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INFORMATION REPORT

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SUPPLEMENT TO REPORT NO.

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THIS IS UNEVALUATED INFORMATION

Attached is forwarded as received.

Comments: 25X1

1. In para. 2, "areal" should probably read "aerial".

2. In para. 6, "for terristical purposes" should read "for use on the ground".

3. In para. 13, "Bella [illegible] Howel" should probably read "Bell and Howell".

4. The Professor Drobishev referred to in para. 19 is probably Fedor V. Drobyshev. 25X1

5. The following are the full names of some of the German scientists mentioned in the report:

Hans Illgen, Herbert Korthum, Wilhelm Kaemmerer, Johannes Mahler, Willi Roeger, Gerhard Lenski, Willi Hackeroth, Hermann Schrumpf, Helmut Scharfenberg, Walter Bernst, Paul Goerlich, Alfred Krohs, Karl Gundlach, Harald Straubel, Joachim Ehrhardt, Kurt Erler, Rudolf Reindl, Paul Gaenswein, Willi Hoffmann, Werner Tiedeken, August Sonnefeld, and Werner Notni.

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COUNTRY USSR -2- REPORT

TOPIC Optical Plant No 393 in Krasnogorsk 25X1

EVALUATION PLACE OBTAINED 25X1

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REMARKS 25X1

This is UNEVALUATED Information 25X1

1. Optical Plant No 393 in Krasnogorsk (55°49'N/37°32'E) was controlled by the Ministry of Armaments in Moscow. In 1941, the production departments of the plant were evacuated to Novosibirsk where mass production of optical instruments is still being continued. The plant sections which had remained in Krasnogorsk and which were called the Old Plant after 1941, became a research and development station for optical instruments. After the war, the Krasnogorsk plant was considerably enlarged with equipment from the "New Plant" at Novosibirsk and, in early March 1949, mass production was resumed there.[1] 25X1

2. The three main fields covered by Optical Plant No 393 included areal photo equipment as used for photogrammetry; cameras for civilian purposes and military equipment such as range-finders and sighting devices. The plant also produced optical precision instruments for laboratories which were even produced for export after the fall of 1950.

3. Between November 1946 and about late 1949, Skarshinski or Starshinski (fnu) was plant director. He was replaced by Soloviov (fnu) who died in the spring of 1952. Samuelov (fnu) was chief engineer until about 1947 when he was replaced by Turigin who, in turn, was transferred in early 1952 and probably became a professor at the Optical Institute in Moscow where he had previously been a guest professor. In 1945 and 1946 both engineers had been members of the Soviet commission supervising the dismantling of the Zeiss Plant in Jena.

4. Optical Plant No 393 had one designing office for photogrammetric and military instruments, one designing office for cameras and an additions central designing office, the so-called ZKB or SKB for developing and designing work. Soviet engineer Belayev (fnu) was chief of the designing office for photogrammetry and Ger-[illegible]

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Nikolayev was in charge of the military instruments. Work orders, if the individual research groups and laboratories did not receive them directly from the technical manager, were given by Engineer Belayev and General Nikolayev, both of whom were previously members of the Zeiss Plant dismantling team. The total work force was estimated at 3,000 to 4,000 persons, including 250 Soviet laboratory personnel, 12 to 15 students who in every year worked several months at the plant, mostly in the German designing bureaus and in the mechanical workshop, and 102 German experts from the Zeiss Plant who were deported to Krasnogorsk in October 1946. Sixty to seventy percent of the personnel were wives of laborers. No young persons nor apprentices were seen at the plant. There was an apprentice school in Krasnogorsk from which the students were graduated as skilled craftsmen. The offices, laboratories and production departments generally worked one 8-hour shift per day. After 1951, the production department for lenses worked three shifts per day because the machines had to be continuously in operation. In order to fulfill the production quota, work was repeatedly increased to two or three shifts at the end of months. During the summer months Sundays were rest days, no work was done on Wednesdays during the winter. 2

5. The reassembly and reinstallation of the Zeiss equipment in Plant No 393 started in early February 1947 and was just as well organized as the dismantling had been in Jena. On 1 May 1947, the workshops started to operate. Eight German engineers were assigned to supervise the installation of the various workshops and laboratories.

6. In the field of photogrammetry, it was the main task of the plant to produce machinery for the series production of photogrammetric equipment. Plant No 393 also produced rectifiers at a rate of about 50 units in 1951; stereo-photographic plotting machines, at a rate of about 15 units in 1951; small autographs (stereo evaluation devices for terrestical purposes, unsuited for aerial surveying), at a rate of about 10 units in 1951; stereo comparators for the measurement of photographs at a rate of 40 to 50 units in 1951; and photo theodolites at a rate of about 25 units in 1951. All these instruments, had been mass produced by the Zeiss Plant, especially the photo theodolite the latest model of which was developed and built by the Zeiss Plant during the war was now produced by Plant No 393. These instruments were probably also produced by other Soviet plants.

