

ITEM NO. 25.

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**SPARE PARTS AND PROVISIONING  
IN THE G.A.F.**

**COMBINED INTELLIGENCE OBJECTIVES  
SUB-COMMITTEE**

SPARE PARTS SUPPLY AND PROVISIONING IN THE G.A.F.

Reported by:

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CIOS Target No. 25/533  
Aircraft

COMBINED INTELLIGENCE OBJECTIVES SUB-COMMITTEE  
G-2 Division, SHAEP (Rear), APO 413

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This report results from the interrogation by T.I.I.C. in the U.K. of three officials of the Chef T.L.R.'s department (Technical Air equipment) namely Oberstingenieur Helmut Cordua, Chief of the Sub-section Supply; this officer's right hand man one Hauptingenieur Offenhammer and Hauptingenieur Andros. Chief of the Sub-section Quality Control.

The interrogation was arranged through the aegis of A.D.I.(K).

### I. Spare Parts Provisioning.

Aircraft spare parts provisioning was originally in the hands of the RIM (German Air Ministry) but in 1941 and 1942, large surplus stocks of spare parts were accumulating at various stock piles and depots throughout Germany. Authority for the provisioning of spare parts and the maintaining of proper stock levels was therefor turned over to the respective aircraft companies during 1942. A team, composed of spares engineers and quality control representatives of the company, together with a qualified officer from the GAF front line depot, would meet to determine the types and quantities of spare parts to be selected. This was generally done at a time when the "Zero" group of aircraft were being constructed and before actual production was commenced. It was stated that the aircraft representatives were able to convince the GAF officer that he need not bother too much with actual provisioning, that the company would be glad to relieve him of this chore and he apparently willingly agreed.

This resulted in the company over-provisioning to such a degree that in August 1944, upon investigation by the newly formed TLR (Technical Air Equipment), it was found that over 600,000,000 M worth of spare parts were then on hand, a considerable quantity of which were outmoded and of no value to existing aircraft. An example cited by Cordua was that of Aircraft Instruments, details of which he was specifically acquainted with, wherein 120,000,000 M of aircraft instruments and equipment were on hand in August 1944, of which at least one half were outmoded.

It would appear from this that Germany had reposed entirely too much authority in the hands of industry in the provisioning of aircraft spare parts without proper surveillance from the GAF. However, it was pointed out that the aircraft companies had access to stock position records and even sent representatives to depots and storage dumps for the purpose of reviewing stocks of parts on hand. Contradicting this apparent neglect on the part of industry is the statement that Dr. Heyne, Chief of Main Committee for Aircraft Instruments had created a huge stock of spare instruments in rear storerooms, releasing them to the front line activities only on demand and not re-routing them back to industry for their production requirements. The only motive advanced for his action was that Dr. Heyne wanted to make a name for himself in that in the event of a shortage of such parts, he could triumphantly point out his reserve stockpile.

Other contributing factors to the huge excess of spare parts on hand in August 1944 were, (1) although a representative of the GAF was present at the original provisioning at the beginning of a new production airplane, in the event of an extension to the contract he would not be present, nor would there be any attempt at re-provisioning or adjusting of orders based on a larger number of aircraft with a justifiably smaller percentage of spares required; (2) shortening of supply lines and smaller distribution of parts due to the reverses suffered by the German army and (3) an opinion expressed by the interrogator but denied by those being interrogated, that very probably the life expectancy of German aircraft had declined considerable due to bombing of planes on airfields and the marked superiority of Allied craft in air battles.

The monetary value of spare parts with relation to production aircraft was originally established at about 33% but early in 1944, upon the recommendation of the General Luftzeugmeister, Field Marshal Milch, this figure was reduced to approximately 20% spare parts to production aircraft. Reasons given for this action; (1) to release material and manpower for aircraft production, and (2) shortening of supply lines, resulting in fewer parts in transit.

## II. Spare Parts Distribution.

After the order had been established, the contractor was obligated to proceed with the fabrication of the spares. These were routed chiefly to two main sources, the Elbag Lager (Stores Dump) and the IZA (Air Stores Dept.). The Elbag Lager was the storeroom for supplying the Lufthansa (Commercial Airlines) repair stations and the Reparatur Industrie. (Contractor-maintained repair bases). The IZA supplies stocks to the various Luftpark (Air Equipment stores) and through them to the Gerateausgabestelle (Equipment Issuing Station). Below the Gerateausgabestelle were the Werft (Rear Operating Repair Unit) and the Feldwerft (Field Operating Repair Unit). The Feldwerft were capable of making minor repairs not to exceed 20 man hours, while the Werft could expend up to 100 man hours on repairs to an aircraft. No stocks of any degree were maintained at either Werft, but were drawn from the Gerateausgabestelle as needed. If not available there, the Werft applied to the Luftpark. If the Luftpark did not have the required part in stock, it took steps to obtain it from the nearest IZA. A Werft could not go directly to the IZA for a part, but had to follow the above-outlined channels.

