

COUNTRY Czechoslovakia

REPORT NO.

TOPIC Czechoslovakian Ball Bearing Production

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PREPARED 25 March 1952

REFERENCES

PAGES 3 ENCLOSURES (NO. & TYPE) 4 - 4 sketches on ditto (3 pages)

REMARKS

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1. The ball bearing plant, located in Perstejn (Puerstein) (N 51/K 81), was south of Cernys (Tschirnitz) and west of Klasterec (Kloesterle) on the Eger River, about 1 km southeast of the Perstejn railroad station. The southern side, and part of the western side, of the plant was bordered by the Eger River. A branch of the Eger River, which was partially covered, ran through the plant. The other sides of the plant, not bordered by the river, were surrounded by a barbed-wire fence about 2.5 meters high. A small branch enterprise in Kadan (Kaaden) (N 51/K 91) also belonged to the plant. Before the war, the Perstejn ball bearing plant was a branch of the Swedish SKF ball bearing plant and during the war the plant was taken over by the Germans. After the war, it was nationalized. The present status of the plant is not known. However, it is not an independent national corporation, but is probably assigned to one of the already existing national corporations. The plant covered an area of about 200 x 150 meters and consisted of six buildings. Little information is available concerning the equipment of the plant. In early 1949, the plant equipment included 3 shaping machines (Faconmaschinen), 5 automatic machines, and various grinding machines, which were installed before the war. It was rumored that during 1949 eight new machines were to be supplied by Sweden to replace the old automatic machines and the shaping machines. The plant had no spur tracks. In early 1949, about 300 workers and 20 office workers were employed in the plant and about 100 workers were employed in the Kadan branch. Only one 8-hour shift was worked because of the lack of skilled workers. Female workers were assigned to sorting and cleaning the balls and the raceways. Ball bearings up to 130 mm in diameter, but mostly in sizes ranging from 50 to 70 mm, were produced until 1949. Wartime steel supplies in the plant depot were sufficient for another year, i.e. 1950.

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2. The plant was located on the northeastern outskirts of Tyniste nad Orlici (Tinischt on the Adler River) (O 51/G 90) at a junction of the road running from Tyniste nad Orlici to Opocno. The plant was built in 1930 and a workshop building was added in 1944 to 1945. The plant did not suffer any war damage. No new workshop buildings were constructed between 1945 and late 1949. Until 1945, the plant was owned by K.J. Stasek. After the war, the expropriated plant was assigned to the Bruenner Waffenwerke. It was a small plant, covering an area of about 70 x 150 meters. In late 1949, the plant consisted of two workshop buildings equipped with 15 lathes installed before the war, 12 new lathes set up in 1944 and 1945, 3 hardening furnaces, and 4 metal saws. Five new lathes were scheduled to be added in 1950. The plant had no spur tracks. In late 1949 and also during the war the plant employed 120 workers, about 15 percent of whom were women. Work was done in one 8-hour shift. Weekly incoming supplies consisted of one carload of steel bars and steel balls. The steel bars came from Kladno (N 51/L 59) and the steel balls came from England and Sweden.
3. The Lisen (Loesch) (P 50/N 50) Plant was about 2.5 km east of Bruenn, and about 2 km north-northeast of the Bruenn airfield. The plant was built by the Junkers Trust in 1941. It was known as the Flugmotorenwerk Ostmark (Ostmark Aircraft Engine Plant) and was built to produce tools and fittings for Junkers engines. It had modern facilities for the construction of tools, jigs and fixtures and had its own test stands, a hardening shop with 16 to 18 furnaces, and facilities for electroplating. During air raids in 1944, the hardening shop was completely destroyed and other workshops were damaged about 40 percent. After the war, the plant was nationalized and was assigned to the Bruenner Waffenwerke national corporation. When the Czechoslovakian industry was reorganized, this plant became an independent national corporation on 1 January 1950 and was called "Zavody presneho strojirenstvi Lisen, Brno, Zavod Antonina Zapotockeho." After the war, the plant was converted to the production of tractors and textile machines and ball bearings were produced in the eastern part of the plant. The war damages were repaired by 1947. The destroyed hardening shop was rebuilt and resumed operation in the summer of 1949. According to a former employee, the ball bearing workshop had the following equipment in early 1949: 20 forming lathes (Kopiermaschinen) of British make, 30 fully automatic machines of British make, 25 automatic machines for processing raceways, 40 grinding machines, 30 lathes, various milling machines and hardening furnaces. According to unconfirmed reports of April 1950, workshops for the production of component parts of textile machines and workshops for the assembly of textile machines were scheduled to be converted soon to ball bearing production and preparations were under way to equip these workshops with machines for ball bearing production. The Ostmark Plant employed about 3,000 workers during the war. In mid-1949, the number of workers was allegedly about 2,500, including 1,200 employed in ball bearing production. According to an unconfirmed report, 4,000 workers were employed in August 1950. Work was done in three shifts. In mid-1949, the ball bearing production reached a monthly average of 150,000 units. The quota for the first quarter of 1949 was 350,000 units and the quota for the second quarter was 500,000 units. In February 1949, special machines for the production of various sizes of ball bearings came from England. In April 1949, three British workers arrived to assemble these machines and to train workers in servicing these machines. At that time, 200 young Slovaks were assigned to the ball bearing department for training purposes. They were to be employed in the new ball bearing plant in Slovakia. The plant had spur tracks to the Bruenn main railroad station. There were two highways connecting the plant with Bruenn, one entering the plant from the north and the other one from the south.