7. Rectifiers and small autographs were primarily produced for the Air Force, since these products were accepted by air force officers. It was believed, however, that Soviet requirements had been filled by late 1952, when Soviet prospects seen at the Zeiss Plant indicated that these instruments, especially rectifiers and stereo comparators, were now available for export. From the number and type of instruments delivered by late 1951, it was concluded that the entire USSR had about 22 to 24 aerogeodetical evaluation stations for aerial photographs. The name, and location, of these stations were not known.

8. The Soviets had captured large quantities of German aerial cameras called "Aero Kammern" by the German industry and the Wehrmacht. Of these cameras, three major types were available, namely the Rb 20/30 aerial camera with a focal length of 20 cm for 30 x 30 cm

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pictures; the Rb 50/30 which was the most common type for reconnaissance aircraft, and the Rb 75/30. Since a Soviet production of aerial cameras had not yet started, the captured German units were subjected to a major overhaul and then sent to various air force stations. In March 1947, a workshop for these overhauls was installed at the plant. The Soviet equipment in this field was either insufficient in quantity or obsolete.

9. Between early 1950 and January 1952, the plant was engaged in the development and construction of a reconnaissance camera. It was believed that it had a focal length of 30 to 50 cm and a picture format of 18 x 18 cm or of 24 x 24 cm. It was specially noticed that the camera bore a close resemblance to the American Fairchild or/and the English Williamson type cameras. It was thought that this camera represented the latest Soviet Air Force equipment, especially for close reconnaissance purposes.

10. In early 1950, Optical Plant No 393 started to overhaul and modernise so-called "Askania" type motion-picture theodolites and to prepare them for utilization at target ranges and experimental stations. In late 1950, complete sets of construction records were prepared and the production of these theodolites was initiated in early 1951. The first set produced by the Soviets deviated from the Askania Kth 41 model which had a shooting speed of 4 photos per second and modified the "Gtk 20", an Askania type theodolite with shooting speed of 20 photos per second. The Soviet model, designated Gtk 10/20, was adjustable for either 10 or 20 pictures per second and was developed for a focal length of either 1 meter or 1,20 meters. It was still undecided, however, which of these focal lengths would be finally chosen by the Soviets. In late 1951, the production records of the Gtk-20 were completed and, in mid-1951, the production of the experimental series was initiated. The first model was probably not completed before the spring of 1952. It was unknown whether series production of the equipment was intended, since the Soviets planned to build a motion picture theodolite of their own.

11. The Gtk instrument was basically a measurement and control apparatus to evaluate the data of AA gunfire. The Soviets, however, apparently planned to use it for AA rockets. This was indicated by statements of the Soviet officers who repeatedly inspected the development activities and who appeared to know very little about AA guns while at the same time they were very familiar with AA rocket techniques.

12. Gtk 10/20 was essentially similar to a standard type theodolite, but, instead of a theodolite telescope, it was equipped with a motion picture camera with a very long focal distance and a sighting device. Actuated by means of a hand wheel, it followed the curve of the projectile, automatically taking pictures at prefixed intervals. According to previously known systems, two or three such units were simultaneously in operation. The sequence of photographic exposure could be synchronized.

13. Photographic cameras produced at Optical Plant No 393 included the Zorki, a Soviet model copied from the Leica. The Zorki had been modified and prepared for production at the plant and was subsequently manufactured at an estimated monthly rate of 250 to 300 units. The Moskva II, a copy of the German Zeiss Ikon Super II camera, was produced at a monthly rate of about 200 units, and a Soviet model of the Bell & Howell type 16-mm narrow film cameras were manufactured at a monthly rate of about 200 sets. The plant also produced camera accessories, enlargers, ancillary lenses and

related equipment. No information was available on the production of cameras for military purposes. Activities in this field were concentrated on research and development. It was believed that although Optical Plant No 393 seemed to be equipped for the production of these cameras, the military cameras developed there were probably mass produced at other plants as for example in Novosibirsk. The production of such equipment at Plant No 393 was insignificant.

14. In the photogrammetric field, the first work order was for the development of a 30 x 30 cm reconnaissance camera with a focal length of 50 cm and an automatic diaphragm setting. This camera was a further development of the German Rb 50/30 type camera and had a very high degree of cold resistance. An experimental model was successfully tested, but no information was available that mass production was planned or had started. The project was initiated in early 1947 and was completed in about the fall of 1947.

15. The second work order was related to the development of a 50 x 50 cm reconnaissance camera with a focal length of 100 or 150 cm. The camera was equipped with a picture travel compensator unit (Bildwanderungsausgleich) effected by two rotating glass prisms forward of the lens, a new development in this field. An experimental model of the camera was tested in 1947, but no information was obtained on the mass production of the unit.

