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AIR HISTORICAL BRANCH

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EXTRACTS FROM CONFERENCES ON
PROBLEMS OF AIRCRAFT PRODUCTION

Milch Documents, March 1943 -- February 1944

TRANSLATED BY
A.H.B.6, AIR MINISTRY
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Extract from Conference held under the Chairmanship
of Reichsmarschall Goering at Karinhall on 18 March, 1943

GOERING: Gentlemen, I have called you together again today to speak about the entire situation on the technical side of the Luftwaffe and to inform you of my views on this subject and, most important, those of the Fuehrer as well. It would have been very agreeable if I could have commenced my remarks today by acknowledging and thanking you for your efforts. However, I find myself unable to do this if I am to continue speaking frankly - quite the reverse. I can only express to you my absolute bitterness about the complete failure which has resulted in practically all fields of aeronautical engineering - bitterness too that I have been deceived in the past to an extent such as I had experienced only in variety shows at the hands of magicians and illusionists - such has been the hocus-pocus which everybody has used to take me in. Whenever future problems were under discussion everyone already had the most fantastic things ready and it was then only a matter of production before they could be brought into service. Some things which were reported to me as being absolutely ready even before the war are still not available. We lag so far behind enemy industry, or rather the technology of many fields of industry, particularly radar, that it is absolutely childish to attempt to draw a comparison. I am not forgetting that there had been a marked improvement. In no way do I fail to appreciate that we went into action with aircraft which in their time were something and were superior to enemy types. I by no means fail to recognise that even today the Me 109 is still an aircraft of very high performance. However, it has now reached the peak of its performance; no further improvement is possible: the aircraft cannot take a more powerful engine, whereas the British began to improve the Spitfire series very early with the result that this aircraft is now absolutely and unquestionably superior to the Me 109. I in no way fail to appreciate that the He 111 was a good aircraft in the first year of the war, but today it can be used only as a transport in Russia. I particularly emphasize that the Ju 87 was a fantastic gamble, with the result that today this aircraft can come into its own only in the East, while it has absolutely no chance against the enemy in the West and cannot be used against him in any way unless it is escorted by so many fighters that there is no longer any justification for the operation. Even the Ju 88 is an aircraft which was thoroughly up to standard in the first years of the war and which today can only just be used at night for operations against Britain on rare occasions when conditions are especially favourable. I am not dealing with the Eastern theatre at all and now refer only to the West when I mention the enemy. However, all these were aircraft which were available at the beginning of the war, since when I might well say that I have witnessed one reverse after the other - crises of almost catastrophic proportions.

Shortly after war broke out it became evident that the 110 was no longer equal to the demands made upon it. I was then told of the 210 miracle aircraft which was to supersede every other type. I was promised this aircraft years ago. As a result of the confidence placed in it, development of other aircraft was stopped, which later proved to be an awful blunder. This aircraft was probably one of the greatest disappointments we have ever had, for as a result of the hopes based on it measures were taken which in their total effect set us back to a colossal extent. I remember - it is years ago now - when I was in Augsburg, I was shown an "America" aircraft (Me 264) which had only to be put into large-scale production. It was alleged that the aircraft would fly from here to the east coast of America and back and from Azores to the west coast of America and back etc. etc., and would also carry a large load of bombs. They told me that in all seriousness. At that time I was still trusting enough to at least go half-way towards believing that something of this kind was possible. Today I know that it is, of course, impossible. I was promised a heavy bomber, the He 177, which should have been with the squadrons a year ago. Following a series of calamities I was told that if there was no need for this aircraft to dive it would be the best kite in the world and could be issued to squadrons instantly.

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I at once said that there was no need for it to dive, as there was no intention of it being used in this way. However, every time we attempted operations with this type there were only catastrophic losses which were not brought about by the enemy. More than a year has passed now and even if the contraption is produced in a reasonably serviceable version in a year's time it will probably be obsolescent anyway. There is otherwise absolutely no immediate prospect of this situation being eased or the state of inferiority in which we now find ourselves being alleviated to any extent.

These are the aircraft. I do not wish to speak about all the other future projects. They may be all very fine, but I have been given time limits which cannot be questioned at the moment and will take an awfully long time to put into effect. Perhaps the 410 will bring some relief. However, you cannot blame me if I am very sceptical about this too and prefer to wait for results. Furthermore, it has not been possible to design our fighters in such a way that they can also be used at night. Although some of the aircraft may have good points, they are nevertheless very difficult to service and require airfields of a very high standard - otherwise they are always bursting tyres etc - which is of course a further extremely serious impediment where operations are concerned.

Fun has been made of the enemy's backwardness and his slow four-engined crates etc. Gentlemen, I would be extremely happy if you could reproduce one of these crates in the immediate future. I would then have at least one aircraft with which something could be achieved. You know for a fact that in addition to night attacks the enemy does not hesitate for an instant to carry out daylight operations with these four-engined crates, which have excellent armament and terrific stability, and in spite of our so-called ultra-modern fighters he gets through everywhere. It seems monstrous when I recall that the British - although they were also not blessed with aluminium, but on the other hand were not so short of it as us - built a wooden aircraft at the right moment, which, moreover, is almost incredibly superior and unrivalled in speed. Today these aircraft stooge back and forth over Germany, sometimes on reconnaissance, but at others not hesitating to carry out very heavy attacks without incurring the slightest loss.

Here I am then, empty-handed, as far as aircraft are concerned. I do not know if anything can be done about this in the immediate future. Worst of all is the dead loss of the 177, as this means that essential reconnaissance for U-boat activity cannot be carried out and operations against enemy shipping with special-purpose bombs etc. will not be possible either. It is not only that the appearance of this aircraft is a year behind schedule, but that there is moreover no likelihood of its becoming operational for the present, and that an aircraft which has been in development for years should now suddenly present difficulties such as cannot even be explained. I find this incomprehensible too.

However, the situation as regards engines appears to be even worse if anything. Once again there has been one promise after another, but comparatively few have been kept. To take just one example - by the time the 801 had been developed after extensive operational experience to the point at which it was comparatively serviceable and would outlast several operations without needing to be changed, the enemy had already gone far ahead in terms of horse-power. Thus, just when the engine was at last beginning to become fit for operational employment it had once again already been long outclassed.

When I turn to water-cooled engines I find that here too the promised line of development has not been followed. I can see nothing exceptional in achieving an increase in horse-power by coupling together two engines and passing this off as a new engine - quite apart from the fact that I can do nothing with this crazy contraption as its suspended cylinders and unfortunate exhaust system make its employment against the enemy impossible. A series of fires has already caused

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loss of life. But apart from this again, this nailing together of two engines has produced further immense difficulties. They dare to give me an engine which cannot be serviced at all at operational stations and which at the slightest trouble must have its entire power unit dismantled before the engine can even be reached. The demands I made years ago for 2,000, 3,000 and even 4,000 horse power have not been met in the slightest degree. All that is still in the distant future.

I do not wish to imply that the fault lies with industry alone. I am aware - and I regret having to confess this - that in past years my own department has been very much at fault and that the Field Marshal and his new colleagues have only just succeeded in restoring order. I initiated a court martial investigation just to obtain a general survey of the situation. This survey showed me not only how great was the Ministry's inefficiency, but also gave me some idea of the extent of industry's inefficiency. It is as if the brains of our designers had suddenly dried up and they were no longer capable of producing anything else, or as if they took such a childish delight in the aircraft which they had produced that they did not consider it at all necessary to give their minds to new designs. I could read page after page of this court martial investigation to illustrate to you the really incredible dilatoriness in this field.