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4. The Kysucke Nove Mesto Ball Bearing Plant was on the northwestern outskirts of Kysucke Nove Mesto (Q 50/X 52), opposite the railroad station and west of the Zilina (Q 50/O 92) - Cadca (Q 50/X 64) railroad line. The plant was still a branch of the Zbrojovka Brno national corporation (Bruenner Waffenwerke), and was called Zbrojovka Brno n.p. Zavod Viliama Sirokeho. The construction of the plant started in 1947 and 1948. On 28 October 1950 production was started in one completed workshop building. The plant, which was still under construction in mid-June 1951, will be the chief ball bearing plant in Czechoslovakia. Full scale production is scheduled to start in the winter of 1951/1952. The plant is scheduled to be expanded in the valley along the railroad line. In June 1951, the plant had 400 to 450 employees who worked in three shifts. The morning shift consisted of about 250 workers and there were about 100 workers in each of the other two shifts. Most of the staff members came from the Lisen (Loesch) ball bearing plant which also trained the new workers for this plant. The plant manager was A. Muskar, his deputy was O. Homula, and the operational manager was Volt (fnu). All three came from the Lisen plant. The number of employees is scheduled to be increased to 5,000 after the construction of the plant has been completed. Only one type of ball bearings was produced until June 1951. From October 1950 to June 1951 the ball bearing production allegedly totaled 140,000 units. Ten types of ball bearings will be produced by late 1951 and the number of types will allegedly be increased to 40 by late 1952. In June 1951, power was supplied from Zilina through a high tension transmission line. At that time, the boiler installation of the plant was not yet in operation. The plant had spur tracks to the Kysucke Nove Mesto railroad station. Electric cars were used for transportation within the plant. *

