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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

C-O-N-F-I-D-E-N-T-I-A-L

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COUNTRY USSR (Bashkirskaya ASSR)

REPORT

SUBJECT 1. Bashkirskaya ASSR Area Information Including City of Sterlitamak
2. Sterlitamak Machine Construction Plant Layout
3. Production Data and Related Information on the Sterlitamak Machine Construction Plant
4. Laboratory of the Sterlitamak Machine Construction Plant

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REFERENCES

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

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1. In the summer of 1956 on two separate occasions, three or four large trailer-trucks traveling south on the Ufa-Sterlitamak highway. The canvas-covered trailers appeared to be heavily laden and were at least three times as large as the prime movers. The trailers had at least four wheels on each side and the approximate height of the trailer load was five meters.

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2. the Ural Machine Construction Plant (Uralmashzavod) in Sverdlovsk produced excavators,

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STATE	X	ARMY	#X	NAVY	X	AIR	#X	NSA	X	FBI		NIC	X	

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occupied a huge area and was almost a small town in itself, with plant-owned apartment buildings, parks, clubs, movies, etc. 25X1 the Ural Machine Construction Plant also produced military equipment 25X1 because there were some secret shops at the plant which were inaccessible to other employees.

3. In 1954 and 1955 freight trains with canvas-covered flatcars passing through Sterlitamak on their way to Ufa. 25X1 it was rumored that the cargo was tanks and aircraft which was being shipped to China.

4. There was an experimental shop at the Sterlitamak Machine Construction Plant. This was a secret shop, about 50 meters in length and ten meters in width. 25X1 this shop made the prototype of a portable, high-speed power hammer for the rapid construction of bridges, and perhaps other secret items for the army. A Soviet Army colonel (name unknown), whose uniform shoulderboards bore engineer insignia, was usually on duty in this shop. In 1956 this shop also experimented on several new types of road construction machinery - details unknown.

5. Production was begun in 1956 on these high-speed power hammers, a secret product called V--(number not recalled). They were small, lightweight, portable hammers, which operated on the same principle as the DK hammers. They measured about 75 centimeters in height, weighed a total of 300 kilograms each, could be disassembled, but had no pile driver attachments or winches. The Army Engineer Corps was to use these hammers in the rapid construction of river crossing bridges. The diesel and steam hammers had a working average of 50-60 blows per minute, this hammer produced 300 blows per minute. The unit cost was 8,000 rubles. In 1956 the plant was supposed to produce 300 such hammers.

6. 25X1

Att. No. 1: An 18-page report on the Bashkirskaya ASSR, including information on the city of Sterlitamak. This report describes the following subjects in Bashkirskaya ASSR: (Note- item c below is negligible, based on rumor.)

a. Development of natural resources.
b. Industrial centers.
c. Prohibited zones and atomic bomb explosion.
d. City of Sterlitamak.
e. Population.
f. Transportation and public utilities.
g. Economic and sociological factors.
h. Civil defense.
i. A city plan of Sterlitamak pinpointing 91 locations.
j. A 29-point sketch and legend of the Sterlitamak Machine Construction Plant housing area.

Att. No. 2: An 11-page legend with sketches of the following sections of the Sterlitamak Machine Construction Plant.

a. The general plant area.
b. Machine shop.
c. Foundry.
d. Instrument shop.

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Att. No. 3: A detailed 23-page report on production data and related information on the Sterlitamak Machine Construction Plant. The following data are given:

a. Plant production in 1956 listing types of hammers made, unit costs, and number of units produced.

b. Foundry production, costs, and amount produced.

c. Plant capacity and quality of production.

d. List of machine components which made up a diesel power hammer, with a description of the production process.

e. Production estimates and costs. Projected production figures for the five-year period 1956-1960 as submitted to the Ministry of Construction and Road Machine Building. Breakdown of cost factor in percentages and rubles for the plant as a whole.

f. Production norms and how they were arrived at.

g. Organizational structure with an organizational chart attached.

h. Personnel.

i. Working conditions.

j. Raw materials and their origin.

k. Shipment of finished product.

l. Plant security.

Att. No. 4: A brief one-paragraph description of the laboratory at the Sterlitamak Machine Construction Plant.