A further distribution of parts was made to the Eisgasten (Rail Issuing Stations) and the Motgasten (Truck Issuing Stations). The Eisgasten was a train of special cars fitted with bins and racks and carrying a complete range of spare parts. During operations where the front lines were fluid, these Eisgasten would move forward or back with the advance or retreat of the land forces and would supply the Werft within a radius of 35-50 miles. In places where rail facilities were not available the Motgasten would operate, this being a fleet of trucks fitted out in the same manner as the railroad cars and capable of similarly supplying the Werft with spare parts.

### III. Concurrent Delivery of Spares.

Spare parts had, apparently, been delivered in a satisfactory manner (in excessive quantities, if anything) through 1943, but during 1944 manufacturers devoted most of their productive capacity to completed aircraft with a resultant decrease in spare parts. This condition may be attributed to one or both of the following factors: (1) the demand for completed aircraft despite severe bombings making necessary wide dispersal and inadequate transportation and (2) the de-emphasizing of spare parts as indicated by the cut-back from 33% to 20% money value.

In any event, it was emphatically stated that spare parts were not being supplied concurrently nor in sufficient quantities during the latter part of 1944 and up to the end of the war. A severe shortage existed in replacements for the forward fuselage gun section and in wings for the Me 262, resulting in necessarily grounding a large number of them. This is most important, as aerial observations had revealed a considerable quantity of Me 262's located at various points throughout Germany that never left the ground to oppose Allied aircraft. Reasons previously advanced were (1) there were too few to provide sufficient combatant strength and (2) that they were being modified into fighter-bombers. To these two reasons must be added that of a shortage of replacement parts and it might easily be that this reason is as responsible for grounded Me 262's as the other two.

Indeed, conditions became so critical during 1944-45 that the Werft were authorized to fly a plane to the manufacturer, requisition a part, sign a receipt for same and return with the part to the base. This procedure was contrary to all established systems for the smooth flow of parts and maintaining of accurate usage records.

### IV. Stock Records.

An elaborate system of maintaining stock records and perpetual inventories was established, making use of the Hollerith card system (IBM) Records were forwarded from the Gast and the Luftpark monthly (weekly, in the case of critical parts) to the LZA, where the information was transferred to cards and a recording prepared on paper showing receipt, usage and stock balances. These lists were widely distributed throughout the German Aircraft Supply system and to all concerned aircraft manufacturers.

This was another case of a good system being poorly administered as, apparently, no one paid any attention to the figures; industry did nothing to reduce excessive stock balances or to concentrate on building up reserves of critically-short parts, nor did the GAF issue any instructions to this end.

### V. General.

All inquiries into aircraft standards have inevitably brought

forth the statement that very little progress had been made in this respect. It is difficult to understand how any problem so basically important could have received so little attention. This interrogation revealed that prior to 1936, no attempt had been made to standardize on parts but that at about this time the individual manufacturers were establishing their own sets of standards. The RLM ordered these various companies to interchange their standards to the end that they should use other parts when acceptable, rather than designing a new set of standards of their own for essentially the same part, varying it just enough to make it non-interchangeable with other manufacturer's parts. However, very little interchanging was actually done and the government itself had not progressed very far in establishing a range of standard (DIN) parts.

Attached to every aircraft manufacturing plant was a body known as a Bauaufsicht Luft (Aircraft Construction Supervision) for the purpose of inspection and quality control. In 1942 industry suggested that the duplication of company and government inspection be eliminated or drastically reduced, pointing out that they were capable of inspecting their own work. The government eagerly agreed to this program, visualizing the release of badly-needed manpower. Therefore, in December 1942, Field Marshall Milch issued order 517 to BAL to discontinue their operations in the matter of inspection, transferring the responsibility for quality control to the aircraft plants themselves. This reduced the number of BAL personnel from 2000 to less than 1100. However, quality of product decreased so markedly that, with the establishing of the Jagerstab, on March 1, 1944 order 517 was revoked and the BAL resumed its quality inspection in aircraft with a total personnel numbering about 3000.

