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COUNTRY Hungary

REPORT

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SUBJECT Pestvideki Gépgyár Aircraft and Engine Overhaul Depot

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Pestvideki Gépgyár Aircraft and
Engine Overhaul Depot

General Information

1. The Pest Area Machine Factory (Pestvideki Gépgyár) was a repair depot engaged in overhauls of jet engines and jet aircraft for the Hungarian Air Force. Types of aircraft which the facility overhauled were: MIG-15, UTI-MIG-15, and MIG-15-BIS. Engines overhauled were: RD-45, VK-1, and VK-1A. The overhaul of MIG-17 aircraft and VK-1F engines was in the planning stage. In October 1956 the depot received a MIG-17 aircraft and an VK-1F jet engine; these new types were under study. The actual overhaul program was scheduled to begin in late 1957 or early 1958. Necessary repair equipment was ordered from the USSR.
2. The quantity of aircraft and engines to be overhauled at the depot was determined by the Ministry of Defense in conjunction with Hungarian Air Force Headquarters. The Ministry of Machine Building, to whom the repair facility was immediately subordinated, was required to make necessary arrangements in order to fulfill a quota prescribed by the Ministry of Defense.
3. Immediately upon acceptance of aircraft and engines for overhaul, they were attached to the depot. After completion of repairs, they were delivered to the representative of the Hungarian Air Force, who was responsible for their shipment. Presumably, the overhauled products were to be delivered to their units of origin; however, the exact destination was unknown. The facility could not fulfill assigned quotas for overhaul of aircraft and engines, nor could it maintain a "pool" or provide substitutes for products in overhaul.
4. The main reasons for not meeting the assigned quotas were:
 - a. Insufficient deliveries of spare parts from the USSR. It was quite usual that in order to get one delivery of spare parts, two to three orders had to be submitted, or that delivery of spare parts for the year 1955 arrived during the second half of 1956. At the end of 1956 there was no hope of receiving any spare-part shipments ordered during the same year. During the last months of 1956 there was a tendency to arrange deliveries of spare parts from Poland and Czechoslovakia, rather than from the USSR; this improved the possibilities of more complete and speedier deliveries.
 - b. complete anarchy dominated the repair plant due to a lack of special education of personnel in the Ministry of Machine Building and in the Ministry of Internal Commerce, who were responsible for securing necessary materials for the operation of the depot. Administrative personnel of the depot responsible for production were incompetent and until November 1956 were not able to determine needs and requirements for spare parts and materials. They also could not organize the efficient repair

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process required for uninterrupted production.

- c. In some fields of production there were absolute indifference and lack of interest among the workers. They were unconcerned and were trying to work as little as possible. In general, discipline was on a very low level.

5. The labor force consisted of about 600 - 700 workers, 20 per cent, of whom were women. About 32 percent of the total labor force were "white-collar" employees, i.e. administrative personnel and engineers; the remaining 68 percent were actual workers. Eighty percent of the actual workers were highly skilled. The majority of the skilled workers and most of the administrative and engineering staff resided in Budapest; unskilled workers and other common laborers lived in nearby villages. The working week consisted of 48 hours, 8.5 hours a day, Monday through Friday, and 5.5 hours on Saturday. Personnel employed at the depot were given 12 to 24 days of leave annually. The exact amount of leave depended upon the position and length of employment. Salaries were as follows:
- a. Director - 3600 forints monthly plus premiums up to 5000 - 6000 forints annually.
 - b. Chief Engineer - 3000 forints monthly plus premiums up to 5000 - 6000 forints annually.
 - c. Chief of Production Section - 2500 forints monthly plus premiums up to 70 percent of annual income.
 - d. Chief Bookkeeper - 2500 forints monthly plus premiums up to 70 percent of annual income.
 - e. Chief of Main Technological Section - 2500 forints monthly plus premiums of up to 70 percent of annual income.
 - f. Chief of the Technical Inspection Section - 2400 forints monthly plus premiums of up to 70 percent of annual income.
 - g. Workshop Foremen - 2100 forints monthly.
 - h. Engineers - from 1300 to 1800 forints monthly.
 - i. Skilled Workers - from 1200 to 2500 forints monthly.
 - j. Unskilled Workers and Common Laborers - from 600 to 1000 forints monthly.