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BASHKIR ASSR AREA INFORMATION INCLUDING CITY OF STERLITAMAK

1. [redacted] 25X1
[redacted] this Autonomous Republic was rapidly becoming industrialised. Prior to WW II the Bashkir ASSR was primarily an agricultural area. Many factories and workers with their families were evacuated to the Bashkir area during WW II, and this nucleus of industrialization remained after the end of the war. After 1950 graduates of Soviet institutes, tekhnikums, and universities were assigned to engineering, technical, and managerial posts in the Bashkir ASSR, and the Tatar-Bashkir population was augmented by an influx of Great Russians, Ukrainians, Belorussians and various minorities such as deported Volga Germans. Also after 1950 much new construction was initiated in the area, and villages such as Yermolayevo (N 52-44, E 55-53), Kumertau (N 52-45, E 55-45), Sibay (N 52-45, E 58-46), Salavat (N 53-20, E 55-49), and Oktyabrskiy (N 54-28, E 53-27) became towns with estimated populations of 7,000, 10,000, 15,000, 45-50,000, and 50,000, respectively, in 1956. The town of Sterlitamak became a growing city with an estimated population of 150-200,000 people in 1956. Many two and three-story apartment buildings were under construction in Salavat.

2. In 1955 two new railroad lines scheduled for completion in 1962 were under construction. One line was to connect Yermolayevo with the railroad center of Chkalov, and the other was to run from Magnitogorsk through Sterlitamak to Abdulino (N 53-42, E 53-40) where it would join the existent railroad line serving Kuybyshev. After 1950 all cobblestone and dirt surfaced roads in the Sterlitamak area were paved with asphalt, however [redacted] no new roads or roads under construction in this location. 25X1

Development of Natural Resources in the Bashkir ASSR

3. Development of the natural resources of the Bashkir ASSR, such as peat, petroleum, coal, copper and iron was initiated after 1950. Peat, coal, and iron were mined in Yermolayevo; coal and iron were found in Kumertau; and copper was extracted from mines in Sibay. [redacted] gold had been discovered in the Ishimbay (N 53-28, E 56-02) area. [redacted] 25X1

4. Petroleum production was under rapid development in the Bashkir ASSR. [redacted] Ishimbay (est. pop. 50,000) was scheduled to become a large oil production center, and was called a "second Baku". Ufa, the site of a large oil refinery, received great quantities of crude oil shipped by rail from the production centers of the Ishimbay-Salavat area. In 1956 a petroleum pipe line from Ufa to Kuybyshev was operational. [redacted] no details about this oil pipe lines, such as its capacity, depth, or dimensions. The road from Salavat to Ishimbay along the Belaya River was lined with large petroleum storage tanks [redacted] Details concerning these tanks were unknown. The non-potable water of the Belaya River was permeated with the taste and smell of petroleum. Oil was also found in Chishmy (N 54-35, E 55-56); est. pop. 15,000), Tuymazy (N 54-36, E 53-44; est. pop. 40,000), Bundyuk (N 54-35, E 54-33; est. pop. 10,000) and Oktyabrskiy. These towns were known to be rapidly expanding in 25X1 25X1 25X1

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size. [redacted] in this area the petroleum deposits were located not very far below the ground surface and that oil was easily obtainable. 25X1

[redacted] 25X1

Industrial Centers in the Bashkir ASSR

5. In accordance with the seven-year plan for 1955-1962, many new factories were constructed or scheduled to be constructed in the Bashkir ASSR and the area immediately west of this republic. [redacted] 25X1 [redacted] industrial centers in the Bashkir ASSR:

a. Ufa (est. pop. 1956, 250-300,000)

(1) [redacted] a petroleum industrial machinery plant in Ufa [redacted] employed about 800 workers. This factory received parts produced at the Machine Construction Plant in Sterlitamak. The latter plant [redacted] also supplied diesel and steam powered hammers, and spare parts to the Ufa GES (State Electrical Power Station). Construction of this GES installation was initiated in 1952 and it was scheduled for completion in 1960. [redacted] 25X1 25X1

(2) A mechanical repair shop employing about 1,000 workers which produced parts for other factories was also located in Ufa. No other details.