In addition, there has been a complete lack of farsightedness on the part of those controlling industry. There are always disputes in factories between the works manager and the owner and his designers. These designers are always being changed etc. etc. Nobody has given a thought to the broad, general policy and I really must declare that things have gone by far the best at factories where the state, that is ourselves, is the owner. I am always being told a great deal about contractors' energy and private initiative etc. I can only assure you, gentlemen, that I have not noticed much of this, at least not on your part. As I said before, factories under our control, i.e. state-owned, have not worked in a bureaucratic manner; on the contrary, the best work has been done in these factories. If all goes well and you, gentlemen, produce your ancient types and achieve a certain increase in output, then this will be gratifying and I will commend it, but in the final analysis it is really nothing to shout about. These are types which were more or less obsolete even at the outbreak of war. However, this is not a particularly outstanding effort.

There have of course been difficulties and you too, gentlemen, have frequently been afflicted by such difficulties. However, I too have spent some time carefully thinking over these difficulties and at no time have they assumed such proportions as to provide the slightest justification for allowing such an absolute standstill to occur in the development of airframes and engines. Moreover, I would have expected that in view of the much-vaunted initiative of private contractors, far more extensive preparations for retooling at the right moment would have been made than has been the case. Once again, this has been carried out most intensively and efficiently in the state-owned factories.

As regards armament we have managed passably well. However, in this case too it is absolutely essential that more powerful aircraft armament be produced as quickly as possible. Once again the designers should have come to this conclusion on their own initiative when they knew that the enemy was turning out increasingly powerful and heavily armoured aircraft. I again emphasize; let nobody come and tell me that the aerodynamic performance of our aircraft is far superior to that of the enemy's four-engined aircraft. All that is of no interest to me; I am interested only in practical results. I would exchange all of your brilliant designs for even a handful of these "old crates", as I have said before. With these I would at least be able to carry out operations which unfortunately are not possible with your aircraft.

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However, the radar situation is by far the worst. It is really desperate. It must of course be plainly admitted that the British and Americans are leaps and bounds ahead of us in this field. I have always taken this into account as a matter of course and it has always been evident; however, frankly speaking, I did not believe that they were so far ahead of us. I had hoped that although we were lagging, we would at least manage to keep the gap from widening. I recall just one example - and it is probably the most absurd one to come my way since I have been in charge of the Luftwaffe. Just less than a year before the war they dared to demonstrate something to the Fuehrer and myself and state that it was a recognition device and was to be installed immediately in all aircraft. When German aircraft were approaching, our flak etc. would be able to identify them as such with the aid of this device. I asked if this device would be put into service quickly and was told that it would be fitted in all aircraft immediately. Now, four years later, we still have no aircraft equipped with a recognition device. The enemy has been using this device since the beginning of the war, but we have not. If our people have still not had any ideas I regret that I am not able to help them. You cannot get blood out of a stone. However, instead of being so arrogant, they should at least have set their hand to copying what the enemy had. At least I would then have a device by now, albeit of the most primitive type conceivable. It is a disgrace that we should still be without a recognition device for our aircraft in the fourth year of the war. This is the greatest scandal that has ever occurred in the aeronautical field. They are always bungling about with things, but can never agree upon a definite line of development, while even I, as the person responsible for the Luftwaffe, can see when this device could be produced in its crudest form. I am always being told about miraculous things, but on the basis of experience I can only say in all honesty that whenever I attend any demonstration or projects are put to me it always turns my stomach - I can assure you that - for I know that it is all only wishful thinking and God knows when it will be produced, and even if it reaches this stage it will certainly already be long obsolete. In my opinion there is really nothing more simple than a recognition device such as this, But we cannot manage it, we just cannot damn well manage it. At all events we are not getting it into the aircraft. You can go and enbalm your recognition device, for if I do not get it in my aircraft I will have nothing to do with it. The enemy navigates with deadly accuracy and far and deep into our land. He drops his bombs from above the clouds, in the clouds and below the clouds. He is always producing new radar devices. His aircraft fly in close formation at night and he holds his squadrons together. If I ask then if it may be assumed that the British have the device I am told: Yes, that may be assumed. We have also found a device, but have not yet perfected it. I have long been aware that the British have all these devices. What installations we do have can be jammed by the enemy every five minutes. Night fighter technique is still the same as a year ago and has not been developed in the slightest degree; on the contrary, successes are diminishing. We have not got the right aircraft for the job. This also applies in other respects. Always promises! If somebody comes to me and says we have here the Giant Wuerzburg and the Seeburg radar plotting table and are now building the Gigant and the Mammut and what have you, - well, I have not yet seen these new things and would rather not believe in them until I do see them. At all events I have only one thing to say now: enemy aircraft fly about over Germany as they please and only a fraction of them are located, even where there are radar installations. Something or other goes wrong with these installations every five minutes. I can only take the final product and determine what is fact. I observe that the enemy can fly around on a clear day such as this without even being seen or located. They also come over in the dirtiest weather and approach the target out of the clouds, fighters and all. However, not even our reconnaissance aircraft can get through any more as they are picked up by the enemy from the moment they take off from the French bases. This is really ideal organisation, but of course it is possible only because they have the equipment over there. Now I have been informed quite coolly that it is feared that the enemy has another new device with the aid of which he can

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carry out precision bombing through cloud as he can tell immediately if he is over buildings of any appreciable size. He will soon be able to tell whether it is a tank factory or an aircraft plant down below. They accept all this as resignedly as the will of God and when I get excited they say that we have too few workers! Gentlemen, we do not have too few workers, but too few brains to invent the devices which are required.

It is an absolute certainty that there will be a gradual increase in output. We have made every effort possible in this sphere. We have constantly fed more workers into the industry. However, the production targets demanded of the radar equipment industry are so idiotic that they can hardly be discussed. I can of course discuss only such figures as lie within the bounds of possibility and not of such proportions that whole divisions would have to be disbanded merely to supply the radar equipment industry with workers. The radar equipment industry will have to go over quickly to modern methods of production. I have often seen the sets. They do not appear to be so imposing; they are just wires, more wires and a bit of something else - the whole thing is really remarkably primitive.

I do not wish to speak about the Eastern theatre of operations as we are on absolutely equal terms there and are superior in some respects. Instead, we must deal with the enemy in the west and in this respect I simply have the following observations to make: today the enemy flies over the Reich at will to whatever depth he pleases and with an enormously heavy bomb load, whereas the range of our aircraft decreases with every year of the war. In 1940 my aircraft could fly on average at least as far as Glasgow, but this is no longer possible today. Ranges are becoming shorter and shorter instead of longer. I remember when the plans for the Ju 88 were submitted they drew me the most wonderful pictures showing how this machine would fly back and forth west of Ireland to attack enemy shipping, However, the aircraft has not once reached Ireland to this day. You must understand my unbounded anger. What was delivered is absolute rubbish. Ranges are becoming shorter and bomb-loads smaller. The most trifling things and the slightest modifications cause difficulties and delay the time taken to deliver aircraft, which is almost incredibly long. Moreover, aircraft are delivered in a half-finished condition and have to be completed when they reach the squadrons. Some new modification is necessary every five minutes because fresh defects are always appearing. That really is a fine kettle of fish for you! Our past achievements have certainly not been inconsiderable. However, at that time my outlook was different. Gentlemen, I must tell you quite frankly that it is as if an absolute stagnation had set in since the aircraft which we had at the beginning of the war were developed. Nobody has had any really new ideas. I will certainly concede that the Fw 190 could perhaps be considered as a very effective fighter-bomber. However, in this case too the side-tanks have recently been replaced by peculiar things which have reduced the speed of the aircraft to such an extent that the whole advantage has been lost.