Aircraft Overhaul

6. According to the plan, the plant was scheduled to overhaul 20 aircraft annually; however, only about 11 to 12 were actually overhauled. The AOCF rate was about 40 to 50 percent

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7. Aircraft overhaul consisted of washing, thorough dismantling, determination of defects, necessary repairs of airframe and skin according to previous analysis, necessary repairs of separate aircraft systems, levelling of aircraft, painting, general check, testing on the ground, first flight, test inspection, and final examination in the air.

Engine Overhaul

8. According to the plan, the plant was scheduled to overhaul 200 engines annually; however, the plan was never fulfilled and only about 100 were actually overhauled. [redacted] with improved equipment, better administration and availability of spare parts, the depot could overhaul annually about 1000 jet engines of comparable types. 25X1
9. Spare parts arrived mainly from the USSR; some shipments arrived also from Poland and Czechoslovakia. There was a shortage of almost all spare parts, the most common being rear and middle ballbearings, ratchet clutches, fastening elements for turbine casings, turbine nozzles, turbine blades, rubber hoses for fuel systems, accessory components of fuel systems, and combustion chamber liners. Surprisingly, there was no production stoppage because of nonavailability of spare parts. If necessary, parts were removed from other engines, which resulted in some engines being completely dismantled for parts and existing only "on paper".
10. Time between overhauls of the VK-1 engine was 100 running hours; however, later series required overhaul every 150 hours and some every 180 hours. VK-1A engines required overhaul every 180 hours; the latest series every 200 hours.
11. Time allocated for the overhaul of the VK-1 engine in the USSR was about 400 man-hours. In Hungary, due to incomplete familiarity with overhauling products and unorganized and unsatisfactory deliveries of supplies, the actual time required for the overhaul was two to three times higher, i.e. 800 to 1200 man-hours.
12. Figure 1 on page 9 is the engine-overhaul flow chart for this plant. Engine overhaul consisted of surface cleansing; dismantling; washing and cleaning of components; determination of defects; necessary repairs or replacements of components; dynamic balance of compressor and turbine rotors; repair, adjustment and testing of fuel-system accessories; painting of engine components; washing and inspection of oil systems; engine assembly; testing of engine on the stand; disassembly of engine; engine inspection; engine assembly; final testing; and packing and preservation.

Identification Data


13. The depot was located on the island of Csepel, near the village of Szigethalom, approximately 16 kilometers SSW of Budapest. Figure 2 on page 10 pinpoints the exact location of this installation.

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14. Figure 3 on page 11 is a  sketch of the layout of this repair depot. Numbers in parentheses below correspond to numbers on the sketch. Dimensions given are approximate.
- (1) Guard House - a one-story, brick building with a shingle-covered, gable roof. Its dimensions were 15X8X5 meters.
 - (2) Transformer Station - a concrete structure with a flat or shed-type, sheet-metal-covered roof. Its dimensions were 5X5X5 meters.
 - (3) Transformer Station - same as Point (2).
 - (4) Guard House - a concrete building with a flat or shed-type, sheet-metal-covered roof. Its dimensions were 5X5X5 meters.
 - (5) Workers' Bathhouse - a rectangular, one-story, brick building with a shingle or sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (6) Administration Building - a rectangular, one-story, brick building with a shingle or sheet-metal-covered, gable roof. Its dimensions were 20X8X5 meters.
 - (7) Technical Section - offices of engineers were located here. It was a one-story, brick, rectangular building with a shingle or sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (8) Chemical Laboratory - a rectangular, one-story, brick building with a shingle or sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (9) Spare-Parts Warehouse - a one-story, brick, rectangular building with a shingle or sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (10) Spare-Parts Warehouse - same as Point (9).
 - (11) Engine-Testing Station - testing of jet engines was performed here. It was a tall, one-story, concrete structure with a monitor roof. Its dimensions were 16X12X8 meters.
 - (12) Tool Warehouse - various tools were stored here. It was a one-story, brick building with a sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (13) Spare-Parts Warehouse and Administrative Offices - a one-story, brick building with a sheet-metal-covered, gable roof. Its dimensions were 20X8X4 meters.
 - (14) Engine-Overhaul Workshop - the only workshop of its kind in the facility; overhaul of jet engines was performed here. It was a reinforced-concrete structure with a monitor roof and partial super-structure. Its dimensions were 100X52X18 meters.