16. The third project concerned the development and designing of a 13 x 18 cm light weight measuring camera with a focal length of 70 mm to be equipped with a Soviet made Russar type wide angle lens with an angle of view of 120 degrees. This system had been previously applied by the Soviets and was considered to be a real accomplishment. The camera could be installed in small aircraft for surveying purposes. The project was completed in 1949 when the camera was ready for series production. No further information was obtained.

17. The fourth project, the development of a stabilized camera suspension, was accomplished with the designing of an electrically activated and controlled leveler. The suspension could be used for various types of cameras including the light weight camera described in paragraph 16 above. The development work ended with the preparation of blueprints for the construction of one experimental model. No production was started.

18. The fifth work order requested the designing of a developing unit, a photostat machine and perforators for 50-cm film for the reconnaissance camera described in paragraph 15.

19. The sixth project involved the development and designing of a so-called SOD device, a stereo evaluation device for oblique photographs based on the principles of Soviet Professor Drobishev (fnu). No information was received on the results obtained with the experimental model. Some Germans at the plant doubted the quality of the instrument.

20. The seventh project called for the development and designing of a photo cartograph. This new type of instrument, combining an evaluation and a rectifying device in one unit, was also to be

One model of the former Jumo was built by German and Soviet experts at Plant No 393. The project was initiated in the summer of 1949. It was unknown when the activities were completed. Ingenieur Eichler (fnu) who worked there stated that a range finder for tanks with an optical sight was developed from a German model, but no details were available.

28. Research work on photo-electric cells was conducted in a special laboratory. Dr. Goerlich (fnu) was an expert in this field. Research and development activities in the infra-red field conducted under the control of Dr. Straubel (fnu) included the construction of both laboratory models and operational field sets. The designation "Black Body" (sic) was heard in this connection. Dr. Straubel maintained connections to the laboratory in which crystals on a thallium base were produced. The crystal introduced to effect precipitation had been brought from Jena.

27. In general, all research and development work involved some sort of redesigning and further development of previous results rather than essentially new research and developments. All the work initiated was designed to cover the practical requirements of the USSR and was not aimed at scientific progress. Soviet results obtained after 1951 were considered to be good. A central scientific control office supervised the activities in a very efficient manner. There was no shortage of funds. The only bottlenecks occasionally hampering the activities were in the material supply.

26. The deported German experts from the Zeiss Plant working at Optical Plant No 393 in Krasnogorsk were organized in special sections to include the photogrammetric section, the camera production section, a small section for the production of lenses, a development section for photo electric cells, a section for experimental mechanics and the crystal laboratory.

29. German experts who were retained at Plant No 393 after June 1952 included Dr. Korthum (fnu), an authority for gyroscopes; Dr. Illgen (fnu), an electrician; Dr. Kaemmerer (fnu), a mathematician; Ingenieur Arthur Wittig and Ingenieur Otto Schmidt, designers. All these experts belonged to a group of gyroscope specialist who had worked under the control of Dr. Korthum at the Prisma Plant in Moscow and had been transferred to Plant 393 in early 1952. German experts from the Zeiss Group retained at Plant No 393 included Diplom Ingenieur Oskar Biehlmaier, an expert for the production of lenses; Ingenieur Mahler (fnu) and Ingenieur Roeger (fnu) general designers; Ingenieur Lenski (fnu) and several mechanics, among them Erich Fundsack and Hackeroth (fnu). It appeared that these persons were selected for political reasons.

30. Another group of German experts worked in Zagorsk, located 30 kilometers northeast of Moscow. Dr. Pepello (fnu) was chief of this group which had previously worked on control equipment and which, in Zagorsk, was allegedly involved in the development and designing of oculistic equipment. No information was obtained on the fate of this group.

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31. Two German Groups were stationed in Leningrad and worked at the GOMS and Progress Plant. The group of micro experts probably worked at the Progress Plant, while the other group, composed of astronomic experts, probably worked at GOMS which also employed a small group of precision measurement experts. Dr. Kuehne (fnu) with 10 scientists and mechanics remained in Leningrad after June 1952.

32. The German group deported to Kiev included 45 experts and 53 dependents. They worked at the Kiev perimeter in the so-called Arsenal I which was installed in old casemate type fortifications dating back to the Russo-Turkish war. Arsenal I and Arsenal II which were located in the vicinity employed about 4,000 Soviets. During the war, both arsenals served as tank repair shops, and after the war they were converted to the production of optical instruments and cameras. The workshops of Arsenal I were involved only in the development of new geodetic instruments and in the production of single parts, while Arsenal II worked primarily on series production of the Soviet Contax type camera. 25X1

33. Thirteen experts of the geodetic group who were retained in Kiev after June 1952 included: Dr. Herbert Schorsch, a scientist, about [redacted]

34. A small group producing spectacles worked in Isym, located east of Kiev.

35. The glass experts of the Schott & Gen. Firm in Jena who had been deported to glass works located in Lyubertsi and Lytkarino have all been repatriated.