The enemy has copied many things from us and then made a monkey of us. He first adopted the German ideas which came his way and then developed them extensively. You remember, gentlemen, that I spoke of the high altitude bomber and the high-speed bomber even before the war. At that time I offered tax-free million mark awards to designers and others who could produce something serviceable. Throughout the war I have constantly reminded them that high-altitude and high-speed bombers are two types which would give us a certain advantage again. For a high-altitude bomber I had to use the Ju 86, one of the oldest crates which were generally available for a few weeks to fill the gap. It carried a 50 kg bomb at certain altitudes. In the case of the high-speed bomber our people made it very easy on themselves; a bomb was slung under the fastest fighter and the high-speed bomber was ready. Now a fighter is not a bomber, but this did not bother them in the slightest. Only in this way could my repeated demands

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be fulfilled. With very few exceptions the projects which are in development are still things of the future and cannot be produced until the end of 1944, 1945 or 1946. Gentlemen, these are things which were being discussed even before the outbreak of war. I therefore conclude that in all these years you have not made any progress in this sphere either. In the field of jet propulsion too, everything was available before the war. At the time when I asked how soon the finished product would be ready I was told in eighteen months to two years. Now, on receiving really positive information, I understand that it will be ready in two years. That's what it looks like.

I now have to produce the means whereby at least some kind of counter-stroke may be delivered in view of the constantly increasing number of British bombers. Do not deceive yourselves, gentlemen; the British will carry out attacks with an ever-increasing number of these slow four-engined "crates", or whatever else I have heard them called, which some of you hold in such contempt. He will deal with each and every city. It makes no difference at all to him; he can navigate to Munich or Berlin with the same precision and he can reach Warsaw and Vienna. Nothing bothers him; he can manage it without difficulty. The night fighters are successful on some occasions and unsuccessful on others. The flak can only play a defensive role or have a deterrent effect. The endurance of the enemy aircraft is colossal. The equipment with which they have to navigate and hit the target even in bad weather is ideal, while our instruments are always going wrong so that the night fighters are always coming to grief and cannot do much about it. This, of course, is a severe strain on the entire war situation.

I have therefore decided to concentrate operations against Great Britain and to intensify them to the maximum degree, especially as the initiative in this matter has been taken by the Fuehrer himself. If I am, unfortunately, still obliged to leave the overwhelming majority of Luftwaffe formations in the East and South, the balance must be restored to a certain extent by other means; imaginative alternation of method of attack, the utmost exploitation of opportunities etc. I have therefore taken personal control of this matter and have selected a very young officer who in my opinion possesses all the qualities required to undertake this gigantic task. Moreover, I have offered this officer the fullest co-operation and support in technical matters in so far as the present increased consideration for front-line requirements will allow. Our standards of submarine warfare have reached their present advanced stage because in spite of all the restrictions imposed by the departments of the Ordnance Branch of the War Ministry, the Admiralty and industry, operational experience has had a directly fruitful effect and has produced the weapon required. This must also apply in the operations against Britain; the man himself must make demands as to how he requires his aircraft and what further development is necessary. All these demands made in the case of operations against Britain can also be applied in operations against Russia.

Unfortunately, there is one thing which I cannot change - the singular lack of progress in development. I have already told the Fuehrer that I am no designer or technician and therefore unfortunately cannot produce aircraft or develop engines and equipment myself. I can therefore only make the proposals which are necessary to at least create the basis for a further limited advance in development. Thus, as the situation stands, I must rely on the people who are here for this purpose and who have undertaken this task. However, I must once again express my extreme bitterness that so little has been achieved all along the line in this field. I do not know whether this speech will result in you gentlemen being shaken out of your lethargy to some extent so that something may at last be produced. Personally, I have no very great hopes of this as the lack of achievement has lasted too long and has become too ingrained. I do not know why you should get a great many ideas now after producing nothing for years on end. One thing is sure - and you cannot dispute it - and that is the absolute superiority in the technical development of airframes, engines and

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instruments, particularly radar instruments, on the part of the British and Americans. This is the only irrefutable fact and all the rest was no more than a lot of tripe which you were always drumming into my ears. I was always being told that this was being improved and the other was being produced. Now I know what has been produced. It is, of course, not only a matter of devising something new and better, but also of creating the basic conditions so that it may then be produced with the necessary dispatch and in the required quantity. At this point I should like to state most emphatically that I am rather more at ease since this matter was taken over by Field Marshal Milch with his outstanding powers of organisation. An enormous number of points have been clarified. Everything has begun to take on a definite shape again. I have dismissed the people who have been in control until now. Thus, I hope that there will now be an improvement. However, the Field Marshal is also not a designer and has just as little inclination to be one as I have. He can only fulfil his enormous task, that is to maintain the aircraft industry on a reasonably well-balanced basis, if support is really forthcoming from all sides. I have never hesitated and have always been prepared to give real achievement its reward and I will continue to do so in the future. On the other hand, however, if all else fails I will not shrink from making any changes in personnel which I or the Field Marshal consider necessary. I will do this whether or not it is in accordance with regulations. I am not going to be held up by minor details in this matter; you can rest assured of that. I cannot act otherwise. I would like to have said a great many fine things to you, but I have done that long enough. It would now be nothing more than falsity. The facts are as I have described them. I have considered and am still considering in all seriousness whether we could achieve our purpose most quickly merely by blindly copying the best British four-engined bomber. Admittedly the thing is slow, but it is also extremely stable and can carry a colossal bomb load. At the same time it has an incredible range. I cannot do much with what you are giving me at present. Even if the 177 is produced what am I to do with it? It can hardly get its nose past the hangar doors and cannot even reach Glasgow. The same applies to the 188. Even the fighters can reach London and I do not need your bombers for that. It is enough to drive one to despair! Year after year has gone by and you have plodded away at the same old things. First an engine is drilled out a bit more, but this again results in other disadvantages. Then the wing-tips are snipped off or something else is done. But a new aircraft which can really do the job does not materialise. Tell me the name of such an aircraft, I ask you! Perhaps we have one unbeknown to me. I know of no such aircraft or engine. I know only one thing: we have the 801 which, although it has not yet reached the peak of reliability, is nevertheless a really well-tried engine. Its performance is just short of 1,800 horse power. Even the 605's performance is not a great deal better than this. Although I now have an engine, it cannot be fitted in the 109 as the airframe is not strong enough.

That is how the situation stands. I deliberately put it to you in such clear and blunt terms. You can form your own impressions. The most absurd example is that of the recognition device, which is a problem that practically any amateur handyman would certainly have solved long ago. However, gentlemen, you always want to do things on an exceptionally grandiose scale. I would be content if the device were made with more modest materials and to a more simple design, for I would at least get it eventually. None of you gentlemen can contest what was said to me before the war. I can still name the place where the device was demonstrated to us. In any case the net result is that we have no aircraft fitted with a recognition device. Whenever aircraft approach we do not know whether they are ours or the enemy's. The enemy is never in doubt, and you will not dispute that either. All of his aircraft are equipped with a recognition device. Whenever I enquire I am always told that we have the recognition device. However, I am not interested in where it is but only in whether it is in my aircraft. But it is not in any of the aircraft, or is that not so General?

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Extract from Conference under the Chairmanship of
Field Marshal Milch on 6 July, 1943

MILCH: Herrmann I have already congratulated you. I was absolutely delighted that everything went so well. Is Galland here? - a pity, for I cannot tell him what I wanted to say to the fighters - that once they have made contact with the bombers the rest is easy.