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- (15) Depot's Maintenance Section - responsible for maintenance and repair of buildings within the depot. It was a one-story, brick building with a sheet-metal-covered, gable roof. Its dimensions were 15X10X4 meters.
- (16) Workshop - engaged in repair of the depot's equipment. It was a one-story, brick building with a sheet-metal-covered, gable roof. Its dimensions were 15X10X4 meters.
- (17) Technical Library - also housed a kitchen and messhall. It was a one-story, brick building with a sheet-metal-covered, gable roof. Its dimensions were 25X12X4 meters.
- (18) Coordination Section - responsible for planning production and delivery of spare parts and materials. A first-aid station was also located here. It was a one-story, "L"-shaped, brick building with a sheet-metal-covered, gable roof. Its dimensions were 15X15 meters, with a width of eight meters and a height of four meters.
- (19) Aircraft-Overhaul Workshop - aircraft overhaul was performed here. It was a reinforced-concrete structure with a monitor roof. Its dimensions were 120X60X20 meters.
- (20) Secondary Entrance.
- (21) Main Entrance.
- (22) Airfield - occupied by the Soviet Air Force, it was used for testing of aircraft overhauled at the depot.

Engine-Overhaul Workshop

15. Inclosure 1  sketch of the engine-overhaul workshop, Point (14) of Figure 3.  Numbers in parentheses below refer to numbers on the sketch.

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- (1) Disassembly of Engines - a crane was installed here.
- (2) Washing of Engine Components - kerosene baths were installed here.
- (3) Determination of Defects - also repair of compressor and turbine rotors.
- (4) Dynamic Balance of Compressor and Turbine - contained two machines of Soviet manufacture, one of which was designated DBS-4.
- (5) Polishing of Compressor Casings - contained one polishing machine, of either Soviet or Hungarian manufacture.
- (6) Spare-Parts Room - fuel-system spare parts were stored here.

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- (7) Correction of Engine Components.
- (8) and (9) Repair and Testing of Fuel-System Accessories - contained 15 test stands of Soviet manufacture, used for testing fuel-system accessories. There was also one honing machine of Hungarian design.
 - (8a) Pressure Chamber - used for altitude testing of fuel systems. Contained an air-compressor.
- (10) Engine Assembly - a crane and a monorail were installed here.
- (11) Translation Section - Russian technical literature was translated into Hungarian here.
- (12) Office of the Chief of the Secret Section.
- (13) Storeroom of the Secret Section - for technical documents.
- (14) Vestibule.
- (15) Reception Room of Secret Section.
- (16) Unidentified Premise of the Secret Section.
- (17) Storeroom of the Secret Section.
- (18) Washing of Components of the Auxiliary Gearboxes and Accessory Drives.
- (19) Repairs of Auxiliary Gearboxes and Accessory Drives.
- (20) Pressurized Air Balloon - cylindrical, 2.5 meters in diameter, and five to six meters high.
- (21) Aircraft Inspection Point - final check, tune-up, and leveling of aircraft was performed here before test flights.
- (22) Storage Area - for gliders belonging to the depot's glider club.
- (23) Storeroom - for ordinary tools.
- (24) Timekeeper's Office.
- (25) Repair of Gas Collectors (Gazosbornik)
- (26) Repair of Combustion Chambers and Combustion Chamber Liners.
- (27) Repair of Exhaust Cones.
- (28) Spare-Parts Room.
- (29) Spare-Parts Room - for combustion-chamber spare parts.

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- (30) Aircraft Painting.
- (31) Aircraft Painting.
- (32) through (35a) Painting of Engine Components.
- (36) through (38) Mechanical Shops - contained lathes, drillers, planners, etc.
- (39) and (40) Boilers - for the heating system of the workshop.
- (41) Galvanizing Shop.
- (42) Control Board of Workshop's Electrical System.
- (43) Shop - dynamos generating current for the galvanizing shop, Point (41), were located here.
- (44) Storeroom - for chemical products used in the galvanizing shop.
- (45) Galvanizing-Shop Premises.
- (46) Steam Boiler.
- (47) Reception Room - of the Chief of the Galvanizing Shop.
- (48) Office - of the Chief of the Galvanizing Shop.
- (49) Men's Toilet.
- (50) Bookbinder's Shop - technical books and documents were bound here.
- (51) Office - of the Chief of Technical Inspection.
- (52) and (53) Engineers' Offices.
- (54) Office of the Chief of Engine Overhaul.
- (55) Reception Room - of the Chief of Engine Overhaul.
- (56) Vestibule.
- (57) Photo Copy Room - photographic copies of technical documents were made here.
- (58) Sliding Door.
- (59) Sliding Door.
- (60) Sliding Door.
- (61) Stairwell.