1. [redacted] Comment. For plant layout of Optical Plant No 393, see Annex 2. For a cross section of plant buildings, see Annex 3 and for a layout sketch of Workshop No 36, see Annex 4. 25X1

2. [redacted] Comment. For a table of organization of Optical Plant No 393, see Annex 1. 25X1

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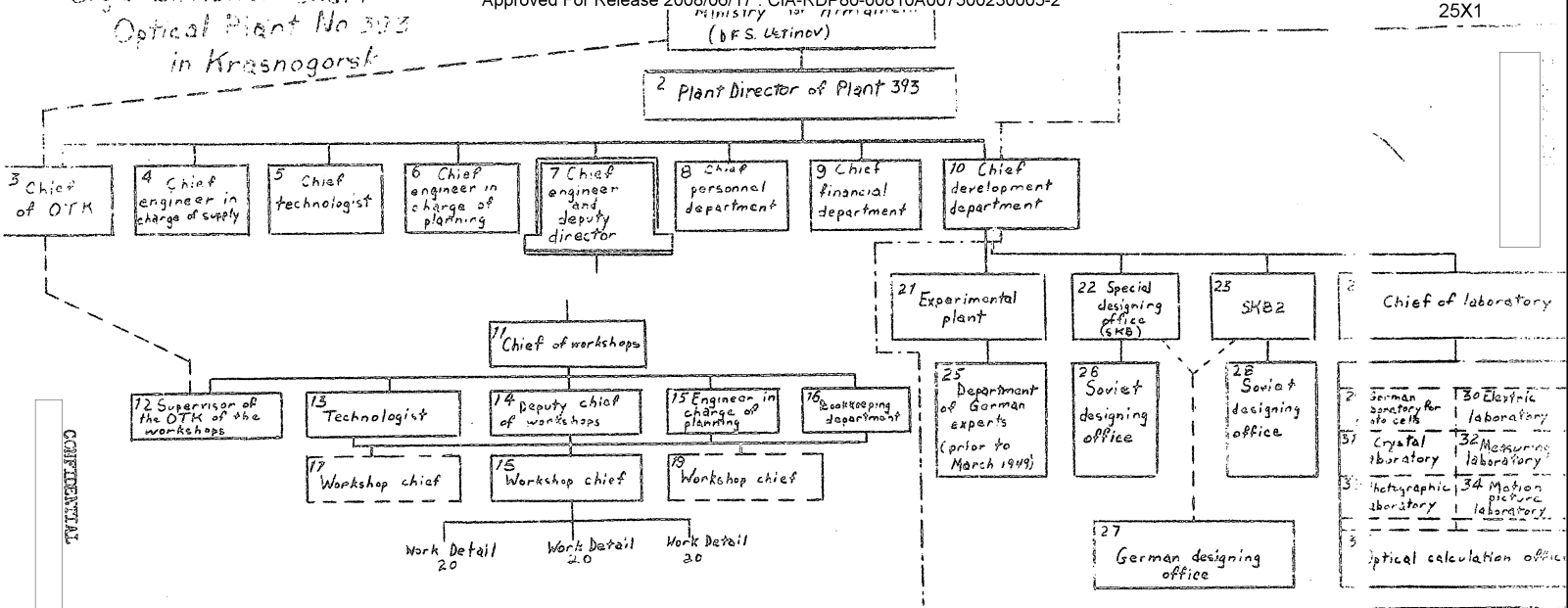
Organizational Chart of Optical Plant No 393 in Krasnogorsk



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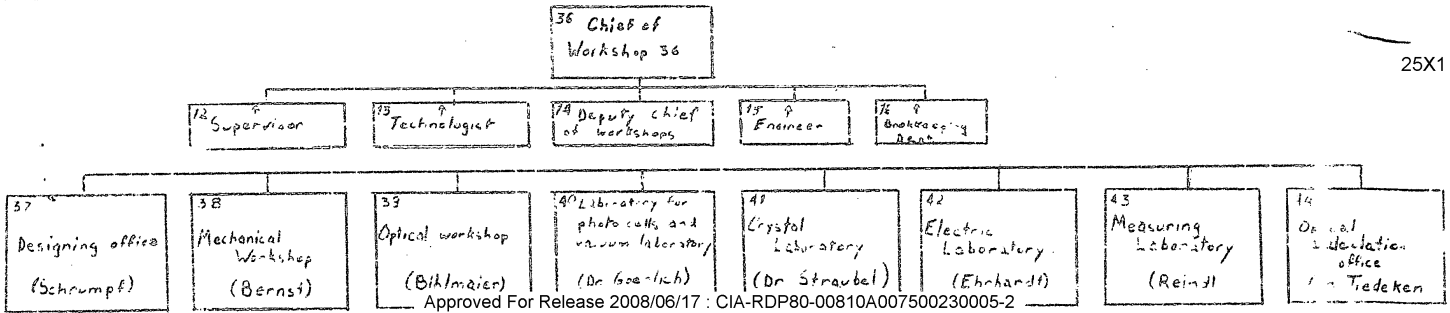

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Legend.