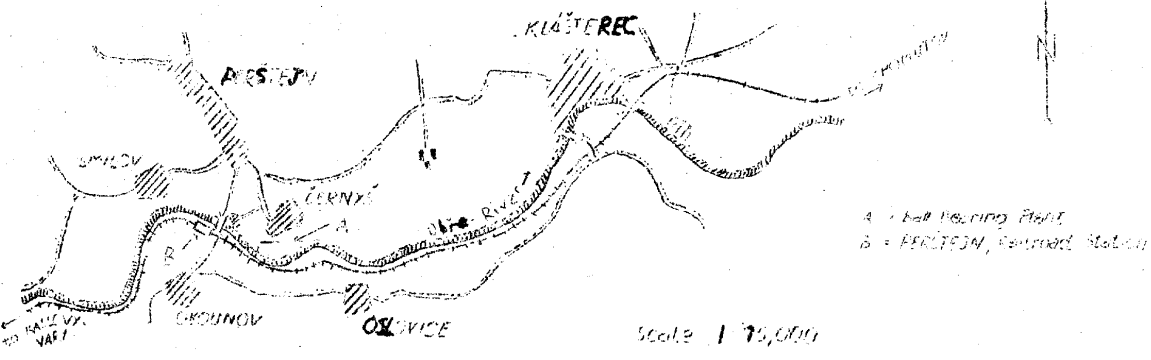
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Comment. For location and layout sketches of the four plants discussed in this report, see Annexes 1 through 4. Until recently, Czechoslovakia has had to import ball bearings. Czechoslovakian postwar production of ball bearings was so insignificant that only a fraction of the requirements could be met. When production started in 1947, only 329,000 units were produced. The output was increased to 1,446,000 units in 1948. At that time, the available productive capacity was fully utilized and the production corresponded approximately to the scheduled quota. No definite production figures have been published since 1948. A government decree of 10 April 1951, which revised the original Five Year Plan, increased the entire 1953 anti-friction bearing quota including the ball bearing quota, by 23 percent over the original plan. Thus the 1953 production for ball bearings is scheduled to be 607 percent above the 1948 production. This would mean that about 10 million units would be produced in 1953, compared with about 8 million units originally scheduled. The postwar production of ball bearings was mainly centered in the Lisen (Loesch) (P 50/N 50) plant of the Bruenner Waffenwerke (Bruenn Weapon Plants). According to previous information, the Bruenner Waffenwerke started to build a ball bearing plant in Kysucke Nove Mesto (Q 50/X 52) in 1947. The total Czechoslovakian ball bearing production is to be produced by the Lisen and Kysucke Nove Mesto Plants. No ball bearing plant is known to exist in Spisska Nova Ves (R 49/D 87). Judging from local conditions, it is improbable that there is such a plant in Spisska Nova Ves.

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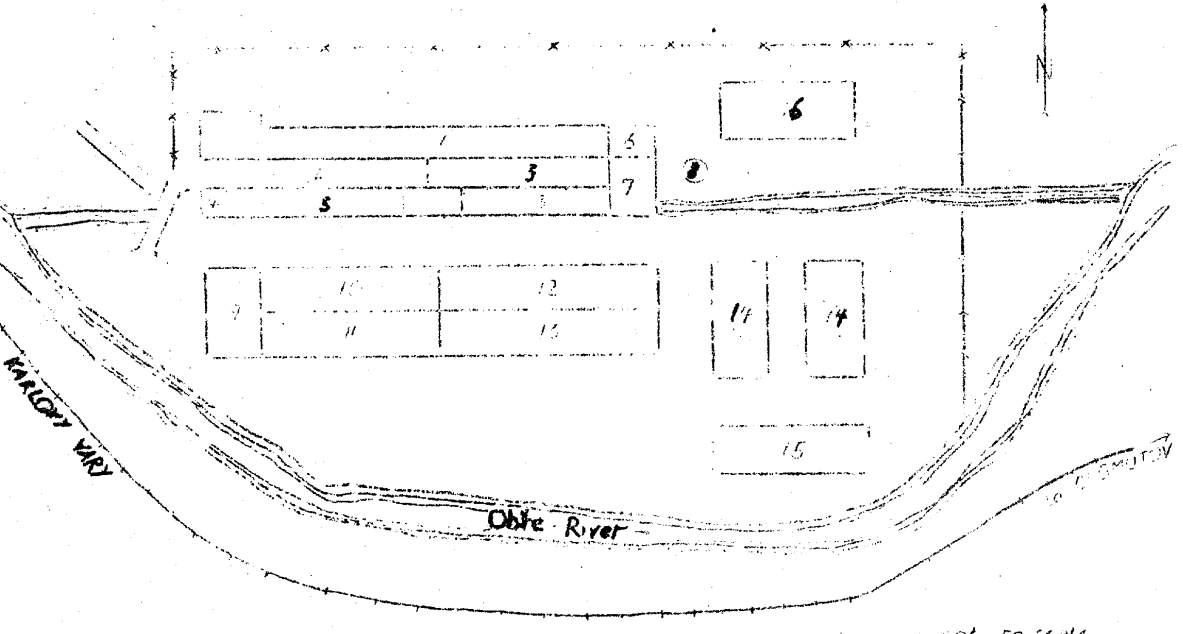
PERSTEIN Ball Bearing Plant

Location Sketch



Layout Sketch

Legend: See next page.



