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GERMAN AIR FORCE POLICY DURING THE 2nd WORLD WAR. - A MEMORANDUM TO THE S.S. AND S.H.A. FROM ENGINEERS AT THE RECHLIN AIRCRAFT EXPERIMENTAL STATION.

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R E S T R I C T E D

GERMAN AIR FORCE POLICY DURING THE 2ND WORLD WAR. - A MEMORANDUM TO THE S.S. AND S.H.A. BERLIN* FROM ENGINEERS AT THE RECHLIN AIRCRAFT EXPERIMENTAL STATION

Rechlin, 15 August, 1944.

To the Germans, on a scale unknown to all other nations, has been granted every prequisite for retaining the lead in aerial warfare. These prerequisites are as follows:-

(1) A command with the utmost fixity of purpose and no thought of surrender. This factor indeed constitutes the firm basis necessary for the development of all further measures.

(2) A large number of technicians of the highest ability, who are at least the equals of their foreign counterparts.

(3) A labour force to whom strikes are absolutely inconceivable.

(4) A home country ready for any sacrifice or toil.

(5) Until only recently the industrial resources of almost the whole of Europe.

(6) The fact that to an unprecedented extent direction can be given from one central office.

If, nevertheless, the German air armament industry has failed in a disastrous manner, this can only be attributed to the gravest errors on the part of the Command.

The German Supreme Command's underestimation of the importance of the Luftwaffe as compared with the Army and the consequent inadequate allocations of material and labour is often given as the principal reason for failure in the past few years.

This reason doubtless has its place, but is not decisive. The main reason is the lack of leadership and confusion arising from the fact that the means given to the Luftwaffe were used with minimum effectiveness. A well-known Rechlin engineer recently wrote the following:-

"If it were possible to write a factual and objectively correct report on technology in the Luftwaffe during the past few years the whole thing would be regarded by the layman even now and more than ever by the reader of the future as a satire produced by a morbid imagination, for nobody would seriously believe that so much inadequacy, bungling, confusion, misplaced power, failure to recognise the objective truth and deviation from the reasonable could really exist.

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* This is probably meant to be the the R.S.H.A. (Reichssicherheitshauptamt or Main Office for Security in the Reich and Occupied Territories). It is difficult to understand why this memorandum was addressed to both these bodies unless the authors, uncertain of the correct channels of communication, meant it to reach Himmler himself, who was head of both the S.S. and R.S.H.A. and was thought to be attempting to undermine Goering's authority at that time.

It is clearly evident that such phenomena are now at the peak of their development; indeed one has the impression that matters, guided by a diabolically masterful hand, are reaching a climax in which anarchy will be a recognised fact and chaos the trade-mark of an organisation and a situation, which can be redeemed by absolute discipline and clarity alone."

The catastrophic confusion of demands, methods and orders described above would be explicable in a country in which the interests of private capital override the power of state, as is the case for instance in the U.S.A. It is however paradcxical that in this selfsame country where capital reigns supreme, the Air Force organisation is appreciably more purposeful than that which exists in Germany, where, as one is led to believe, the government possesses every legal means to ensure that demands made in the general interest are in fact put into effect. Thus, the reason for this chaos is not to be found in the political system, that is to say the type of gevernment, but in the building up of personal interests in the political field. It was and still is a fatal error to make service personnel responsible for the technical side of the air armament industry. It is clearly evident that the German air armament industry retained the lead as long as its development was guided principally by technicians. The first mistake was made when Udet was entrusted with the duties of Director General of Air Force Equipment. Nevertheless, even in this case a relatively feasible procedure was evident, since Udet still received the direct assistance of a number of technicians. Following Udet's death the collapse of the German air armament industry was accelerated to an extreme degree by Goering's order that the most important technical posts in the Luftwaffe were to be given chiefly to servicemen with operational experience. In addition to this there is another fact: the technicians working in the principal technical departments do not represent the elite of the German technical world. There is no doubt that the majority of our best technical brains in the field of intellectual productivity are to be found in the universities and in industry. The reason for t is is to be sought not only in the a ppreciably higher remuneration offered by industry but, at least to an equal extent, in the fact that the engineers take second place to service officers and, in contrast to the procedure in universities and industry, are denied positions of real authority in technical departments. Those engineers in industry, who were supposed to be guided by their professional colleagues in the technical departments, often turned out to be their intellectual superiors and played cat and mouse with them, especially when they noticed that the superiors of the latter did not intercede for them in difficult situations.

These conditions and the fact that the engineers in technical departments were then replaced by servicemen of appreciably less ability soon brought to light three major blunders.