(3) [redacted] no other information concerning the large oil refinery located in Ufa. 25X1

(4) In the summer of 1956 [redacted] on two separate occasions three or four large trailer trucks traveling south on the Ufa-Sterlitamak highway. The canvas covered trailers appeared to be heavily laden and were at least three times as large as the prime movers. The trailers had at least four wheels on each side and the approximate height of the trailer load was five meters. [redacted] 25X1 25X1

(5) Chernikovsk, a town about 12 kilometers from Ufa, had a large aircraft factory employing about 25,000 workers. [redacted] 25X1

b. Salavat

(1) In addition to petroleum production, Salavat was the location of the 18th Combine of Machine Construction for the Petroleum Industry. The Sterlitamak Machine Construction Plant produced equipment for this large Combine which employed between 5,000 and 6,000 workers.

(2) A chemical factory in Salavat produced oxygen which was used in the Sterlitamak Machine Construction Plant.

(3) Prior to 1954, Salavat had also been the site of a large concentration camp.

[redacted] 25X1

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c. Krasnousolskiy (N 53-54, E 56-27, est. pop. 10,000)

This town had a large glass factory which employed between 4,000 or 5,000 workers.

d. Beloye Omero (N 54-00, E 56-10, est. pop. 10,000)

This town located about 50 kilometers north of Sterlitamak also had a glass factory which employed an unknown number of workers.

e. Beloretsk (N 53-58, E 58-24, est. pop. 50,000)

A large machine construction plant which manufactured springs was located in Beloretsk. Other details unknown.

Prohibited Zones and Atomic Bomb Explosions

6. there were prohibited areas around Ishimbay and Salavat (besides the concentration camp area). 25X1 there were 25X1 prohibited areas around Sverdlovsk in 1950. There were no prohibited zones in Sterlitamak however only factory employees or visitors with special passes were admitted to the various factories in Sterlitamak.

7. It was rumored that atomic bombs were exploded 1954/55 in the wasteland areas near Chkalov 25X1

Industry in Adjacent Areas

8. A railroad car manufacturing plant was located in Pervouralsk (N 56-54, E 59-55). This plant was known to have produced tanks during WW II.

9. Shop No. 40 of Uralmashzavod (Ural Machine Construction Plant) in Sverdlovsk produced excavators occupied a huge area, and was almost a small town in itself with plant owned apartment buildings, parks, clubs, movies, etc. Uralmashzavod also produced military equipment because there were some secret shops at the plant which were inaccessible to other employees. a large electro-technical factory which produced electrical equipment such as voltimeters was located in Sverdlovsk. An electrical wire and cable manufacturing plant and an instrument plant in Sverdlovsk shipped their respective products to the Sterlitamak Machine Construction Plant. No other details were known Magnitogorsk supplied iron ore and finished steel to the Sterlitamak plant and a machine construction plant in Orsk shipped large iron hooks and other iron and steel forged parts to this same installation.

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City of Sterlitamak

10. Sterlitamak, situated at the junction of the Sterli and Tamak Rivers which in turn flow into the Ashkadar River, was the capital of Bashkir prior to the Bolshevik revolution. In 1956 it was the administration center of Sterlitamak rayon. The city area was about 17 kilometers in length and eight kilometers wide, and was divided into the "old town" and the "new town" (points 49-87, and 4-86, respectively, on sketch of city plan, page 18). 25X1

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The city was situated in the steppes on relatively flat terrain which rose slightly in the eastern section of the town. East of Sterlitamak were several small mountains 300-400 meters in altitude.

11. The shallow (more than one and one-half meters), unnavigable Belaya River was located two or three kilometers east of Sterlitamak. This 30-50 meter wide river was a popular recreation area for swimming and boating. Prior to 1950, its polluted waters (described above) were used for drinking purposes in Sterlitamak, which resulted in epidemics of intestinal disease. In 1950-51, a water purification system was installed. The eastern bank of this river was from seven to ten meters above the ground level, and the western shore was three or four meters above the surrounding terrain. The Ashkadar River (point 88, page 18) was 15-20 meters wide and over one and one-half meters deep; its banks were only about two meters higher than the terrain. The Sterli (point 90, page 18) and Tamak (point 89, page 18) Rivers were four to five meters wide, one meter in depth, with banks about one meter above the ground level. All of these rivers were frozen in the winter, however they never overflowed their banks in the spring. About 50 kilometers north of Sterlitamak near the Belaya River, was a lake, Beloye Ozero. Also, directly north of Sterlitamak, beside the Belaya River, were some swamps.