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Annex 1 to

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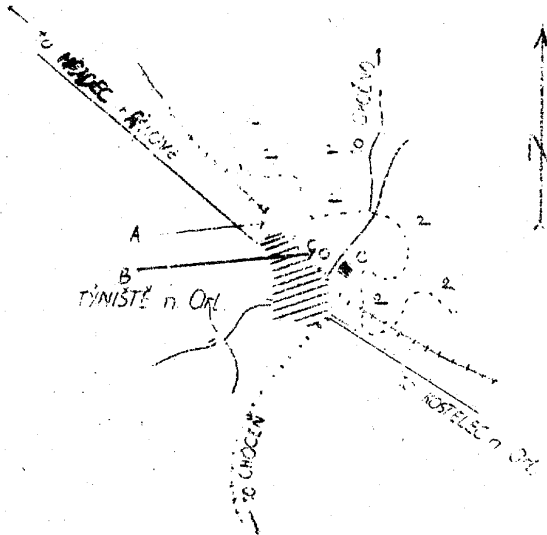
Legend:

1. Assembly shop.
2. Control station (sic).
3. Warehouse for finished goods.
4. Guard station.
5. Warehouse.
6. Power station.
7. Water turbine.
8. Smoke stack.
9. Office.
10. Machine shop equipped with automatic machines and shaping machines.
11. Control station.
12. Grinding shop.
13. Shop for cleaning ball bearings.
14. Steel warehouse.
15. Warehouse for old machines.
16. Plant kitchen.

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TYNISTĚ n. Orli Ball Bearing Plant

Location Sketch



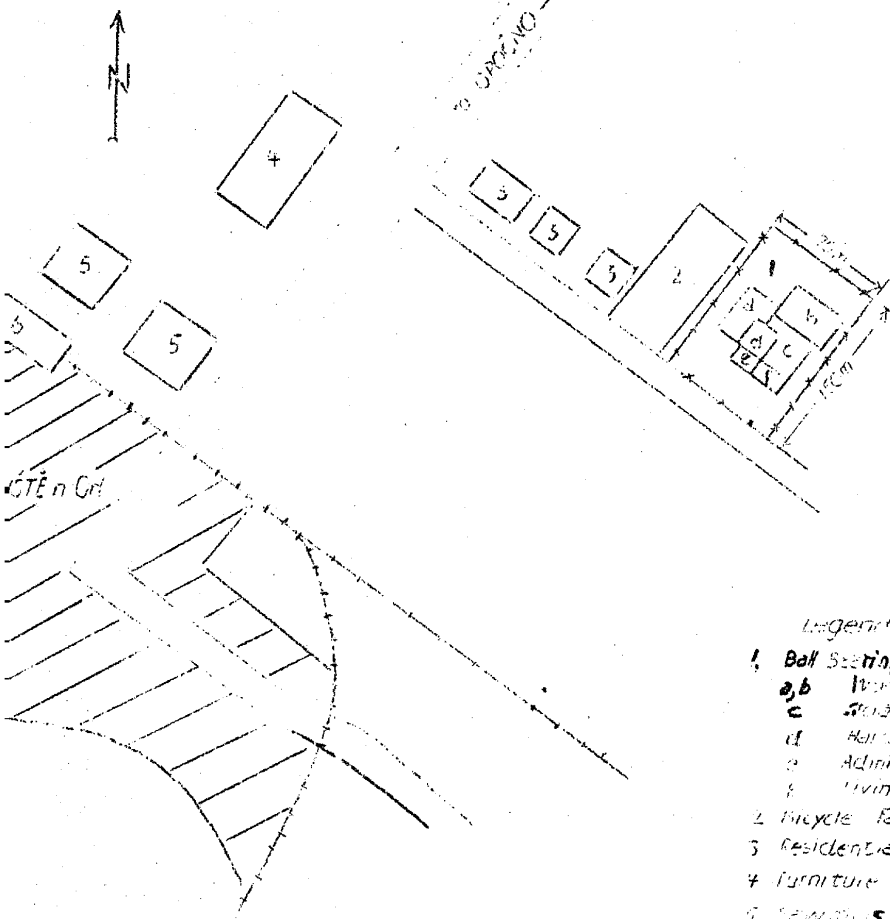
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A - Railroad Station