(1) Lack of Vision in the Technical Field

(a) It is self-evident that the soldier is capable of developing only in the way in which his faculties permit, that is to say on the basis of past operational experience and not through appreciation of future trends derived from technical training. The most promising technical ideas are not understood and either receive only incidental attention or else are rejected outright. Udet prevented any development of the high-altitude aircraft with the argument that "high-altitude flying is uninteresting and is quite out of the question."

(b) The importance of the radio-location technology (shipping location devices etc.) offered by engineers was not recognised until the British achieved important successes by this means, as when, for instance, they paralysed the entire U-boat campaign with the shipping location equipment of their Air Force.

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(c) Remote-controlled bombs, which could have meant an absolute revolution in the conduct of air warfare, were rejected as technical tom-foolery or else merely received superficial toleration.

These examples could be continued at will.

(2) Complete disregard of even the most elementary principles of systematic production

The fundamental principle of any systematic production lies in the selection of the most promising project from a number of competitive ideas and subsequent concentration on the production of this alone. Any search for an example of this basic principle of production being taken into consideration in the Luftwaffe will be in vain. On the contrary, in the effort to satisfy the "demands of the service" completely, a huge number of sub-series was turned out and this was accompanied by insane sub-division into individual production series.

Furthermore, confusion reigned instead of rational organisation. Everybody produced everything. One might imagine that in a controlled economy each aircraft company would have allocated to it a specialised task. e.g. Messerschmitt the building of fighters, Junkers heavy aircraft, Heinkel medium bombers, Arado transport aircraft etc.

Instead of this every company strove for representation in every field of aircraft construction. Messerschmitt produced not only the 109, 163 and 262 day fighters and the 110, 210 and 410 heavy fighters, but also completely different types such as the 321 super-heavy cargo glider, the 323 (Gigant) super-heavy transport and the 264 super-long-range reconnaissance aircraft and bomber. The same situation existed with Focke-Wulf, which produced the 154 night fighter, the 200 (Condor) long-range bomber and the 400 as a rival to the Me.264, both of the latter aircraft being intended for a completely different purpose. Moreover, Focke-Wulf even produced the 189 reconnaissance aircraft and the 44 trainer. It would be superfluous to give an account of similar examples at Junkers, where the multiplicity of different aircraft types is even more startling. The same situation exists at Heinkel, Arado, Dornier, Henschel etc.

These conditions also apply to every other branch of production - to the engine industry for example. Instead of one engine being decided upon from a number of rival projects for use in full-scale mass production, three equally powerful types are being produced simultaneously in this field as well - the BMW 801, the DB.603 and the Jumo 213. It would be beyond the reach of the imagination to conceive the extent of increased production and the simultaneous economy of material, machine tools and labour which have been achieved if the fundamental precepts of large-scale mass production had been taken into consideration and how advantageous an effect such a radical simplification would have had also on storage, supply and maintenance in the field. The objection frequently raised in this issue that one should not put all one's eggs into one basket owing to excessive vulnerability to enemy action is short-sighted and stupid. The exact opposite is true, for the production of only one type means that work can be carried on not merely in one plant but in several plants, each of which is today turning out its particular type for the same purpose.

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The following striking example is provided by the aero-engine industry: Today every aircraft type is dependent on one particular engine, which is mainly produced in one place. Should the supply of this engine cease owing to enemy action, airframe production will also be most seriously affected and will similarly be halted for some time. If however all airframes were adapted to take the same engine, a breakdown in one sector of engine production would merely mean that although concellations in airframe production would be necessary, these could nevertheless take place where they would do the least harm.

(3) The third decisive reason for the downfall of German air armament is irresoluteness and an indescribable lack of consistency.

Hardly a decision has been made which has not been countermanded at least several times before a fresh decision was reached. There are innumerable examples of this practice.

There was no possibility of reaching a decision to cancel production of the Ju.288, which was undergoing development and later ordered for mass-production, but a gigantic staff of designers and first-class specialists was allowed without further ado to work at full pressure for more than four years. Finally, after production had been cancelled several times, preparations for full-scale mass production were allowed to be carried out. Then, when millions of man-hours had been expended and colossal quantities of valuable semi-finished material and special plant had been assembled for this project, production of the aircraft was cancelled once and for all. After five years of the most intensive effort all those who had been concerned with this project were obliged to conclude that they would have been more use to their country if they had done nothing the whole time, since then they would at least have avoided depriving the war production effort of valuable material, not to mention the huge expenditure of machine-tools etc. The cases of the Do.217 and He.177 are similar; both of these aircraft were already in mass-production but, once again, no decision could be reached and they were finally cancelled. In the case of the Do.217 a combat-proven aircraft was displaced to allow the commencement of production of a new machine, the Ju.188, although the latter was in no way decisively superior to the Do.217. The same thing applies to the Ar.240, Ju.352 etc. Just as aircraft types were affected on a large scale, aircraft equipment and installations were also involved to a certain extent by this foolish irresoluteness. The final reason for these three major blunders is to be found in the fact that in industry technicians of consequence are conditioned to the ways of private capitalistic undertakings, that is to say occupying positions which are of no importance when considered from the point of view of the undertaking as a whole, whilst the principal technical posts are held by officers who are amateurs or else by engineers whose spirit has been broken by years of mishandling.