HERRMANN: The subject in question is the employment of single-engined aircraft on night fighter operations. I do not think we are doing anything new, but are merely rather belatedly imitating the British, as this has not already been done by those in charge of night fighter operations. I considered the prospects of successful operations by this type of aircraft to be particularly good as it is highly manoeuvrable. There is also the fact that night fighter production is not making very good progress and an effort can therefore be made to cover this time-lag in subsequent years by using instead single-engined aircraft which are available in fairly large numbers. I made this suggestion to night fighter control six months ago, but it was rejected. However, I did not give up my plan to use single-engined aircraft at night and watched the attack on Berlin of 1 March, following the action closely at the Flakdivision's battle headquarters. I discussed this matter in detail with the Flakdivision and on 8 April again suggested to General Weise that I be allowed to begin with an experimental flight operating over Berlin. Permission was granted. I was promised four aircraft which I would lead in operations from a base at Berlin. The first operation took place just twelve days later, on 20 April. This was the attack on Stettin, during which Mosquitoes flew on to Berlin. Unfortunately, the Freya installations did not locate the Mosquitoes at the exact time so that the order to take off was delayed. The Mosquitoes were over Berlin at about 6,000 metres by the time my aircraft had reached 5,000 metres and contact was of course not made. After only twelve days it was evident that this was not the right way.

For some time there was no contact with the enemy over Berlin and I therefore took the aircraft to western Germany. Three days ago the first contact on any scale was made during the major attack on Cologne and, in particular, on Muelheim. In my estimation about 500 - 650 enemy aircraft, including twin-engined types, were involved. This number of aircraft is very high, even though twin-engined aircraft participated. Wellingtons were identified beyond doubt. We had twelve aircraft in the air and the only arrangement we had made was that we would co-operate with local flak. Cologne was not included in this arrangement. However, an attack was then made on Cologne. Some of our pilots did not know what the target was. I therefore hurried to Cologne and waited over the target. After the first contact with the enemy I was surprised that the flak did not cease firing at enemy aircraft picked up by searchlights. Our pilots pressed home their attacks splendidly; they even flew through flak to approach and shoot down enemy aircraft. This was a completely improvised operation. Down below they had no idea that we were over the target.

MILCH: They just kept on firing at you?

(Herrmann: Yes)

What did you think of the flak fire?

HERRMANN: The firing at aircraft caught by searchlights was well grouped. Single aircraft were also correctly covered. What was going on meanwhile where there were no searchlights cannot be put into a few words. I myself wondered what was up over the target. In

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the space of a minute you encountered ten or fifteen aircraft which you could clearly identify by the exhaust and catch up quite quickly in the single-seater aircraft. It is not at all necessary to attack only those enemy aircraft picked up by searchlights; instead, you need only fly around above the target-marker flares on suspicion.

MILCH: Was the exhaust of the British aircraft also easily visible?

(Herrmann: Yes!)

That is the first report we have had about this. It was always maintained before that they had got away with it by using 95% nickel. However, gentlemen, we must not relax our efforts. We must not take it for granted that the exhausts will continue to act as signal lights.

HERRMANN: At least the aircraft could also be clearly identified first as silhouettes, then by the exhaust; with the small single-seater aircraft it was possible to bank quickly and keep on the enemy's tail without difficulty. It is therefore only a question of the number of aircraft we can put up over the target if large numbers of enemy aircraft are to be shot down at this point where they are heavily concentrated.

MILCH: What type of aircraft did you fly?

(Herrmann: FW 190!)

And the other pilots?

HERRMANN: We flew 5 FW 190's and 7 Me 109's G4 and G6. The pilots with the 109's fly this type at night in preference to the 190; it is rather more manoeuvrable, especially at high altitude. At first we flew in echelon formation up to an altitude of 10,000 metres so that we could come down on the enemy very quickly.

MILCH: What was the average and maximum altitude and the formation of enemy aircraft?

HERRMANN: They flew at 7,000 metres or less, but the main force was between 6,000 and 4,000 metres. Later we went down from this altitude to between 4,000 and 6,000 metres and flew circuits round the target so that we might see the enemy aircraft more easily. As conditions were bad for searchlights - it was rather hazy - not many enemy aircraft were picked up, and when they were caught they were held for only a very short time. They were lost again within a few seconds, which was not quite sufficient for an attack, being only long enough for a rough fix on the target. You then flew in this direction and were able to follow up in the dark and shoot the enemy aircraft down.

The remarkable thing about this operation is that there should not be a limited number of aircraft in the target area; instead, any number of aircraft should be put in - the more the better - so that all the more enemy aircraft may be shot down. We made contact and fired on enemy aircraft 16 times and made contact without firing 17 times. For this first operation I had given specific instructions that pilots were not to open fire unless at first a correct target approach had been made.

Extract from Conference under the Chairmanship of
Field Marshal Milch on 25 August, 1943

MILCH: We must definitely decide on priorities. That means the 109, the 190 and the 110, which bears the brunt of night fighting. That is why

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I have said, in the case of the Do 217, for instance, that all aircraft requiring considerable outlay were to be put further down the list. Everything must be staked on the 110. Only the 110 in sufficient numbers can give us the necessary relief at night. Moreover, the 110 can also be used by day. Compared with other fighter types it has the great advantage of considerably longer range. After the raid on Regensburg, for example, the enemy bombers headed south, for Africa. Our T/E fighters pursued them to beyond Innsbruck and inflicted quite serious losses. That could not have been achieved with the 109 and the 190 because their limited endurance would have compelled them to land for refuelling and ammunition long before that. Thus the 110 is particularly important for both purposes. It has yet another advantage in that it is perhaps the most easy aircraft to adapt to high altitude work. We are very much afraid that enemy bombers will be appearing at very great altitudes above the effective ceiling of the 109 and 190. These types could reach such heights, but only for a very short time, just because their endurance is so limited. We are making every effort to develop a high-altitude type of 110 with the same basic engine.

I will take this opportunity to explain the basis of our policy. We are firmly convinced that our only chance of maintaining Germany's arms industry and labour lies in our hitting back at the enemy both by day and by night harder than before and above all harder than until a week ago. If we fail and the percentage of enemy aircraft shot down remains at the same level as up to the first half of July, we shall be crushed. I think it is idle to make long term plans for U-boats, tanks, aircraft and so on. Programmes of this nature can never be fulfilled; Germany would be brought to her knees.

There is only one remedy. That is for our fighters to hit the enemy so hard day and night that he is forced to abandon the policy of destroying our arms production. The chance is there. In the daylight raids on Regensburg and Schweinfurt our reports give 101 enemy aircraft brought down. We can show proof of these 101. As a maximum of some 400 machines were engaged on these operations, this is in fact a loss of 25%. This is the first time since the bombing offensive began that enemy losses have been so high. Our losses are between 60 and 70 aircraft, 27 of them total losses. It is clear from this that the struggle will not be without cost; and that in order to be strong again quickly we must first make a considerable outlay.

The raid on Berlin the day before yesterday cost the enemy another 60 aircraft, as far as we can estimate at present. I would further add that after the Regensburg raid some 120 or more enemy bombers flew to Africa, and in the course of their flight many were probably damaged and forced down. We cannot definitely claim such losses. But the enemy, who usually publishes his losses quite openly, was on this particular occasion extremely reticent. This is proof that the blow went home. So also is the fact that these daylight raids were not continued on the following days. Yesterday the bombers flew back to Britain from Africa but they avoided German territory, dropping their bombs on Bordeaux, where the weak defences cost them only one aircraft.