12. There were no woods, canals or reservoirs in or near Sterlitamak. The temperature ranged from plus 35° centigrade in summer to minus 40° in winter. The average April or October temperature was from zero to plus 10° centigrade. The general climate was dry and healthy. In February and March there were strong winds and blizzards. Snow fell from November until April, and reached a height of one-half to one and one-half meters. In the city, snow plows removed the snow. There was little rain from April to November, and the summer was very hot. January was the coldest month.

Population

13. After 1940, Sterlitamak's population increased rapidly, particularly after several factories, such as the "Odessa Machine Construction Plant", were re-established in the city, complete with their entire equipment, working and managing personnel and families. After WW II this plant remained in Sterlitamak. [redacted] the population [redacted] reached about 100,000 in 1951 [redacted] Since then, expanding construction of new apartment buildings, of a new chemical combine, and new factories (see details below) brought the population up to 150,000 to 200,000 in January 1957. In 1956 about 60 percent of the population were industrial workers, 30 percent were engaged in agricultural work and 10 percent were government/Party, commercial, railroad, and hotel-restaurant personnel. 25X1 25X1

14. The population of Sterlitamak city consisted of Tatars, (40 percent); Bashkirs, (20 percent); Great Russians, (20 percent); Ukrainians, (5 percent); Belorussians, (5 percent); and various minorities (10 percent approximately). The minorities included 2000-3000 Volga Germans, 2000-3000 Jews, 1000-2000 Chuvashy, 1000-2000 Udmurti, some Latvians, and other Balts. The Tatars, Bashkirs, Udmurts, Chuvashes were Moslems. The Volga Germans, forcibly evacuated after WW II, had special passports (details unknown) and were not permitted to move out of Sterlitamak. Otherwise, all groups had the same legal rights and source did not notice any overt friction between the various groups.

15. Sterlitamak rayon was inhabited by the following nationalities: Russians, including white Russians, 10 percent; Ukrainians, 5 percent; Tatars, 15 percent; Bashkirs, 65 percent; and minorities (Jews, deported Volga Germans, deported Balts, Udmurti, Chuvashy, and others), 5 percent.

Transportation

16. There was an airfield north of Sterlitamak, somewhere between Sterlitamak and Tolbazy (N 54-02, E 55-53). an SAF football team frequently played against Sterlitamak civilian football clubs. These military players (both enlisted men and officers) always wore jerseys marked "Aviachast;" but were never in uniform. Also jet fighter aircraft frequently flew over Sterlitamak, in formations of four. The flights took place during the day and night. 25X1 25X1

17. Sterlitamak had no subway system or streetcars. The only means of public transportation were autobuses which went from the central station (point 69, page 18) to the various factories and residential areas. The autobus route was identified by a sign stating a destination such as 'Soda Factory', 'Cement Factory' or 'Machine Construction Factory'. The autobus service was very poor and irregular. A streetcar system was planned to be operative in 1960.

18. In 1954 and 1955 freight trains with canvas-covered flatcars passing through Sterlitamak on their way to Ufa. 25X1 the cargo was tanks and aircraft which were being shipped to China. 25X1

Public Utilities

19. Sterlitamak had a radio station, location unknown to source. Up until 1957 Sterlitamak had no television station, the nearest one being in Ufa. no radio jamming station in the city. Electric current in Sterlitamak was 127 volts, AC. 25X1

Economics 25X1

20. Sterlitamak stores did not have a large selection of clothing and frequently there were shortages of butter, sugar and various consumer items such as radios, sewing machines and furniture. As of 1955 or 1956 a larger supply of consumer items was available in Sterlitamak. 25X1 in 1959 Chinese and German textiles were sold in 25X1 local stores. There was no shortage of potatoes, eggs, honey, or meat, as all these items were brought in by the kolkhoz workers and sold on the free market. There was a black market on textiles and radio sets.