The failure of technical air armament has been evident for some time. Efforts to counter-act this failure have taken the form of continual reshaping of organisation, but this method has not succeeded in striking at the root of the trouble. The decisive factor is not the type of organisation but the men behind the organisation, and these have not been changed.

As a result of the affairs of the Director General of Air Force Equipment being partially taken over by the Speer Ministry, there is no doubt that new personalities and ideas, and above all, a group with unprecedented powers came into effective being in the field of air armament. Thus, the advent of Saur with dictatorial power to make decisions which would never

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have been possible before gave considerable impetus to large-scale mass production. Saur radically reduced the number of aircraft types and, quite correctly, intends producing only a very limited number of types in future, but at full-scale mass-production rate. As has been said, the objective is correct. It is however extremely difficult to find a way of emerging from the present state of multiplicity of production and of reaching the ultimately desired state of production. Once again the danger lies in the men now in command. Almost all of the men around Saur come, like Saur himself, from tank construction and other industries foreign to the Luftwaffe. The whole Luftwaffe production set-up is strange to them and in making decisions Saur is obliged to fall back on advice and representations from the very people who were previously in control and failed. Thus there is extreme danger of further blunders in spite of the appearance of new personalities and the correct ultimate objective. Such blunders are already apparent everywhere. Owing to his lack of technical knowledge and experience of Luftwaffe production, Saur is unable to to arrive at carefully-considered decisions. Again, in this case two examples may be briefly given as follows:-

(1) In the course of about three months the Do.335, which was originally intended as a bomber, has already been reclassified as follows:- bomber, reconnaissance air-craft, day fighter, heavy fighter and night fighter. Only those who are informed of decisions made last week can know the present classification which has been planned for the Do.335.

(2) The Hs.293:

The men at present in charge of the air armaments industry have completely failed to recognise the vast importance of remote-controlled bombs to Germany's conduct of air warfare. The men in positions of decisive importance have not taken note of the operational results, which show that 40% of the bombs used against the enemy scored direct hits in spite of the fact that this weapon has been in operational use for only a very brief period and that these results were achieved under the most difficult operational conditions. The action taken following the Reichsmarschall's order for the immediate suspension of all further work on remote-controlled bombs included the scrapping even of those bombs which had been 80% completed and the reconversion for terror attacks on London of those aircraft which had been fully equiped for dropping these missiles, with the result that now not even practice bombs are available to formations still assigned to operations with this weapon.

It is now fairly usual in the German armaments industry for finished products leaving the factory at one end of the assembly line to be immediately scrapped at the other. Examples of this practice are the 177, as already mentioned, the TK.9 or TK.11 (exhaust turbine for high-altitude engines) etc, etc.

If our fronts are able to hold fast for another six or twelve months it may be possible to make up the leeway again in the field of air armament provided that now no further mistakes are made. Present conditions however give rise to the fear that not only will further mistakes be made, but that they will mount up to a catastrophic extent. There is only one way out of this situation; the foremost specialists in the field of Luftwaffe

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technology must be brought in immediately to provide cooperation of decisive effectiveness. The German officer must no longer be allowed to fight against the British and American engineer: instead, the German engineer must take up the fight against the enemy's technology with all consistency. These men must be able to carry out their technical thinking along tactical lines and must also be so familiar with the whole of German industry and its problems that they will not require time to settle down to their task. Today, it is clearly no longer possible to put men in control who gain their experience only after first committing a series of blunders. We can afford no further mistakes. Before all else however, these men must have complete freedom from any obligation to capitalist and industrial interests. This demand cannot be overstated. They must be placed in the positions of authority at present held by amateurs or allocated as principal advisers to men who are fundamentally correct in their demands but do not yet possess the specialised knowledge required at this critical moment (e.g. Saur). Men such as Baade, Dr. Voigt, Prof. Book, Franko, Reidenbach, Knomeyer, Forchers etc. come to mind in this respect. Above all, however, the present chaos in the field of competence and responsibility must be brought to an end immediately, a person with unequivocal responsibility and absolute power must be appointed to take control of industry and technicians thinking along tactical lines must either be put at the helm themselves or at the disposal of the person with overall control.

