport task ordered and thereby maintaining a continually effective level of air supply in spite of technical difficulties, the weather and enemy action. The measures which bring about the realisation of this demand lie in the fields of organisation and tactics.

At the end of December the number of groups available for this operation was increased to 10 by bringing in 3 transport groups from Africa, where the supply problem was just as urgent at this time, and by reinforcement with transport aircraft from schools and from air traffic. The great decrease in the preparedness of these formations constituted one of the main reasons why towards the end air supply did not come up to expectations. The cause lies in faulty consideration of the technical requirements of a flying formation in conditions imposed by the weather (temperatures were sometimes -30 degrees, with frequent snowstorms), and in the activity of the enemy, which had become an ever-increasing problem.

The conditions in the organisation and technical branches can only be briefly described.

The fact that many aircraft take off from a single airfield (partly because of consideration for the supplies brought up by the army), the lack of leadership within the tactical organisation of the groups, lack of ground crews in the groups, which only brought their chief technical personnel with them, the insufficient amount of aircraft servicing equipment available

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on airfields, faulty equipment of newly arrived aircraft, the blocking of the maintenance installations of the airfield available at Taganrog owing to the large number of faulty aircraft, and difficulties in taking off, imposed by heavy snowfall.

Enemy air activity against supply traffic which had been continually increasing since the middle of December and the heavy losses caused by it, permitted daylight operations in only the worst weather, so that the number of night operations had to be doubled. This situation made even heavier demands on the cooperation of the 6th Army with regard to marking airfields and unloading aircraft in the surrounded area. In January the landing place was often the target for enemy bombing attacks, even at night, and after the area had been split into two pockets, north and south, enemy flak covered the whole area. This reinforced the call for closer cooperation between the Luftwaffe ground organisation and the encircled troops. The difficulties encountered by aircraft having to fly in such conditions and to land within effective range of the enemy need not be described.

It must not however be forgotten that it was still possible for supplies to be brought to the encircled troops in these difficult conditions, and that it was only through the occurrence of so many contrary conditions which could not be overcome, that the necessary level of transport service could not be reached. The possibility of supplying large encircled units had been proved a year before at Demjansk, where 100,000 men of II Army Corps were supplied without interruption for over two months with a daily average of 300 tons of goods by aircraft landings at three places in the pocket.

Stalingrad is an especially instructive example of the failure which must occur if the routine laid down for transport formations is abandoned. In certain situations transport aircraft constitute the only means by which a definite operational object may be attained. The transport formations are part of the operational air force and must be directed and employed according to corresponding principles. Therefore when operational they must be given the same facilities which are a matter of course in the case of battle formations.

Next to the transport aircraft the glider has been found useful as a means of air supply. Towed behind the powered aircraft the glider has increased its performance considerably. It can also be towed by smaller types of aircraft, allowing them to be used in air transport. The short distance required for landing even on unfavourable terrain makes the glider suitable for the supply of small outposts and pockets, even in mountainous areas. Owing to its low cost of production, the glider can be used in cases where once landed it cannot take off again, although technical development has already solved the question of its pick-up by the low-flying tow aircraft. By using a non-flexible connection the transport glider is suitable for bad weather and night flying, and is for this reason a means of transport for which many uses can be found today. As a disadvantage it must be noted that owing to its negligible mobility on the ground it can cause obstruction on airfields.

By reason of its special qualifications, the transport glider can be of great service in supplying encircled units. After it had been used at Cholm and Velikie Luki, where it was the only possible means of bringing up weapons and supplies, it was used to a greater extent in supplying the 17th Army in the Kuban bridgehead and in bringing back men, wounded and material from this area.

The development of the transport glider, which has led to its use as a long-distance means of transport in Germany, may be taken as a sign that a way has still been unexplored to develop air transport profitably, over and above the limitations which have been imposed on it by its small load capacity in comparison with other forms of transport. The fact that the main problem lies in the construction of the towing aircraft (in Germany the He 111 Z has been used), and that the present German armament situation would cause a deadlock here, should not prevent the prospects of possible

development being considered. The importance of the transport glider will occupy us in the consideration of the other tasks of air transport, and the possibilities of its development in other directions show promise that new ways of using the glider for reinforcement and supply by air will also be found.

Although we have extensively employed air transport for supply in this war, and as the enemy has observed, this has led to many successes, its limitations must not be forgotten.