ENCLOSURE:

Layout of Engine-Overhaul Workshop in Pestvidéki Gépgyár
Overhaul Depot

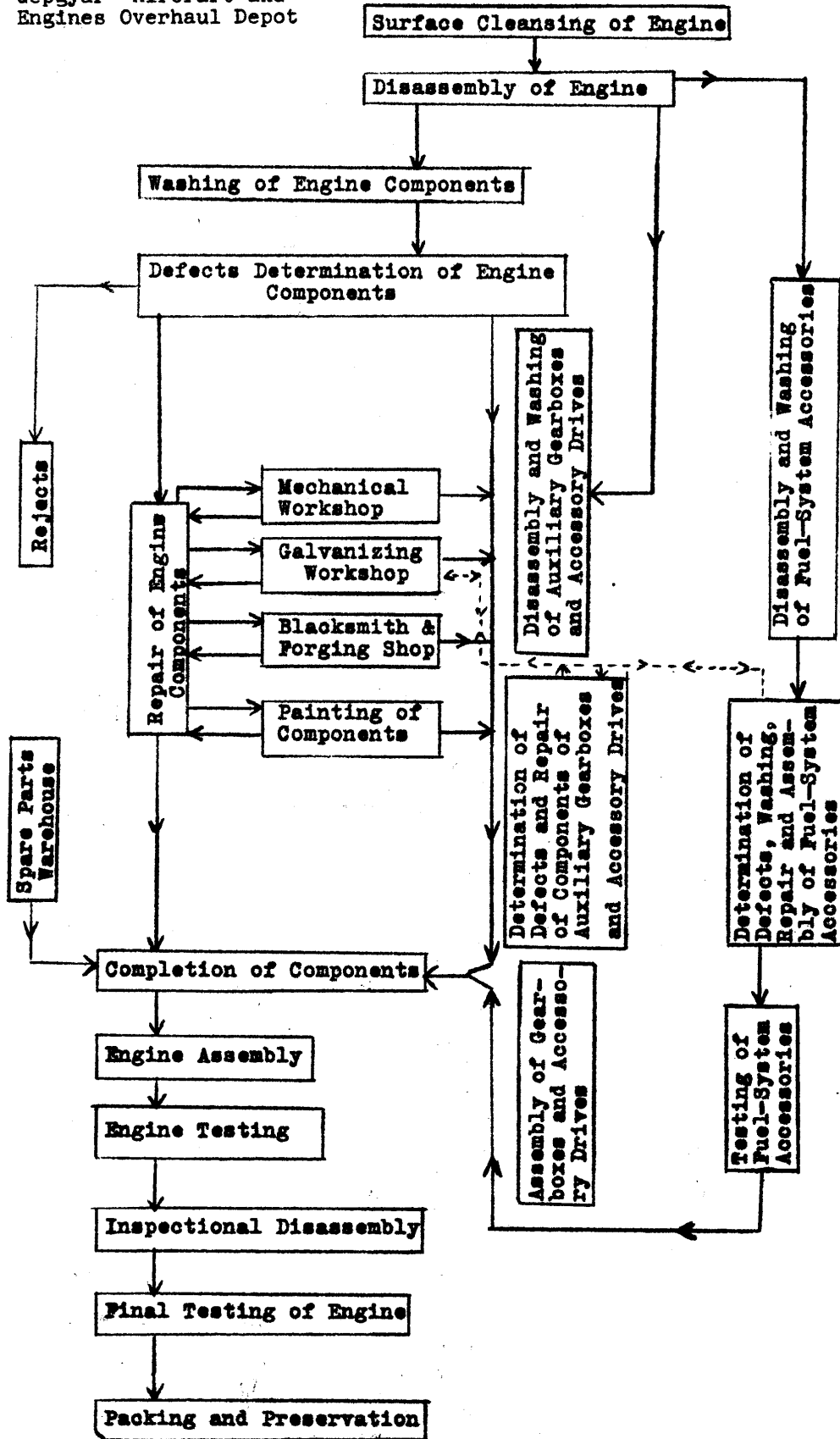
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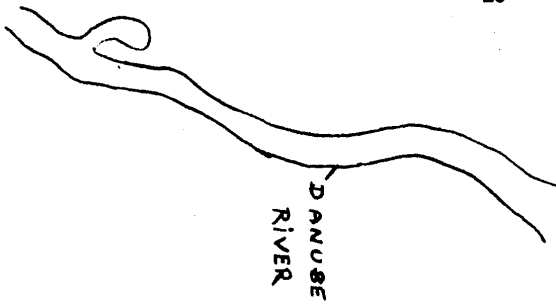
FIGURE 1: Flow Chart of the "Pestvideki Gepgyar" Aircraft and Engines Overhaul Depot