Enemy bomber losses in May and June amounted to about 4.4% of the total raiding force. In July there was a slight increase, the figure being 6.4%. It is clear that these losses are not enough to deter an enemy as resolute as ours. You know that the defence of our country is now in the forefront of our strategy. A large number of S/E and T/E fighter Gruppen has been brought back to Germany. In my opinion this is absurdly late in the day, but at last it has been done. Field Marshal Goering, too, is now bringing pressure to bear in this matter.

The enemy could not stand losses of 25-30%. If we could keep on inflicting losses at such a rate, the raids would have to stop. But our present rate of production is not up to such a task. Production

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figures for last month were 1050 S/E fighters and about 200 T/E fighters. At our request 50% of this output was to go to home defence. The request was not complied with. Strong fighter reinforcements were required on other fronts, notably in Russia and in the Mediterranean. Furthermore, 100 aircraft were drafted to front line operations by special order of the Supreme Commander of the Armed Forces. There is nothing more to say about that. The second stroke of bad luck is that as a result of the raid on five of our largest fighter works and our two largest repair centres, we shall be at least 150 fighters down on last month, even with no further raids being made. We are therefore about 220 fighters short of our actual programme. This is very serious.

My own attitude is this: I would tell the front that Germany itself is the real front line, and that the mass of fighters must go for home defence. During the winter we must do still more by bringing the programme forward: we will discuss this in a minute. The figure of 2000 fighters must be reached by the beginning of March instead of July - August of next year. The day before yesterday we reached purely on the constructional side an agreement with the whole of industry whereby those firms not engaged on fighter production are to turn out fighter parts. We have also arranged to disperse some of the work to small firms in places which are not obvious targets. This scheme at any rate will lessen the disruption caused by air raids. In the meantime our fighter works have suffered a production loss of about 25% through the raids on Wiener Neustadt, Regensburg, Warnemunde, Kassel, Oschersleben etc. Isolated damage at different places soon mounts up. Another onslaught on the same firms - and we must expect one - would mean more than another loss of 25%; it would bring the works to a standstill. We are doing everything we can with smoke screens, A.A. and the recently reinforced fighter defences in the South to relieve the aircraft and other industries. How far it will be successful, I cannot say.

I would also mention another figure. Of the 4.4 - 6.4% of enemy losses, A.A. is always responsible for something over 1%. That is the maximum which has been achieved by A.A. in home defence; and it is in contrast to the front, where other conditions apply, with aircraft flying lower. We have never exceeded this ratio. With the fighters it is between three and five per cent. Both figures are wholly unsatisfactory. But it is possible for the fighters' figure to be raised more swiftly, as is proved by Regensburg and Schweinfurt, and by the raid on Berlin. One must remember that there is more to it than the numbers brought down by us; there are also dead and wounded in the raiders that return and badly shot up aircraft which cannot be made operational again immediately. I have said that our losses in the raid on Regensburg amounted to 70. A certain number of these will be repaired. If we were on the other side we would only know of the 27 total losses.

Taking everything into account, it is clear that Germany is left with only one means of prosecuting the war to a successful conclusion, whether that conclusion be achieved by the breakdown of morale, material superiority, or tactical skill. There is no other way. You can set up five times as many A.A. batteries; it will make no difference to the figure of 1 - 2%. But if we put twice as many fighters in the air, the number of successes will be at least twice as high. If we have four times as many fighters, the number of successes will be at least four times as high. But if we shoot down at least four times as many enemy bombers as now - and that is no astronomical figure, about 700 fighters would be required, which is less than one month's output - then I swear that daylight raids would have to stop. And if our night fighter forces are expanded to the same extent, I swear also that night raids will cease. This would be the first step towards Germany winning the war.

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I am convinced that you all believe the same and that there is no other chance for us to swing the war back in our favour again. What always astounds me is that this is not fully comprehended by all alike. It seems so clear and simple to me!

If, for example, we could only knock Russia completely out of the war within a few weeks, - but I am a fighting man and fought in the last war and I can tell you that there is no chance of that in the near future. Russia will go under; of that I am convinced, provided we remain in possession of the Donetz Basin and the Ukraine this winter. The enemy will then be faced with three bottlenecks: food, coal and transport. These are Russia's only really vulnerable points. But the earliest date by which we can expect Russia to be completely defeated in the field - there will always be partisans to contend with - is the late spring of next year; as I have said, if we succeed in holding our position. As for the chance of our getting the British or Americans into a similar position, my own considered opinion as a fighting man is that such a prospect is unlikely. For this reason I feel that our proposals cannot be condemned as mere axe-grinding for the Air Force. Such would be far from my wishes. I am only anxious that we should have a first-rate system of home defence ready as quickly as possible. It would be possible in a few months, and it must be done. Then, I feel sure, we should be able to deal with other armaments projects which may have had to give preference to the aircraft programme.

Extract from Conference held under the Chairmanship
of Reichsmarschall Goering at Karinhall on 18 March, 1943

MILCH: Now one other point: navigation systems. There seems to be widespread confusion about this, especially where A.O. Bombers is concerned. I can see that from Goering's minutes. A.O. Bombers maintains that we have no navigation system at all. We have quite a number! And they are definitely not as vulnerable to interference as is generally thought.

I would ask that the Radar Commission clarify the matter once and for all by explaining which navigation systems are available, which can be adopted immediately, which aircraft are equipped with which, and what their various recommendations are:

(Von Lossberg: The main difficulty at the moment is the jamming of R/T).

But there, too, there are a number of possibilities. I would also ask that new systems not yet introduced be reviewed to see whether it is worthwhile carrying on with them and procuring the necessary equipment. Then we shall have a clear picture of where we are going.

I request that A.O. Bombers, who is the most interested party, and also the night fighter command be consulted so that these gentlemen can state their objections.

VON LOSSBERG: A.O. Bombers regularly attends all radar meetings. The equipment was developed in accordance with his requirements, more so, indeed, than we would have recommended.

MARTINI: A.O. Bombers is fully in the picture; he also attends the radio navigation conference every month. There must be some misunderstanding.

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MILCH: I myself was present when he told Goering that we had no navigation system and that that was why it was so difficult to find London in bad weather. I have read the Berchtesgaden minutes for 8 October; there is much confusion about the matter there also.

MARTINI: When a system is jammed, then of course it is difficult to find London. That applies to all radio measures; when they are jammed that is the end of it.

MILCH: But the question is, can nothing be done about it? In theory, nothing can! There is nothing which is not subject to interference. But there are procedures which are open to less interference or which one can change over to so that something comes through.

MARTINI: At the moment that means the H2S. All the others can be jammed relatively easily. But A.O. Bombers knows all that. He himself is Inspector of Navigation.

MILCH: If you read the Berchtesgaden minutes for yourselves you will reach the same conclusion as Goering; that is, that we have not got a proper navigation system!

(Martini: Goering is doing that to glean more information).

No, he is very concerned that there is none. We cannot develop twenty different new sets. We must definitely decide on one or at the most two which we think we can get by with.

(Martini: When we have one which is completely proof against interference).

But we are able to jam the British 3035! And still the British continue to use it as their principal navigation system.

(Martini: We cannot jam it everywhere.)

Nor can they jam ours everywhere. When I read what is down here and also your notes, Martini, I cannot help wondering whether such pessimism is justified. Goering makes an observation: we can do nothing but the British can jam everything. Then you say: yes, that is true!

MARTINI: The mainspring of my pessimism is always that we are unable to fly a radio listening watch over Britain. I am unhappy about that.

MILCH: I put in a strong demand for it yesterday. It is necessary. We do not want to drop bombs without previous reconnaissance.