The transport of heavy loads such as tanks by air is a question of development that has remained unconsidered. The transport of large quantities of supply goods requires heavy expenditure of transport aircraft, with the necessary ground organisation, and the resulting fuel consumption and wear and tear of aircraft. Air supply over enemy-controlled land and sea areas likewise necessitates a great expenditure of forces for its protection.

Heavy expenditure for the battle formations of the Luftwaffe is entailed in maintaining and giving adequate support to troops in distant encircled areas, which usually offer very little in the form of an air base. On the other hand the advantages to be gained must always be considered carefully.

In spite of this, the transport aircraft has already changed several aspects of war because of its ability to maintain the flow of supplies over enemy-controlled areas to large formations of troops. The theory of relying on a firm front and secure communications could at least be temporarily relaxed in this respect. Without the limitations imposed by this principle the exploitation of many operational situations, which would have otherwise been considered untenable, would be possible. To a certain extent the High Command has by this new use of the air regained a freedom of movement which has been lost for the last hundred years, and the risk entailed in mobile warfare seems to have decreased to a considerable degree. An expansion of the form of land warfare, which had become more and more limited, is now possible, and we will be occupied with this later, in the consideration of the transport aircraft in active service.

It is the speed of the transport aircraft which overcomes questions of time and space more easily than other forms of transport, that makes it of greatest use in the movement of ground troops and air force formations.

The transfer of battle units of the Luftwaffe over long distances rarely creates any major difficulty for the aircraft themselves, but in order that the unit may be ready for action in the shortest possible time, technical personnel and maintenance installations must be brought into the new area of operation just as quickly. Effective as the transport aircraft may be in fulfilling these tasks, its use entails a heavy expenditure of a valuable means of transport.

The transport glider, with its special qualifications, is the best means of filling this gap. The mobility of flying formations with gliders as an additional means of transport can be brought up to the maximum, and thus allow the High Command far greater freedom in using them. The difficulties which arise in towing gliders, and which still exist to a certain extent in models which are being introduced at present, have been removed in the case of types undergoing tests, enabling them to be towed by normal combat aircraft.

The transfer of these tasks to the glider, which has proved itself well with several squadrons, frees the powered transport aircraft for other work, and is also very economical, especially with regard to fuel.

Other aspects of this new feature in warfare can be seen in the consideration of air transport for the speedy transfer of ground troops.

At the end of September 1941 a Russian counter-attack on the Neva threatened to break through the cordon of troops encircling Leningrad. Reinforcements were needed quickly and with the help of transport squadrons

one paratroop regiment, which had been brought up to full strength, was brought into the Leningrad area so quickly that it was in action 48 hours after leaving its barracks in Stendal.

At the time of the last battles around Tunis the apparent danger of an Anglo-American attack on Europe from the south, with Sicily, the Italian west coast, Sardinia, Corsica, and Southern France as possible objectives, caused the preparation of an operational reserve in the area, which would be available at short notice for any one of these possibilities. Fliegerkorps XI, with both its paratroop divisions was assembled in Southern France in the area of the lower Rhône for the purpose of being sent in air transport to counter-attack in case of an invasion. The air transport movement carried out later, which brought the 1st Paratroop Division into the Catania area at the time of the landings in Sicily, shows the execution of the theory, even if it was carried out in an amended form. New possibilities have been given by the transport aircraft to the strategic principle of having forces in the right place at the right time. As air transport can bring about the speedy and effective movements of ground troops, it is a reasonable probability that in some cases the valuable element of surprise can be gained. A characteristic example of the withdrawal of troops by air has been shown us in this war in the evacuation of the Kuban bridgehead. The importance of air transport was proved effectively there and exemplified what has been said about the newly gained freedom of an operational High Command.

The most important work of troop transport by air is in connection with airborne operations.

The immunity of the aircraft to natural and artificial obstacles and its length of range permit land warfare to be carried far into enemy territory by the dropping of paratroops and the landing of troops in gliders and aircraft. Its speed enables a local surprise attack on the enemy, which, if not always on a large scale, is usually at the decisive moment.

Airborne troops developed by Russia long before the war, and provided for action by the Luftwaffe when conflict with Czechoslovakia seemed imminent, received their first test in the occupation of Norway. Although the airborne operations were not fully effective because of the unfavourable weather, it was shown that even the smallest units in possession of important positions can be a great operational asset, as was proved when the railway line from Oslo to Andalsnes, which was of great importance to the British, was blocked by a few paratroop companies at Dombas.