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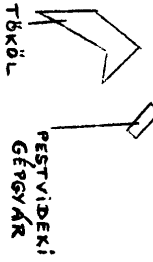
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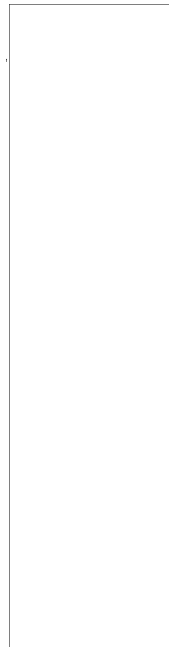


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60 DGZ

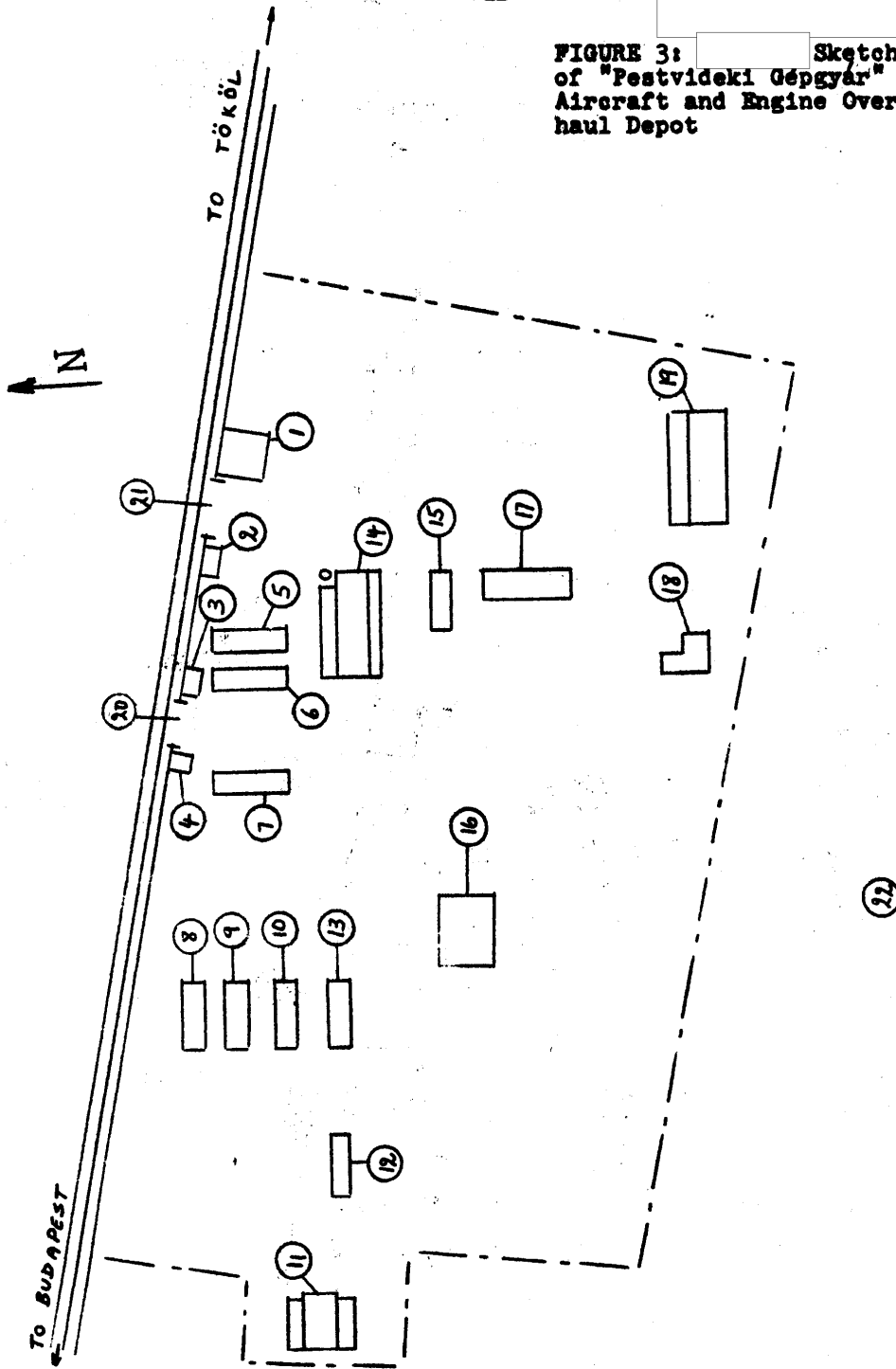
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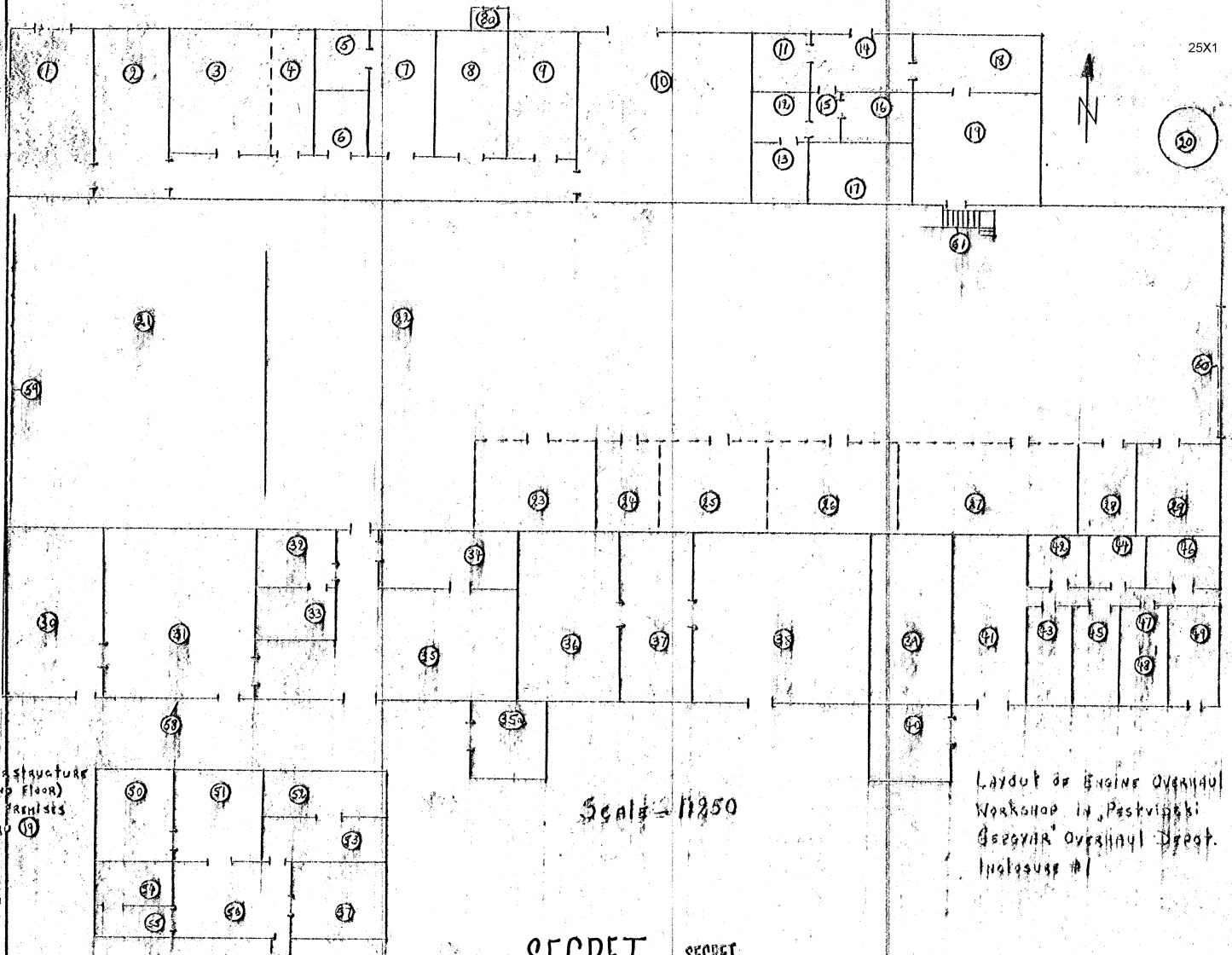
FIGURE 3: Sketch of "Pestvideki Gépgyár" Aircraft and Engine Overhaul Depot



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Superstructure
(Second Floor)
over Barnists
① 1100 ①

Scale = 1/250

LAYOUT OF ENGINE OVERHAUL
WORKSHOP IN PESTVIGGI
GEORGIA OVERHAUL DEPT.
INTEGRITY #1

SECRET

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