Sociological Factors

21. Prior to 1951 there were were many appendectomies caused by drinking impure water from the Belaya River. Also, there was much typhus and dysentery. From 1951-1956 annual immunization shots against dysentery and typhus were compulsory.

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22. Sterlitamak had the following newspapers: Sterlitamak Rabochiy, a four-page Russian language daily; Leninets, a Russian language daily for the Komsomol; Izvestiya and Pravda from Moscow; a six-page Bashkir language daily from Ufa, the Bashkirstan; and a six-page Russian language daily, Sovetskaya Bashkiria, all of which were sold for 0.20 rubles per copy.

23. The orthodox church (point 84, page 18) was usually full on holidays. There were also several Moslem mosques [redacted] 25X1 [redacted] the Russians as well as the Moslems were very religious and most of them followed the religious dogmas such as fasting and praying, not eating meat, etc. However, the sons or relatives of priests were not given responsible positions, either in the Party or in factories, and therefore many persons concealed the fact that a priest was a member of their family.

24. The Bashkirs, Tatars and Chuvashy kept apart from the rest of the populace and had their own settlements. There was no open tension or friction, but the Tatars and Bashkirs resented the fact that most leading positions were occupied by Great Russians. The Great Russians also showed distinctly that they considered themselves superior to the Tatars and Bashkirs. The village "Konyakovka" (point 2, page 18) was inhabited only by Chuvashy. The village "Tanevka" was inhabited only by Ukrainians.

25. There was much corruption and bribery in Sterlitamak. For instance, if a department store received a shipment of radio sets, only a few were sold to the public, the rest were either sold to acquaintances in exchange for turn-about favors or sold on the black market at a 50 percent increase in price. Or, whenever sugar and butter arrived at the government store, only a small portion of the shipment was sold to the public, the rest went on the black market. It was also customary for employees to give monetary gifts to their foremen or managers if the workers wanted to receive better job assignments. 25X1

Personalities

26. [redacted] Zaychudinov (fnu), a Bashkir, [redacted] was one of the leading 25X1 Party officials in Sterlitamak. The secretary of the Communist Party in Bashkir ASSR was (fnu) Ignatjev, a Russian. This man, who had been imprisoned under Stalin and reinstated by Malenkov, came to Bashkir in 1954. [redacted] 25X1 [redacted]

Civil Defense

27. In 1955 there were two one-hour civil defense lectures given in the Sterlitamak Machine Construction Plant. These lectures took place during work hours and were conducted in an open area by a factory engineer, called the "Engineer for Technical Safety". Almost all plant employees heard these lectures which dealt with the size and power of atomic bombs, and various defensive measures such as special clothing and shelters. Literature on civil defense against atomic bomb attack was distributed to the listeners and was available in the plant technical library. [redacted] never [redacted] any air raid tests or simulated 25X1 air raids in Sterlitamak. The city itself had no air raid shelters but all new buildings had basements [redacted] could be used for this purpose. [redacted]

[redacted] 25X1

stated that in 1955 when the Suez Canal crisis threatened to start a new war, the people in Sterlitamak were very much afraid of atomic bombings.

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Sterlitamak City Plan

28. Refer to page 18 , sketch of the city plan of Sterlitamak. The following legend identifies numerical designations:

Point 1. Mountains east of Sterlitamak, approximate altitude 300-400 meters.

Point 2. Village Kosyakovka. This village consisted of about 150 houses inhabited by 2000-3000 Chuvash nationals.

Point 3. Railroad line from Ufa to Kumertau-Yermolayevo (single or double track).

Point 4. Kosyakovka railroad marshalling station. After 1954 the railroad station, a small one-story wooden building, was augmented by construction of several one and two-story brick apartment, office, and storage buildings. This station was still under construction and was being extended in 1957. It was scheduled to become a railroad junction for the new Magnitogorsk-Sterlitamak-Abdulino railroad line (see above). The railroad station had 7-10 tracks and shunting facilities.

Point 5. Dump.