MARTINI: The second reason for my being pessimistic is that I know that we have a very important job before us for which the manpower in industry and science is unfortunately just not there, with the result that the most important projects are always being retarded.

MILCH: But we must at least have one decent navigation system. I will admit that even that, however good it may be, could be jammed. There will never be one which could not be jammed at all. The best system will be the Berlin set when we get it. We shall not be receiving it in fairly large supply until the second half of next year.

(Martini: I suggest that A.O. Bombers make a report with me to the Field Marshal about it).

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If I were to pursue the line of argument in which you replied to Goering, I would draw the conclusion that there is no point in doing anything further in this field. Whatever we do will be jammed, therefore we might as well stop all work on the problem.

That is how I would react if you, as the senior specialist in this field, were to report to me along such lines.

One could also argue: every aircraft can be shot down, every fighter, even by quite a low-speed bomber. The Ju 52 has done it more than once. Therefore we need built no more fighters. That would be the same.

We must know which procedure we can find our targets with and I am convinced that A.O. Bombers is using one or other of these procedures.

(Martini: He is using them all the time.)

I am also not convinced that our people failed to find London because they had no navigation. They did not switch it on because of night fighters, then flew zig-zag and could not find where they were.

Even the old Knickebein is a system which in most cases still leads to the target.

(Martini: It is still being used.)

But the most diverse systems are being talked about; and every one can be jammed. Everyone should know this but remember that there is no such thing as a radio system which cannot be jammed.

(Martini: I am doing that.)

Goering thinks otherwise. He says quite openly that our fellows are all dunderheads! And the British can do much more than we can.

Now that may have been true for a while of a set such as the H2S. We know the reasons why we are not so advanced in our work. Also, we have not had the same assistance as the enemy. Now, however, much has been achieved by our measures to promote radio equipment. The selector set and the Berlin set have been brought out in a very short time. They rank as fine achievements on the part of Telefunken and Siemens. We must adhere to our course of building these sets for operational use. It is only distracting to hear it said "it can be jammed". We know it can be jammed. I am convinced that half the methods in use at the moment are not subject to interference when applied over a period of time. Naturally, if the same one is applied for a long time it is bound to be jammed one day.

MARTINI: At the moment a whole string of systems are being used alternately, and with repeated success. From time to time it happens that one is jammed and an operation fails.

MILCH: If we employ pathfinder tactics and repeatedly use different radio systems something is always bound to get through. The British cannot jam everything.

Judging by what I hear and by what I read in the minutes, I still maintain that the front line is not clear about what we really have got. Otherwise I do not understand the reports. The British have only one

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big procedure, the Gee System, that is jammed by us, although it is not jammed all the time. In the main the British do not deviate from this system in their raids and still succeed in reaching the target.

Yesterday I received a very interesting report containing a P.O.W. statement on the use of P.P.I. in the last attacks. They attacked Berlin and were able to pick out clearly first the lakes near Brandenburg and then those near Potsdam. The P.O.W., however, stated that H2S could not be used for navigation entirely on its own and that the actual homing on to the target had to be done by the Gee System. He said this quite openly.

(Martini: Other P.O.W.s have said that they are being jammed again).

Now in winter the British make extensive use of astro-navigation. We have as much as that over Britain as they have over here!

MARTINI: The British have the great advantage that they have a special navigator in the aircraft whose job it is to navigate from start to stop.

MILCH: But one must remember that the aircraft which the British use at night are no faster than our 111.

VON LOSSEBERG: The main reason is that the British can fly on a direct course because they put so many aircraft into the air. In that way some always get through.

(Milch: No, the mass get through).

And for pathfinding they employ 40 aircraft at a time, while we send out 2 to 4. We have nine navigation systems in all, which we employ alternately. At best there is one Staffel trained for each system, sometimes only a few crews. At that rate nothing much can be expected.

MILCH: That is what I am driving at. I want to prove that it is not a question of the technology. The technical basis is there but our training is not up to it; and training can only be perfected with operational experience.

VON LOSSEBERG: The main point is that it is easy for the British to concentrate on jamming the few aircraft which we can afford to employ as pathfinders. Also, the best system is of little use if our aircraft weave towards the target. For homing on to a target accurately it is essential to fly a direct course. We have systems for getting on to the correct course in two or three minutes. But one needs these minutes; otherwise precision bombing or accurate target marking are out of the question.

The system is not at fault; the trouble lies in communications.

MILCH: No, not there, but in a number of other places, in training etc. To avoid forming a false picture in the future, I should like you to ask what the various possibilities are and how individual navigation systems are assessed.

VON LOSSEBERG: With skill, in almost all systems something can be done with short transmission R/T and switching on for a brief period at the last minute to bring the aircraft on to the target.

MILCH: I request that you review the various systems and their possibilities and come to the following conclusion:

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First, steps must be taken to fly radio reconnaissance over Britain at last so that we get to know what the British have:

Second, crews must be well versed in these sets; the sets must be perfected:

Third, operations must be planned on similar lines to the British, so that opportunities for night fighter attack are curtailed and the number of targets which can be attacked in the short time, is kept as small as possible.

We must drive home the fact that it is not merely technology at fault, but every other thing. I am not thinking of taking the responsibility of technology on our shoulders. There would have to be recommendations for development of certain navigational aids.

Nordo I believe that our people are well versed in astro-navigation.

VON LOSSBERG: That is only of use in good, clear weather and when the aircraft is on a direct course.

MARTINI: And the man who does it is a special man.

SCHWENKE: I think that it is something else. We in Germany have more navigation systems than the enemy. Our astro-navigation is even better, from the point of view of equipment. It is important that training should be better and that a special man should be available for it.

The essential difference is that the British go by dead reckoning and that they do not call their means of navigation "procedures" but "aids to navigation". Their basic view is that all navigation must be made by the log book. They regard A.A. fire over a certain German town as much an aid to navigation as the Gee System. The unfortunate thing about the latter is that the enemy have just brought their equipment to a pitch where it cannot be jammed. But for four months they were unable to achieve perfect working. They can also fly without the set and that is the big difference from us. Our crews want to have a set which will do the navigation for them; the British do their navigation on their own.

MILCH: I entirely agree with you. It is a question of training the crews. Obviously any navigation system is only an aid, and not the be-all and end-all. But it must be mastered. If I require an aid I must first understand it. And that is not the case with us.

The result is that Goering has been given a completely false impression. I have seen it now in three conferences. What it boils down to is:

"Can we do it?" - "No".

"Can the British?" - "Yes".

"Then we are dunderheads".

I can understand why Goering comes to this conclusion: nobody tells him otherwise.

SCHWENKE: Recently a lone Mosquito nuisance raider was shot down. For navigation all he had on board was a "Gee" and an ordinary communications set, no astro-navigation and no H2S. He had flown from Britain on a course which headed 160 to 170 km north of Berlin. It was thought he was flying past; but when he reached the longitude of Berlin he turned through 90°

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and made direct for the city. That proves that this man could not navigate perfectly through the "Gee" but approached Berlin by means of dead reckoning at an angle.

MILCH: In Britain the first calling has always been the sea. And there there is nothing for it but continual dead reckoning. So the people have it in their blood. Our flying derives, as you know, from the Army and not from the Navy. The Army has no need for dead reckoning. They just look up at the nearest signpost, which shows them the way to go. That is not navigation: a bit of map-reading is hardly anything either. The result is that we have not learned it and it is not in our blood. But we should do, for flying has parallels only with seafaring and not with the Army.

SCHVENKE: I merely wanted to point that out because a third man was not necessary. The Mosquito is so cramped that there is hardly room to sit in it; and still they manage it.