The principles by which all procedure must be governed will be recapitulated hereafter. At the same time it should be emphasized that of late the necessity of adhering to these principles has already been realised to a considerable extent, although this realisation has not brought with it the necessary action on an adequate scale. These principles are as follows:-

(1) The immediate replacement of amateurs in key technical posts by our best specialists.

(2) A drastic limitation of the types of aircraft and the simultaneous creation of a basis for maximum mass-production.

The only possible way of increasing output in spite of continual enemy bombing attacks is by the most radical reduction of aircraft and engine types to a very limited number and their production in plants which have been evacuated and are, as far as possible, bomb-proof. The selection of these few aircraft types would have to be the subject of thorough but rapid consideration. Orders to this effect would then have to be issued immediately and ruthlessly enforced. In view of the present technical and tactical situation this selection should not be very difficult. A most extensive reduction in the number of aero-engine types is also necessary, the ultimate objective being one conventional engine (the Otto engine) and one turbo-jet engine. The whole of Germany's aircraft and aero-engine industry should be committed to the production of this very limited number of types. The increase in production attainable by this most drastic reduction in the number of types would be extremely great and at the same time supply and storage etc. would be simplified to an enormous extent. Specialists would be freed and the task could immediately be given to them of re-organising and evacuating factories and making them really safe from attack. Production of cancelled types would be wound up immediately and at the same time reorganisation for production of the standard type would be introduced in stages. Given reasonable organisation it should be possible to keep production losses within bearable limits during the

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conversion period. The resistance which will naturally be offered by industry must be ruthlessly disregarded and the necessity for this action will ultimately become apparent to industry itself.

(2) The Safeguarding of Production against Air Attacks

Discussions with people in industry constantly give the impression that the necessity for immediate measures for safeguarding against air attacks are often not completly understood and are carried out with criminal slowness. The most ruthless action is also necessary in this case. Wherever underground working is no longer possible owing to lack of time and labour, factories must immediately be widely dispersed and, if necessary, transferred to temporary buildings in the forests. The answer to the objection most frequently raised against dispersal today, namely that this will result in production losses, is that by ruthless restriction to a few types as demanded a tremendous overall increase in production could be achieved.

Indeed the drastic reduction of types is in itself a means of safeguarding against bombing attacks. This factor, which should not be underestimated and will make itself apparent very quickly, for the loss of one of a number of factories producing the same type is not as serious as would be the case if the factory destroyed were a key installation upon which a number of other plants were dependent. (Modifications which can possibly be avoided can no longer be allowed to interfere with a mass-production project thus commenced).

(3) Consistency in Maintaining Decisions

This long-standing requirement must be turned into an uncompromising reality. Modification is the death of mass-production. Foreign workers trained for the task in hand can provide work of first-class quality if aircraft can be produced unmodified in their tens of thousands. If however changes in the production system are constantly necessary after each group of 50 aircraft has been turned out, the result is an insatiable demand for trained specialists and a situation in which we can attack with a flight while the Americans can put up a wing.

This demand however is aimed primarily at preserving the production projects themselves. There must clearly be no further reversal of decisions on production projects once they have been made and when they have received really thorough consideration beforehand. Each new decision to undertake a production project has set in motion an army of our best technicians, organisers and specialists, whose work simply vanished into thin air when this decision was rescinded. The damage caused by this senseless vacuum and the exorbitant wastage of material resulting from the repeated reversal of decisions is indescribable. It is always far greater than the damage caused by the carrying out of a decision which, although not perfect, contains no downright stupid errors.

Today no trace of confidence is left in the stability of decisions which have been reached. There is no longer any concern whatsoever as to whether a decision is good or bad since it is absolutely certain that at the latest it will be countermanded within a fortnight. No adequate description of the stupidity of this fact can be given to match the reality which is encountered every day. Indecision only is consistently maintained and this always with the watchword that we

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must improvise more. We are improvising ourselves to death while our lifeblood is being systematically drained away by the enemy.

(4) New developments in aircraft and turbo-jet engines continue independent of this programme, but in this field also limitation to a very small number of models is of the utmost importance.

Nevertheless the mass-production of a new development should not then be undertaken as additional to an earlier series, but should replace it in such a way that the number of aircraft types in production does not begin once more to increase to excessive proportions.

(5) Irrespective of this basic re-organisation of our production, improvisations must be undertaken with maximum effort and speed in order to provide the breathing space which we need to put fundamental measures into effect. If however these measures are to lead to the intended result and there is to be the possibility of an appreciable easing of pressure on the fighting fronts by a restrengthened Luftwaffe they must be settled and carried out as soon as possible. Everything is dependent on the orders issued by the Fuehrer.