B - 2 Sawmills

C - Ball Bearing Plant

Layout Sketch



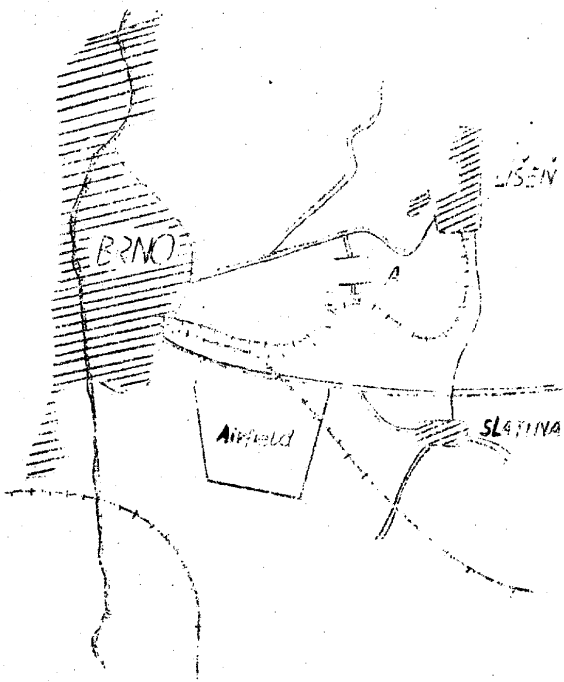
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Legend:

- 1. Ball Bearing Plant
- a, b Workshops
- c Storage Room
- d Hardening Furnace
- e Administration
- f Living Quarters
- 2. Bicycle Factory
- 3. Residential Buildings
- 4. Furniture Factory
- 5. Sawmills
- s. Railroad Station

BRNO-LISEN Ball Bearing Plant

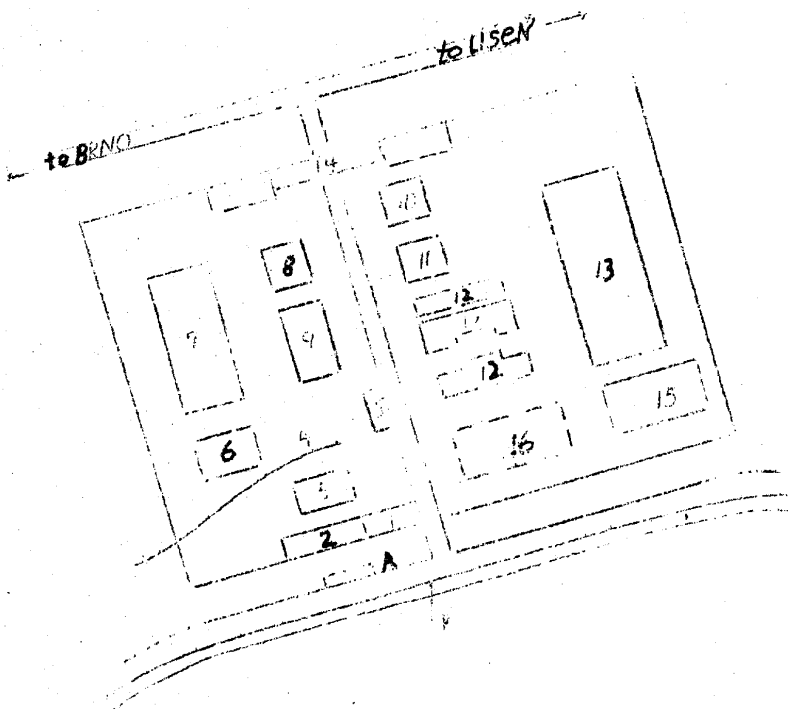
Location Sketch



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A - Ball Bearing Plant

Layout Sketch



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Legend: See next page.