The world learned the operational value of a large-scale airborne operation for the first time on May 10, 1940. A new technique of war could be foreseen when on this day successes were gained deep in the enemy rear, in Holland, at Eben Emael, and on the Albert Canal, which were decisive for the initial success of the campaign.

Synchronised with the operations of the army, a large number of problems had to be solved by attack from the air; the envelopment of a defensive line (such as the Grabbe Line), the capture and keeping open of important bridges and crossings, the capture of airfields, and last but not least, the influence on the political situation and on the fighting morale of the people.

The airborne corps with Fliegerdivision 7 and the 22nd Infantry Division were sent in to gain the following objectives: the capture of the airfields around the Hague, the encirclement of the residential area to cut off the Royal Family and the Army High Command, the occupation of the town... by the 22nd. Infantry Division and subordinate paratroop units, and the holding open of the bridges at Moerdijk, Dordrecht, and Rotterdam for fast moving army units, which were to be brought up from Breda by Fliegerdivision 7.

Eight transport groups at eight airfields in the area of Luftgau VI and two independent transport squadrons were available for air transport. As the

advantages of surprise provided by speedy air movement are only possible through secrecy and concealment, the forces for this task were assembled only a few days before being sent in. Fighter protection was arranged and the routes of the air movement protected as far as the objective. Enemy defensive measures with flak, infantry and artillery made moderate air support necessary.

These three factors - secret and concealed deployment, protection of air transport and air force support with defence and attacks - will always be essential for the success of an airborne operation. They show a close connection with the plans of the operational air forces and require a corresponding understanding from their leaders. The intensification in air warfare which has taken place since the campaign in the west - better reconnaissance, stronger defences and the destructive battle against air bases - lays great emphasis on this demand today.

The use of transport aircraft forms the basis of the ground troops' operation. The success of the operation depends upon their being landed at the right places. Flying at a height of little more than 100 metres through effective flak and the difficulties of navigation when flying low show what is required of the transport fliers. The daring landings in the face of enemy fire on the airfields at Walhaaven and at the Hague as well as on the heavily defended main road south of the Hague prove how closely the transport aircraft follow orders.

The landing by gliders of the Koch assault company to capture the bridges over the Albert Canal, the great natural obstacle at Belgium's front door, and the capture of Fort Eben Emael may make the date May 10, 1940 as famous as November 21, 1917, when the first large formations of tanks broke through the German front at Cambrai. Just as the beginning of a development was shown then, which has led to fast armoured formations changing the course of war, so it appears possible that for the first time modern warfare has received new characteristics through this infantry attack out of the sky, with its speed and range.

The airborne activity in Holland consisted of a limited operation to support and to relieve the army.

The Luftwaffe was to prove the possibility of capturing an enemy area entirely through an airborne operation when Crete was taken.

After the occupation of Greece the German attack on Crete drew near. The possession of the island meant the extensive blocking of the English fleet in the Aegean, a great weakening of English predominance in the eastern Mediterranean and a favourable base for the attacks of the Luftwaffe against Egypt and the Suez Canal. Capture was only possible from the air, and before May 20, 1941, the comments of the world press showed firstly, what an important effect the execution of such an undertaking would have on the course of the war, and secondly, that a success through the element of surprise could not be expected here as had been the case in Norway, Holland, Belgium and at Corinth.

According to the plan of Fliegerkorps XI the sudden capture of the three serviceable airfields on the north coast by paratroops would form the basis for subsequent air landings, while it was intended to pin down large enemy forces by an attack on the capital at Canea.

The circumstances in which the transport squadrons were to be sent in would have an important effect on the course of the operation. Firstly, the question of an initial success rested on them, and only air superiority and the high morale of the troops justified the hope of victory. On the other hand however, the situation on the ground could be turned to our favour by forced landings on the airfield at Malemes.

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The general situation of the war demanded that action be taken against Crete as quickly as possible, especially considering the deterioration in the situation in the east.