1 Ministry of Armaments in Moscow, Minister Ustinov (fnu)

The sections listed under No 2 to 20 and 36 to 44 of the legend were located in the so-called "new" plant.

2 Management of Plant No 393. From October 1946 until about early 1950 Engineer Skarshinski (fnu) was plant director. Prior to about early 1946 he had been director and chief engineer in the Novosibirsk Plant where he was awarded the Stalin Price at the end of the war. Skarshinski had become plant director for party political reasons, and was replaced by Engineer Soloviev (fnu) because the Ministry was unsatisfied with the activities of the plant. He became director of a small unknown plant in Krasnogorsk. Soloviev who was still director was reported to have been replaced in mid-1952. 25X1 25X1

3 OTK

4 Chief engineer in charge of power supply

5 Chief technologist

6 Chief engineer in charge of planning 25X1

7 Chief engineer. Between 1946 and early 1950 this position was held by Engineer Samuelov (fnu), allegedly a precision mechanic in the optical field. 25X1

8 Kiriyushin (fnu) was chief of the personnel department during the entire period of observation. He was an MVD captain.

9 Chief, finance department

10 General Nikolayev (fnu) was chief of the development department. 25X1

11 Chief of the workshops

12 Soviet OTK of the workshops

13 Soviet technologist

14 Soviet deputy chief of workshops

15 Soviet planning engineer

16 Book keeping office

17 to 19 Workshop chiefs

20 Work details

Sections 11 to 20 were controlled by the chief engineer and deputy director.

21 Experimental plant

22 Special designing bureau (SKB) 1. 25X1
Chief: Engineer Belayev (fnu) (phonetic spelling) [redacted]
[redacted] 25X1

23 SKB 2, chief: General Nikolayev.

24 Chief, laboratory prior to March 1949 in charge of the German scientific group (29 - 35)

25 German subsection until March 1949

26 Soviet designing office

27 SKB 3 (German designing bureau). Prior to 1949, SKB 3 was attached to SKB 1 and 2 as special German designing office. Turigin was chief of SKB 3 until early 1950 when he was replaced by Dr. Engineer Krivoviash (fnu) [redacted] 25X1
[redacted] 25X1

28 Soviet designing office

29 Laboratory for photo-electric cells

30 Electric laboratory

31 Crystal laboratory

32 Measuring laboratory

33 Photographic laboratory

34 Motion picture laboratory

35 Optical computing office.

36 Chief of workshop No 36, in charge of the German scientific group in the new plant after March 1949.

 25X1

37 Designing bureau, chief: General Nikolayev, German chief: Ingenieur Schrumpf (fnu). The German scientific staff included 29 persons, among them Diplom Ingenieur Scharfenberg (fnu), Diplom Ingenieur Friedrich Schneider, Diplom Ingenieur Hans Belzner and 25 engineers as designers.

38 Mechanical workshop, Soviet chief: General Nikolayev; German chief: Werkmeister Bernat (fnu). The German group included 37 persons, among them 6 additional foremen and about 30 mechanics. 25X1

39 Optical workshop. Soviet chief: Engineer Gardin (fnu), expert for motion pictures, 25X1

. The position remained vacant thereafter and was partially taken over by the Soviet expert for photographic work whose name was not remembered. The German group included Diplom Ingenieur Riehlmaier (fnu) as chief, 4 foremen and about 5 opticians. 25X1

40 Photoelectric cell and vacuum laboratory, Soviet chief: Engineer Novitski. The German staff included Dr. Goerlich (fnu) as chief, Dr. Krohs (fnu) and 3 experts in the photo cell laboratory and three foreman and two laboratory workers in the vacuum laboratory. 25X1

41 Crystal laboratory.

German chief: Dr. Straubel (fnu) whose staff included Dr. Gundlach (fnu) and 1 mechanic or laboratory worker. 25X1

42 Electric laboratory, Soviet chief: Engineer Burdashkin (fnu), German chief: Diplom Ingenieur Ehrhardt or Ehrhart (fnu). His staff included Dr. Feler (fnu) 3 engineers, one mechanic and one laboratory worker.

43 Measuring laboratory, Soviet chief: Krivovlash and later Engineer Petrov (fnu). The German personnel included Diplom Ingenieur Reindl (fnu) as chief, Dr. Gaenswein (fnu) and Ingenieur Hofmann (fnu).