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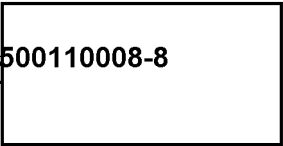
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Annex 3 to
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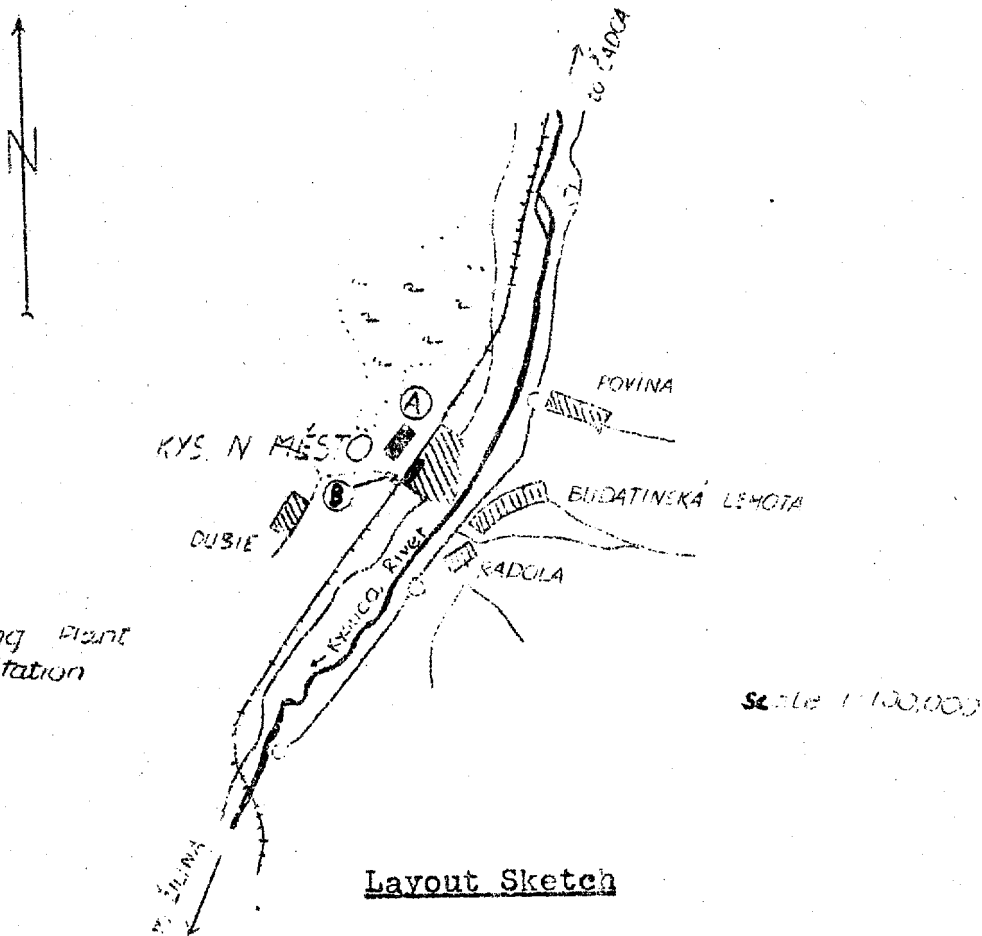
Legend:

1. Gatekeeper's house.
 2. Railroad station (waiting room).
 3. Boiler house and forge.
 4. Railroad siding.
 5. First aid station.
 6. Raw materials dump.
 7. Tractor assembly department and garage.
 8. Repair shop and electrical engineering shop.
 9. Department for the production of textile machinery.
 10. Paymaster's office.
 11. Canteen with hall.
 12. Wardrobe and lavatories.
 13. Ball bearing production department.
 14. Building housing administrative offices, factory police and gatekeeper's house.
 15. New building for hardening shop.
 16. Old hardening shop which was destroyed by air raids.
- A. Streetcar stop.
- B. Streetcar line No 10.