MILCH: In Hansa night flights, which I have often experienced myself, the pilot was continually taking fixes. It was laid down in regulations and had to be logged and checked afterwards.

That is what is lacking in the Service. I would very much like to do this, and so we must be clear about it, otherwise we shall always be on the wrong track.

Extract from Conference held under the Chairmanship of
Field Marshal Milch on 23 February, 1944

MILCH: Gentlemen - I would first like to thank you for coming in spite of being invited at short notice. The matter in question is of very great importance to the Luftwaffe. We have just returned from a tour made in company with members of your Ministry to study industrial problems at various factories and to acquaint ourselves with the overall situation. I was very grateful for the participation in this tour of Herr Staatsrat Schieber and other gentlemen of your Ministry.

The result and impression of the tour was that the state of the most important factories - as we regard them today - is very strained to say the least. The factories in question are those producing single-engined and twin-engined fighters (day and night fighters). We inspected the various fighter plants and observed that, apart from a few raids on targets of other types, the air attacks of the last few weeks and months have been concentrated almost exclusively on single-engined and twin-engined fighter production and these attacks have been stepped up considerably in the last few days. Meanwhile, the BBC again announced that the destruction of German fighter factories was the primary British objective. Once the fighter plants were destroyed they would have the upper hand and Germany would be at their mercy. The other types of production would then be dealt with similarly and it would be a simple matter to carry out carpet-bombing in the American style at any given target and from any height desired as there would no longer be any defence. Moreover, they announced a few days ago that they had now commenced intensified air warfare.

We must face the fact that our fighter production has encountered difficulties since last July. For the first time our monthly output then exceeded 1,000 single-engined fighters and 150 to 200 twin-engined fighters, including night fighters. We were making considerable progress and were going to reach about 2,000 single-engined fighters and 250 twin-engined fighters in November. We did not succeed; instead, our output was

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constantly reduced by the heavy attacks which were directed first of all against Me 109 production. You are all familiar with the individual attacks and I need not go into detail. There were several attacks on Regensburg and Wiener Neustadt; both of these plants were producing 400 aircraft and would soon have increased this output. Then came a series of attacks on the FW 190 factories. These plants were hit again recently and attacks were also made on our night-fighter factories such as the Me 110 works at Lutter-Wiag in Brunswick and the Ju 88/188 factories at Bernburg, Halberstadt and Aschersleben. We inspected a number of these damaged factories. The only plant which had not yet been heavily hit, although it has been attacked once, is the Erla works at Leipzig, which is scheduled to produce about 450 fighters this month. It withstood the Saturday night attack quite well, but then this industry was very hard hit.

We should have reached a monthly output of 2,000 fighters by February. However, there is no prospect of this programme being carried through. Considering the present situation, we can be very content if we produce 1,000 to 1,200 fighters. For example, Junkers production of 365 aircraft (mainly twin-engined fighters) will be down by about 50% for February even if extensive assistance is provided immediately. The following types of assistance come under consideration: large numbers of construction companies or battalions, hundreds of trucks, replacement of material which has been destroyed or used in production. All of these are things which cannot be provided without difficulty. In addition, the Messerschmitt plant at Obertraubling has been heavily hit. Although the effect is not so catastrophic as that produced by the previous attacks or as at Erla now, it is still appreciable.

At most factories we had already dispersed plant in all directions. The Erla installation was perhaps still too close to the Leipzig area, but the other factories were much more widely dispersed. However, even dispersed installations have been hit.

If my conception of the war situation is correct, and one can examine it on the basis of normal common sense whether soldier or not, it appears that we are faced with the following situation. One of the enemy's spearheads, the strongest one in fact, is directed at present against the German homeland. The R.A.F. night attacks with random terror-bombing of city areas are aimed aimed at the morale of the people and thus at production. In these attacks they have never really had any other objective than the city area of Hamburg or Berlin or Essen. Occasionally their main objective may have been a large complex with factories such as Siemensstadt, as this is a city within a city. However, apart from such instances they have generally directed their attacks against the people with the openly-expressed intention of terrorising the population, reducing their resistance and, above all, of hitting the workers in their homes and by bombing them out not only deprive them of courage and hope but also compel them to leave their places of work or arrive late.

By contrast, the American daylight attacks with carpet-bombing (as we call it) are purposely directed against the factories which I have already mentioned. They are perfectly right when they say that as soon as this is achieved they can deal at will with other types of production such as tank, munitions, gun and vehicle factories without having to fear the losses being sustained at present. I consider this spearhead as the most dangerous threat to Germany at present.

The second spearhead is the Russian front. Smaller spearheads of less importance are the Italian front and then a landing which may be made at any given time and place.

The British have calculated exactly how many attacks they need to make on Berlin. The total may be twenty-five. They have already made fifteen attacks, leaving ten to come. Furthermore, they have announced that when they have finished with Berlin it will be the term of the central German industrial area.

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Halle, Leipzig, Dessau etc. have been named. These are all cities which are concerned not only with the aircraft industry but also with other types of production on an equal scale. There is only one counter-measure and that is day and night fighter operations. Let us not delude ourselves about the effectiveness of flak. We know that flak is necessary and that it definitely worries the enemy a great deal. We also know that it compels the enemy to maintain an altitude at which bomb-aiming is not a simple matter. However, the enemy has overcome the problem of high-level bombing. At night a city such as Hamburg or Essen cannot be missed and by day the Americans carry out bombing exactly as we do with excellent optical aiming equipment with which any target can be hit. Each of you knows how well the bomb-carpet usually cover the target area and that the enemy cannot be impeded to any appreciable extent by flak. Fighters, therefore, are the only counter-measure to come under consideration. Flak and smoke screens must still be used as much as possible as secondary counter-measures. However, smoke is no remedy as the ground scanners used by the Americans and the British and now by us as well can see through clouds of smoke of any density and show up the target clearly. We need more and more fighters; day and night fighters, long-range fighters and twin-engined fighters with heavy armament. The only differences are heavier armament and longer range on the one hand and greater manoeuvrability and altitude and easier handling on the other. The one fighter is cut out for daylight operations, the other exclusively for night operations. However, in view of the present situation, we would also employ day fighters by night and night fighters by day.

Our production again reached the target of 1,000 fighters and increased to as many as 1,300 last month. Some of these were sent to the battle fronts as ground attack aircraft. The German aircraft carrying out ground attack operations every day at Nettuno, for example, are fighters carrying bombs. These have still to be deducted from the total. In December output was under 600 aircraft, the bad weather being partly responsible. Some of December's overlap was completed in January, so that the output of 1,300 aircraft does not represent a true month's production.

If all goes well, I expect 1,200 to 1,300 aircraft to be produced in February. However, I must expect that instead of reaching 2,000 aircraft, output in March will decrease, probably to less than 800 aircraft. The attack on Erla will cost us about 350 aircraft, that on the Messerschmitt plant perhaps another 100 to 150 aircraft and the one at Wiener Neustadt certainly a further 200 aircraft. The full effect of these attacks will not be felt until next months or the month after. Thus, even if nothing further happens, we cannot increase output again until May.