25X1

44 Optical calculation office, Soviet chief: Maltsev (fnu); the German personnal included Dr. Tiedeken (fnu) as chief, Dr. Sonnefeld (fnu) who was repatriated in 1951, Dr. Votal (fnu) and Diplom Ingenieur Helias (fnu).

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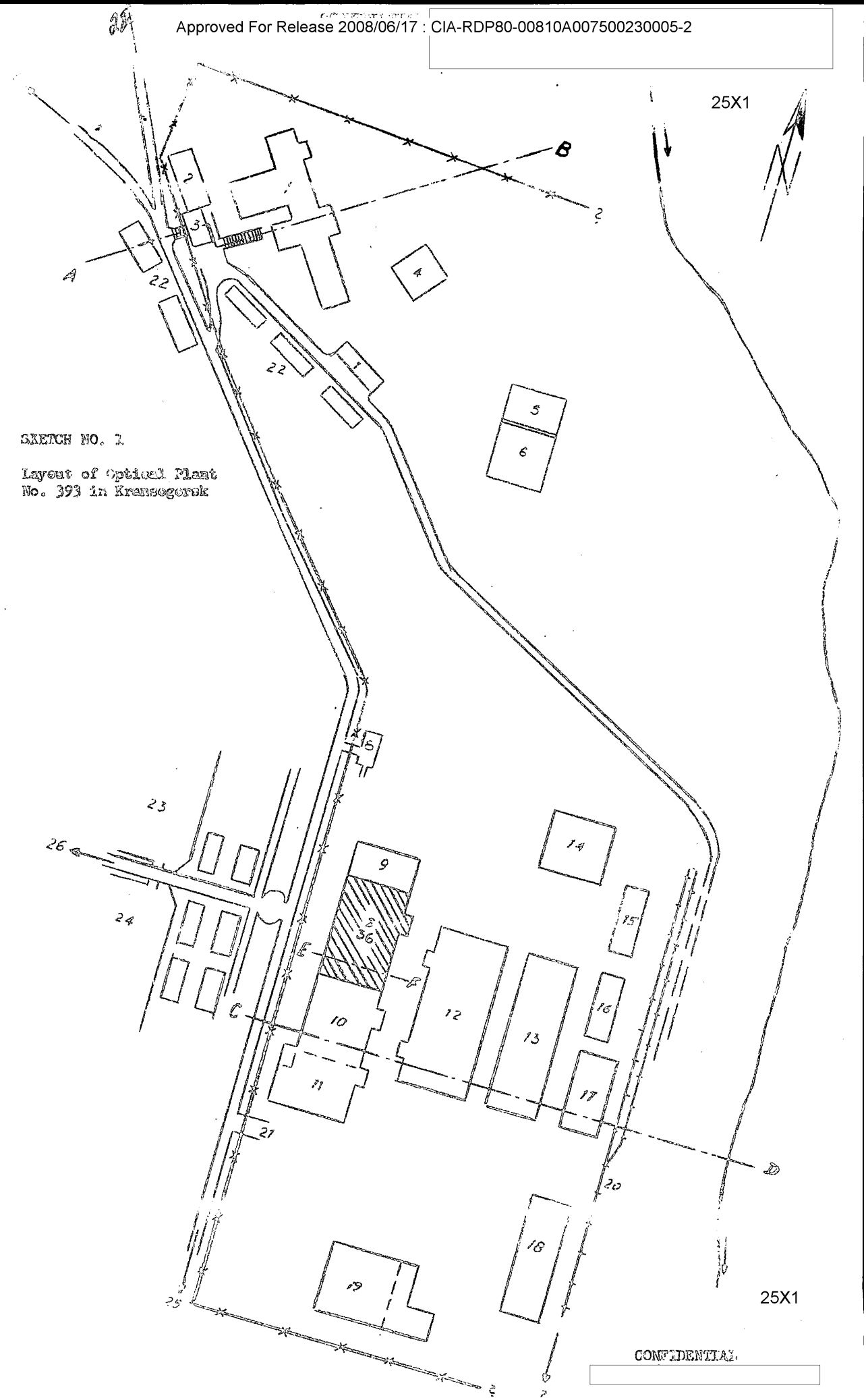

SKETCH NO. 1.

Layout of Optical Plant
No. 393 in Krasnogorsk

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Annex 2

Legend.

1 - 7 Old Plant

8 - 21 New Plant

1 Administration building

2 Office building

3 Gate house

4 Building of undetermined purpose

5 Soviet experimental department

6 Office building

7 Fuel station and motor vehicle repair shop

8 Guard house

9 - 11 Five-story plant buildings housing laboratories and Z 36 (workshop No 36)
the work room of the German experts. For details see Annex 4.