#### VI. Conclusions.

The interrogator was left with two following definite impressions:

(1) That well-planned and carefully organized supply systems were broken down and failed to function smoothly due to individual characteristics of the personnel, both government and industrial, charged with the task of administering the program.

(2) That the German government did not have the tight rein and control on industry as had heretofore been imagined.

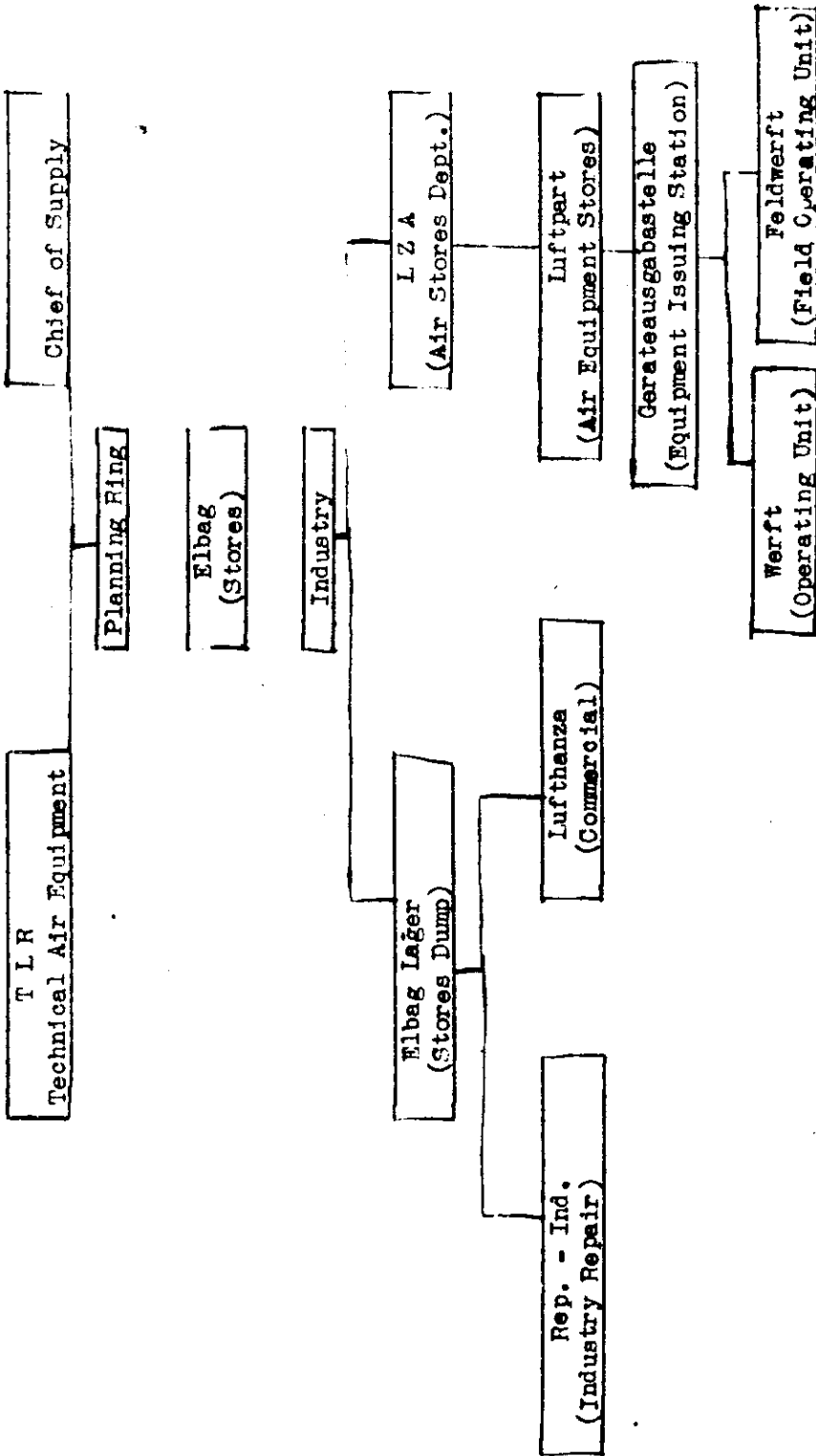


DIAGRAM OF GERMAN AIRCRAFT SUPPLY SYSTEM

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