At present about 800 fighters can be mustered for daylight operations throughout Germany. The enemy has now worked out a procedure aimed at dividing our forces. Enemy aircraft approaching from the sea make a feint incursion, turn back and return until our fighters arrive. Then another formation appears somewhere over the North Sea heading in the general direction of Kiel or Hamburg; a little later an incursion is made from Italy in the general direction of Styria, the Vienna area or Munich. When all our fighters have been sent up against these objectives a large formation from the west suddenly appears and makes for central Germany. We experienced the most remarkable instance of this procedure last Sunday. There actually were incursions from the south and north and every available fighter was sent up to meet them. After the fighters had completed interception operations and could not have taken off and intercepted again, large formations approached Leipzig and encountered no fighters apart from a few aircraft from factory defence flights. These formations met practically no opposition. Everyone must have been surprised at the light enemy losses in this attack, but we were taken in by this feint. Fighter control could not be blamed at all, as it could not have foreseen the manoeuvre. On this Sunday the enemy

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attacked in greater strength than ever before. Yesterday, of course, everything went very well and the enemy sustained very heavy losses. On the basis of accurate information and reports submitted to us, the OKW figures for enemy losses can be increased by 70%. Such losses will put the enemy in a very difficult situation. Four-engined bombers are produced at a monthly rate of 800 to 900 in Britain and between 1,100 and 1,200 in the United States. A loss of 200 aircraft in one day represents more than three days' production. However, attacks are not made every day. The enemy also suffered heavy losses in recent night attacks as particularly on effective radar equipment such as the Lichtenstein SN-2 etc. made location easier than hitherto. However, our production has been very seriously affected. Production of night fighters capable of carrying the SN-2 will be down to less than 50% for at least two or three months. This is a very serious loss as not all of the other types are suitable for night fighter operations.

The effect on our day fighter production has also been very severe and we are faced with great difficulties. If you go into a fighter plant - I have seen Erla-Leipzig and Oschersleben - there is nothing to be seen but bent wires etc, like a bombed block of flats here in Berlin. Outside there are bomb craters eight to nine metres deep and between fourteen and sixteen metres across. Bombs are dropped in carpets and most of them fall within the target area. The aircraft fly over the target one not more than three-quarters of a wing-span behind the other and when the lead aircraft drops its bombs all the others follow suit.

As the officer responsible for supplying the Luftwaffe with aircraft, I therefore consider that decisive measures must be taken as we can no longer continue by normal means. At the factories there are no labourers to clear up rubble and no builders, although in many cases resumption of production depends only on rebuilding a couple of walls or supporting girders. However, these plants have hardly any trucks. Requests to local authorities have no result whatsoever. From what I have seen, in spite of the best of intentions both the civil and military local authorities appear to be more or less helpless in this situation, which can become absolutely overwhelming. They do not know what to do. They cannot give assistance as they have no trucks or petrol. Yet Germany could be extricated from the dangerous situation produced by these air attacks by means of ridiculous trivialities, measures which amount to less than one per cent of our total effort. The struggle is not hopeless; it can be managed.

According to the programme, we should have reached a monthly output of 3,000 fighters by the end of the year. As far as one can say today, the materials, workers, industrial potential, machines etc. are available. There are of course certain deficiencies, but we are all aware that these do exist in industry. If we could succeed in approaching an output of 3,000 aircraft, of which a certain number would be allocated to the fighting fronts as ground attack, reconnaissance and fighter aircraft, there would remain a fighter force which would be in a ratio of at least 1 : 1 to the combined Anglo-American fighter strength which can be raised in Europe instead of last year's average ratio of 1 : 6, improving to 1 : 5 at the end of the year. With this number of aircraft and the improved methods for bad weather and night flying, the Luftwaffe would be able to carry out operations by day and night, reducing the strength of enemy attacks to a level which would no longer be overwhelming. However, I would like to make it quite clear that attacks and incursions will still be possible. There is no way of preventing a determined enemy, however inferior, from making occasional incursions into the Reich. However, if the losses are always as heavy as in some daylight attacks, for example at Schweinfurt or in yesterday's raid, as well as in a number of night attacks, I am firmly convinced that enemy activity would die down.

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One thing is clear: the question of enemy incursions does not depend on how many aircraft the enemy has or how many aircrews he can train. There is only one way to deter enemy attacks and that is to inflict such heavy losses that the aircrews' morale can no longer endure than, and, according to what the British say, this point will be reached when losses are approximately ten per cent. A dangerous situation will already exist when they rise above five per cent and at ten per cent operations on the present scale will no longer be possible.

We have also had the same experience. In 1940 our daylight attacks on Britain had to be discontinued as losses were too heavy, although we could still have maintained them for some time if it had been only a question of the number of aircrews or aircraft available.

We must therefore weaken the enemy's morale to such an extent that he can no longer stand the losses. Heavy losses must be inflicted every time operations are ordered by the political leaders, who are much more callous than their military counterparts. There will then be some prospect of deterring the enemy from making attacks.

Personally, I would like to suggest that you look at Berlin; it will then be obvious that what has happened in the last few months cannot be endured indefinitely. It is out of the question. Once the principal cities have been destroyed it will be the turn of the smaller cities. This same terror which is now destroying Berlin in a given number of operations will then knock out five or six cities the size of Brunswick or Hildesheim in a single operation. The occasional failure of a whole attack for some reason or other is of no consequence whatsoever. The next one will be all the more effective and so much the more damaging to us.

I wished to restate all the facts in detail, although they are all known to you, in order to lead up to the reason why I have called you together. I have a great request to make to you. Owing to his health, Minister Speer cannot discuss this matter with me at present, as would otherwise have been the case. I visited him a few days ago and will do so again this evening. However, the doctor expressly requested me not to discuss official business with him.

As the Minister himself cannot be heard, I had no alternative but to call together his closest collaborators and speak with them.

My proposal is that we set up an organisation for the single-engined and twin-engined fighter programme to operate in the same way as the Ruhr Staff, which has been so successful. This organisation was established by Minister Speer as Minister for Armaments and War Production and was put into the hands of particularly suitable men. The attacks on Berlin and central Germany during this period brought a comparative lull to the western area, giving time and opportunity to make extensive repairs by virtue of extremely energetic action on the part of both the central organisation and local departments of the authorities concerned. Naturally, the forces which were employed were not kept waiting about for work, but had to be moved around from place to place. However, we are all of the opinion that it was perfectly correct to do this. It is a matter of indifference whether or not more defences are being set up in Norway if the homeland is being destroyed in the meantime. In my opinion it is also a matter of indifference whether another gun more or less is dug in on the Atlantic coast when one can say with certainty that one day, a few days after the Luftwaffe has been annihilated, it will no longer be possible to move these guns into position as no more trains will be running for there will no longer be any lines over the Rhine, Weser, Elbe or Oder. This must be taken into consideration and borne in mind.

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I therefore believe that it would be correct and worthwhile to set up an organisation for the production of single-engined and twin-engined fighters which would not be a copy of the Ruhr Staff but a similar organisation on a smaller scale. I would further propose that the Minister be requested to create such an organisation and nominate a director. We are prepared to provide the director ourselves. Furthermore, the quickest possible methods must be initiated to carry out necessary dispersals of plant and repairs in so far as they are worthwhile and possible. We can estimate roughly the total number of construction workers, allocations of material, vehicles etc. which will be necessary for this purpose. Quite frankly, I believe that this whole plan will be on a considerably smaller scale than the Ruhr operation.

Before I initiated this plan, I wished to turn to you as comrades and in personal confidence in order that you might tell me whether, as the representatives and colleagues of my friend Speer, you would really support and approve this undertaking in the light of the exigencies which I have described to you. However, it must be expressly understood that all other workers, whether engaged in Army or Navy armaments production, in the supply of power or water or in the building industry, must also consider this effort as the most pressing need of the moment and even as a last-minute bid. I consider it essential that this plan be carried through until parity (in fighter strength) is reached. There is little doubt that this can be achieved if we are left in peace now and have the strength.

That is my question and my request to you. If you agree with me that this should be done, I will do my utmost to carry out this programme for our Fuehrer and people. I can see no other way than this for Germany.

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