12 New production buildings

13 New production buildings

Building 12 and 13 housed workshops for the pre-fabrication of single parts and were equipped with lathes, milling and boring machines. The entire glass coating machinery mostly valuable special equipment came from the Zeiss Plant. No details were obtained on the machinery or the work procedure. This information was known by the German foremen who, at least until March 1949, had supervised the installation and first operation of the machinery and had instructed the Soviet personnel. Workshop 12 also housed the Zeiss mascon boring machines.

14 Motor vehicle repair shop and garages

15 Magazine for finished products and mailing department

16 Workshop equipped with very primitive Soviet installations for plumbization, nickel plating and chromium plating of single parts, varnishing shop.

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22 Apartment houses

23 Krasnogorsk sport field

24 Krasnogorsk cultural park

25 Road to Pavshino, about one kilometer

26 Access road to the Moscow - Riga highway, about 2,5 km

27 Road leading to the camp referred to as Diplomat Camp of Platina Camp, about 4 km

28 Road leading to Krustshati settlement, about 2 km from the gate house (8)

A - B, C - D and E - F See Annex 3 for sections.

SKETCH NO. 2

Cross Section of Plant Buildings at Optical Plant 393

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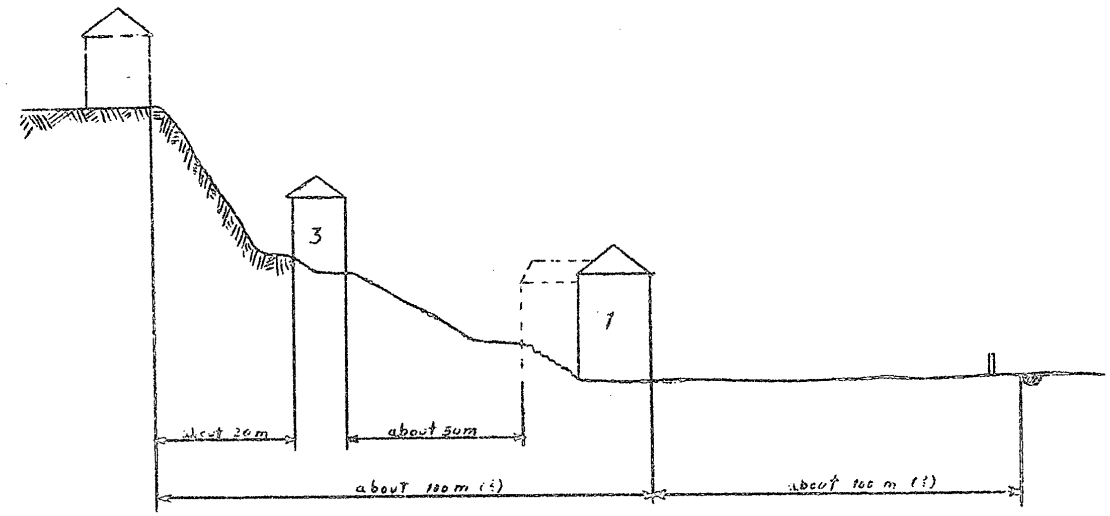

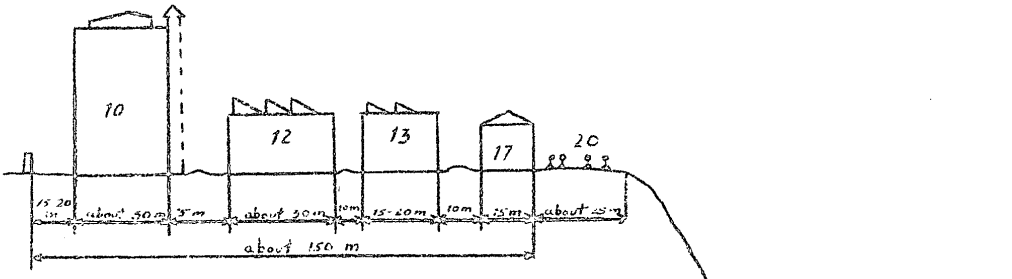

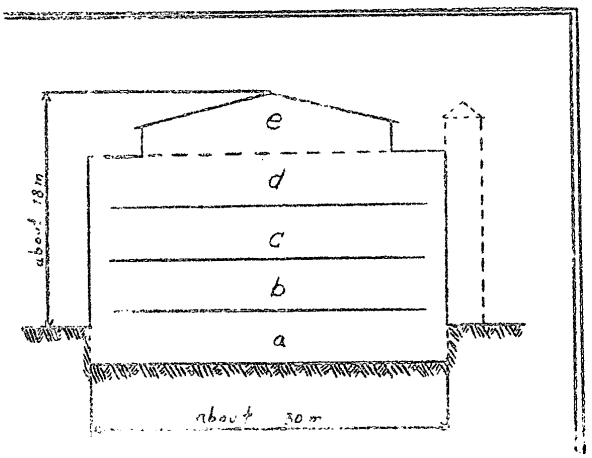

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Legend.