Therefore the operation against the island had to be carried out from a base which the army had captured only three weeks before. As the airfields available had to be shared with Fliegerkorps VIII there were only 7 at the disposal of Fliegerkorps VI for the 10 transport groups of 502 serviceable aircraft. There were neither Luftgaukommando nor Horstkommandanturen nor any supply service units available. The amount of fuel required was 3.6 million litres, but only enough was brought by sea to Pireas harbour and Corinth to allow the 10 groups three sorties. The ships were delayed and the commencement of the attack had to be postponed for two days, thus giving the enemy more time to prepare his defences. Owing to the absence of the fuel convoys, fuelling from drums had become necessary, with only sufficient for two sorties. These improvisations could not of course remain without effect. Precise timing of take-off and flight is decisive for the initial success of an airborne operation, but owing to the completely inadequate airfields a punctual take-off of aircraft in close formation had become impossible, so that the ground situation could not be properly planned. The punctual synchronisation of troop landings according to their tasks could no longer be maintained. Collective enemy action against separate units which landed, loss of the element of surprise for other units and aircraft losses through the defences which had already recovered from bombing attacks, was the result. Owing to the pressure of time dictated by major issues, decisive preparations for the airborne operation and also routine principles of the Luftwaffe were partly overlooked. The subsequent disadvantages could have been disastrous and are a compelling indication that air transport should have a more important place in the principles of air warfare.

On the second day of battle the possession of Malemes airfield, which had not been taken for the reasons given and because of the badly underestimated resistance of the British, had become the key to the success of the operation. According to the decision of Fliegerkorps XI, a forced landing was made in the face of enemy artillery fire by a transport group carrying mountain troops, while at the same time paratroop units in action in the area and new units landed into an almost hopeless situation attacked to create a diversion. Owing to the spirited attack and the flying skill of the transport pilots, the 5th Mountain Division was landed with the minimum of casualties and the crisis was overcome. The capture of Crete had shown that the capture of enemy-held areas is possible by means of air power alone, resulting in greater claims for the possibilities of air transport; claims which were later emphasised through the further development of the war into a war of materials and through the increasingly dangerous anti-aircraft weapons. In a war of materials only airborne operations of limited extent will be possible as surprise attacks. The success of larger undertakings is based on the participation of heavy weapons, such as vehicles, tanks and above all, anti-tank weapons. The resulting demand that air transport carry heavier and larger loads could be extensively fulfilled in the meantime in the case of both powered aircraft and gliders. The greater need of supplies incurred by the increased use of heavy weapons, which are conveyed exclusively by the Luftwaffe, and the reasons which result in the preparation of transport forces for supply service only, can only be hinted at here.

More difficult are the problems which are created for the transport aircraft by the increasing strength of anti-aircraft weapons.

The consequent demand for greater speed of transport aircraft is not easily compatible with the demand for good landing qualities and suitability for rough terrain. As extensive independence of the terrain must be regarded as a primary factor, the necessity arises of using air transport at times when defence is not so effective, i.e. at night. The results of this, especially for the powered aircraft, depend on training and the ground organisation in the landing area.

/Higher

Higher speed is demanded of the transport aircraft in dropping paratroops and this has come nearer realisation as the jump has meanwhile been made possible from aircraft at normal flying speed.

Meanwhile, development already completed has given the glider special advantages over enemy defences. Rigid connection between aircraft and glider has made flight in close formation possible and affords better conditions for defence and fighter cover. Owing to its ability to dive the glider, with a retarding parachute or a combination of diving planes and brakes, can touch down on its landing place in a surprising manner by day or night, and is not forced to fly low as the transport aircraft must when dropping paratroops. When diving it is also possible for the glider to reduce enemy defence in the landing area by use of its fixed armament. Its equipment with the retarding parachute and, if occasion arises, with sets of rockets to be used as brakes, enables a pinpoint landing irrespective of the terrain.

An evaluation of experience from the operations of transport aircraft, and a careful observation of the further development of air warfare with all types of attack and defence, guarantee that the use of air transport will remain possible in tactical and technical respects. The opinion that airborne operations have become obsolete owing to the development of air warfare must be described as at least premature, since firstly the method of air transport and landings can to a certain extent be adapted, and secondly, a certain loss must be reckoned with in the attainment of an important objective.

Although the question of the possibilities of air transport is not considered here with a view to the resources of Germany in relation to those of her enemies, it can be said that the use of air transport and airborne troops is not altogether based on absolute air supremacy.