KYSUCKE NOVE MESTO (KYS. N MESTO) Ball Bearing Plant

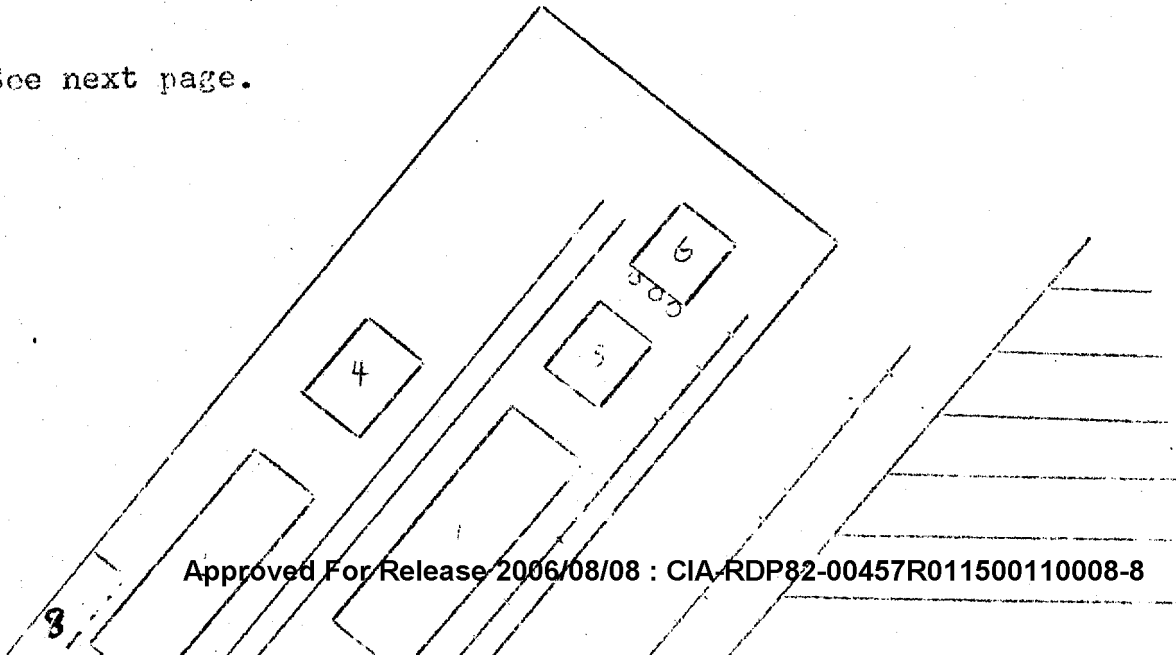
Location Sketch



- A) Ball Bearing Plant
- B) Railroad Station

Layout Sketch

Legend: See next page.



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Annex 4 t
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Legend:

The following installations of the ball bearing plant were under construction or already in operation:

1. Production workshop, a reinforced concrete structure, about 160 x 40 x 8 meters. Until June 1951, only one section of the building was used for production. The remaining part was used as a storeroom for machines which were to be set up in the plant. The following machines were observed in the ball bearing department:


- 4 Swedish grinding machines "Centerles".
 - 4 large grinding machines of Swiss make for grinding holes.
 - 2 old German grinding machines for grinding holes.
 - 4 face grinding machines "Podhajsky Tos Kurim".
 - 2 new double-sided automatic face grinding machines "Podhajsky Tos Kurim".
 - 1 old German grinding machine.
 - 10 new polishing machines "ZB Brno" with double guide way (doppelte Laufbahn).
 - 3 new polishing machines "ZB Brno" with single guide way.
 - 4 new polishing machines of unknown make with single guide way.
 - 2 new polishing machines "Stanko" of Russian make with single guide way.
 - 8 large automatic machines, i.e. 2 new "Wickman" machines, 2 new Russian "Stanko" machines, and 4 old "Gridley" machines.
- Various new "Tos Kurim" lathes, and some old German turret lathes.

A hardening shop, equipped with 2 large and 6 small electric hardening furnaces of Czech make.

2. Reinforced concrete workshop building, about 140 x 40 x 8 meters. The workshop was not equipped as of June 1951.
3. Workshop building, about 70 x 40 x 3 meters. The workshop was not equipped as of June 1951.
4. Workshop building, about 40 x 40 x 3 meters. The workshop was not equipped as of June 1951.
5. Reinforced concrete workshop building, about 40 x 40 x 3 meters. There were measuring instruments and fixtures (Vorrichtungen) for the shaping machines were set up in June 1951. This department worked mainly for the

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Annex 4 to 

6. Boiler house. A four-story building, about 40 x 40 meters. It had 3 smoke stacks. As of June 1951, the boiler house had not been put into operation.
7. Foundation walls for the administration building, about 100 x 12 meters.
8. Foundation walls for the garage, about 50 x 12 meters.