Section A - B of Annex 2

1 Administration building

3 Gate house

Section C - D of Annex 2

10 Workshop with laboratories etc

12 and 13 New production buildings

20 Railroad tracks

Section E - F through Workshop No 36 of Annex 2

a Basement housing stores, glass depot, storage of measures for the chemical laboratory and engraving shop. No air raid shelters were seen.

b Ground floor: For details see Annex 4

c Second floor: Optical production shop equipped with the usual machinery for concave glass grinding, polishing and cutting from the Zeiss Plant, including the machinery for the production of nonspherical lenses in the southern part of the building.

d The third floor housed some of the testing and measuring laboratories to solve the testing required by the current production.

e The fourth floor housed various small assembly shops equipped with lathes, boring machines and about 5 small automatic lathes, a small carpenter shop and a library

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SKETCH NO. 3 Layout of the Ground Floor of Workshop 36 at the Optical Plant No. 393

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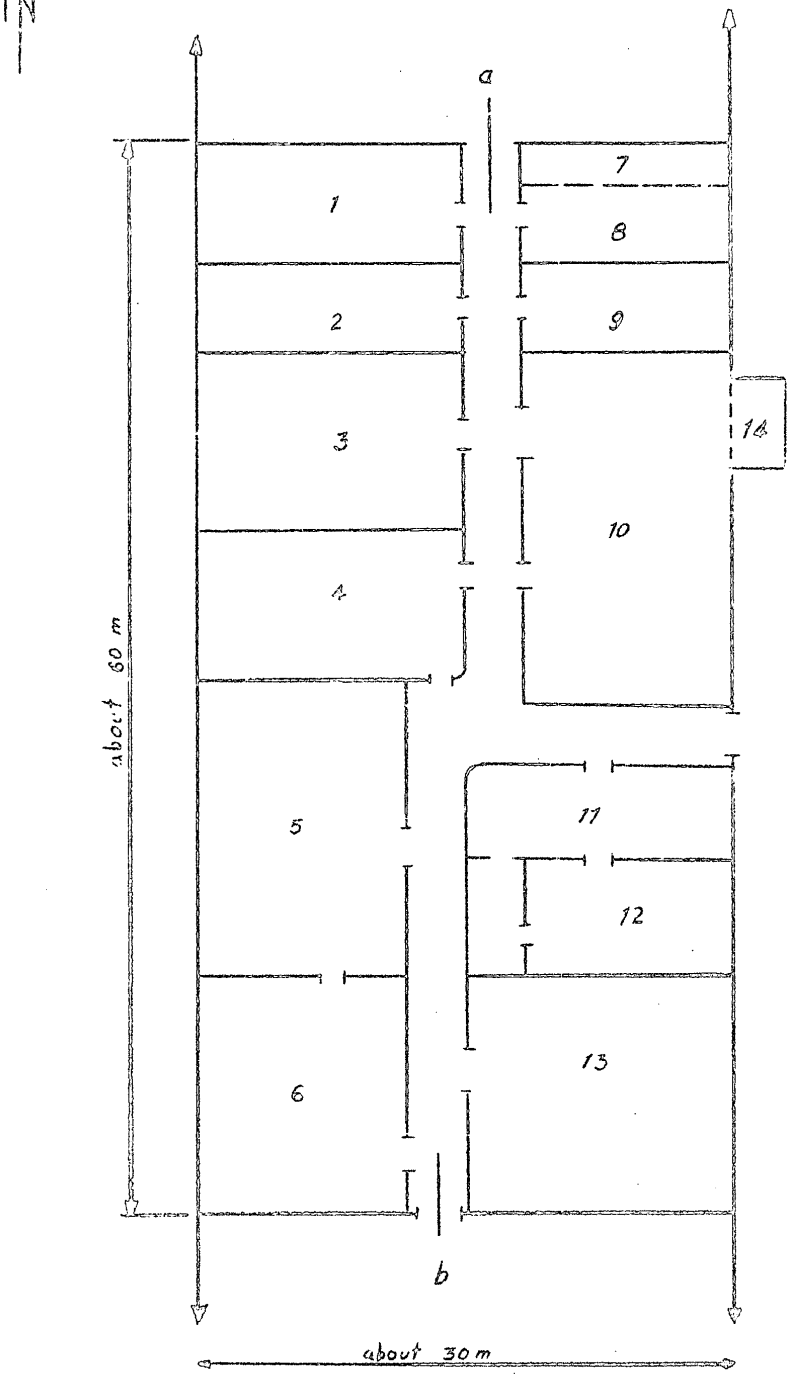

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