When a weapon has been used successfully in war, it undergoes continual development and exploitation. In the use of the transport aircraft this development should be extended beyond the borders of airborne operations hitherto existing and should consequently find more frequent use on a broader basis. The possibility of attacking enemy defences from the air, of capturing commanding and decisive positions, or, in the event of a counter-attack, of launching surprise attacks in the enemy flank or rear, shows new ways in which the air force can support ground fighting. Under conditions similar to those in which close combat battle squadrons are sent into action, the Luftwaffe will be able to take a greater part in ground fighting and in helping to bring victory. Owing to the "vertical envelopment" made possible by air transport by its advantages of speed, extensive independence of terrain and obstacles, and its element of surprise, its appearance in war may become a matter of course, as is the case at present regarding the use of tanks. The distance to this objective is no farther than from the almost unnoticed appearance of the first tanks in World War I. and the first tank battle with its unexploited possibilities to the operational use of tanks in the last few years. If we consider the education of a whole nation in the thought of motorisation as one of the many necessities for modern warfare, the realisation of the aforementioned possibilities of development by the accustoming of a whole nation to the thought of flight will no longer appear as a mere Utopia. For the somewhat higher demands on soldierly qualities - independent action and genuinely inspired fighting spirit - which must be made because of the especially difficult aeronautical problems and the hardness of ground fighting, the spirit of the German nation is now as ever sufficient.

Germany has <sup>led</sup> the way in the military use of the transport aircraft, especially in the operational field. Even today there are still no basically new ideas in this direction to be found abroad. The airborne operations undertaken thus far by the Anglo-American enemy cannot be accepted by us as especially original. We have no detailed knowledge of similar operations undertaken by the Japanese, but apart from the amendments necessitated by the war theatre, the essential features of our own airborne operations may be recognised again.

/Partly

Partly caused by consideration of the element of time and the new problems which have confronted them, and partly imposed through the example set by Germany, the latent potentialities and the urgent necessity of air transport have become increasingly clear to the British and Americans in the last few years. While the intensified aircraft armaments situation and the questions of air power imposed thereby make the prospect of the future development of the transport aircraft more difficult for us at the moment, the unlimited industrial resources of our enemies are being brought increasingly into the service of air transport construction. America is preparing to overcome her transport problems in general by the construction of countless air transport squadrons, but the problems are continually increasing in connection with the far-reaching operations against Japan, the supply of China after the loss of the Burma road and to a certain extent the deliveries to Russia, the supply of bases in Africa and the Near East and the operations in the European theatre. Looking out from the confines of our own European area we see transport problems arise, in which the slowness of convoys and the voyages which last for months do not have much influence on the speed of the war in many theatres. If we bear in mind the total of 500 American transatlantic flights per week in the spring of 1943 and the fact that gliders were first used to bring supplies across the Atlantic at about the same time, we know that the Americans, even at the beginning of their development, have made an impressive entry into this field. It is doubtless the profit aspect of air transport which concerns the Americans most. However, the last word on this subject cannot be spoken for some time, as the limiting factor of relatively small load capacity is still a question of development, while speed already offers a certain compensation through the use of air transport at any given time, which is the most essential basis of profit as far as military purposes are concerned. On the one hand, the small requirements of raw materials in aircraft construction as opposed to ship construction, the omission of convoy escorts, the smaller use of machine tools in aircraft construction, and on the other hand, the special raw materials needed for aircraft, the maintenance of gigantic fuel stores far away from the refineries and the consequent additional burden on transport, are some of the factors which require consideration, and which do not make at all easy the choice of correct proportions for a construction programme for ships and transport aircraft.

In estimating the value of the transport aircraft in this connection, it must not be forgotten that its profitableness does not lie in the transport of people or goods in itself, but exclusively in the military successes which can only be attained through its powers.

We still remember how Germany's theoretical and to a great extent practical leading position in wartime air transport has arisen from her leading position in peacetime air traffic. In the case of our enemies we can see how air transport has grown out of the extensive, but sometimes one-sided field of purely military use, to great political importance. A new consideration of air bases has resulted, in which the questions of peacetime air traffic, factors for future political and economic influence which should not be underestimated, are closely connected with the defensive policy of air bases for sea and land supremacy.

The compression of time and space brought about by the railway, the steamer and the motor engine had decisive consequences on the character of war. The ever-increasing intensification of this development is based on the new influence of the air force. Through its speedy and far-reaching action in attack and reconnaissance the air force is capable of determining and changing the course of the war in this connection. In air transport a new means of operation has come into being of great importance for the Luftwaffe, in whose hands its performance and safety lie, and through which the Luftwaffe title of 'bearer of the army's commands' is once again confirmed. A new means of decisive cooperation on the part of the Luftwaffe in the operations of the army is available in the shape of air transport, and with the expansion of its effectiveness to include the capture of ground positions another step has been taken on the way to total air warfare.

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Same as for Translation VII/64.