Point 6. New construction area. In 1952-1956, about 15-20 two and three-story stucco and brick apartment buildings, about 35 x 15 meters in area dimension were put up in this area. Construction of apartment buildings was still going on in January 1957.

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Point 7. Spur line servicing the Mechanical Repair Plant (point 18), the Sterlitamak Machine Construction Plant (point 12), the brick factory (point 10), and the silicate factory (point 21).

Point 8. Garages. These were three or four, one-story white stucco buildings, about 30 x 12 meters in area dimension. They served as garages for about 50 two and one-half to three ton ZIS trucks which belonged to the Sterlitamak Construction Trust (point 32).

Point 9. School. This was a three-story buff stucco building about 70 x 20 meters in area dimension, for the children of employees of the Sterlitamak Construction Trust.

Point 10. Brick factory. This was a fenced-off area about 70 x 50 meters in dimension which contained a large one-story red brick building about 50 x 40 meters in area dimension. about 250 people worked in the brick factory.

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Point 11. Highway. This was a former cobblestone road about five to six meters wide which went from Ufa to Rayevskiy. It was asphalt paved in 1954/1955.

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Point 12. Sterlitamak Machine Construction Plant. This plant, erected in 1941, employed 1600 workers. The plant manufactured power hammers and pile drivers. (See separate report)

Point 13. Residential area. This area contained old barracks and new modern apartment buildings for the workers of the Machine Construction Plant. See page 19 and paragraph 30 for details.

Point 14. Belaya River.

Point 15. Recreation area. This area contained two summer camps (for children) with beaches and bath houses, bathing area and row boats.

Point 16. Railroad spur. This was a spur line leading to the cement factory (point 26) and to the soda factory (point 25).

Point 17. Military area. This was an area containing about 30 or 40 one-story wooden barracks about 35 meters square. These barracks were prefabricated, called "Finnish" houses, constructed in 1953. In 1953 about 3000 or 4000 soldiers of the engineer branch of service arrived in Sterlitamak and were assigned as chauffeurs, masons, and laborers engaged in the construction of the new buildings in Sterlitamak. This area was about one kilometer by 100 meters in area dimension. The soldiers' uniforms had black shoulderboards.

Point 18. Mechanical Repair Plant. This was a fenced-off area about 300 x 200 meters in area dimension. The plant area contained five or six one-story red brick buildings about 100 x 50 meters in area dimension and a chimney about 50 meters in height. This plant was still being enlarged in 1956. [redacted] the plant employed about 1000 workers. [redacted] the plant produced spare parts for various factories in Bashkir ASSR.

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Point 19. Orchards. [redacted] in 1960 a new apartment building for the workers of a chemical combine and a synthetic rubber plant (under construction in 1957) would be built at this site.

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Point 20. Electric power station. Prior to 1955 this power station serviced only the soda and the cement factories, whereas the rest of the town received its electrical power from Salavat. In 1955 this power station was greatly enlarged to provide electricity for the entire town of Sterlitamak. [redacted]

25X1

Point 21. Silicate Plant. This was an area about 350 x 250 meters in dimension. It contained an unknown number of two-story red brick buildings about 90 x 50 meters in area dimension. This plant was being enlarged and new buildings were under construction in 1957. [redacted]

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25X1

Point 22. New construction area. Many three and four-story brick apartment buildings were put up in this area from 1953 to 1957. Construction was still going on on a large scale in 1957. 25X1

Point 23. Dump area. This was a small artificial lake where chemical wastes from the soda factory were dumped. It had a revolting smell and one man, unaware of the nature of this lake, who went there for a swim, was never seen again (date-name unrecalled).

Point 24. Cable line. This was a line of two steel cables approximately five kilometers in length, 10-15 meters above ground, leading from the mountains (point 1) to the soda combine (point 25). Small cars, about 2 x 1 x 2 meters in size brought raw material from the mountains to the soda factory. At the point where the cable line passed over the highway (point 91) a strong steel protective net was erected to prevent the ore from falling on the highway.

Point 25. Soda Combine. This was an area about 1,200 x 800 meters in dimension containing about 15-20 three to four-story red brick buildings, some 150 x 25 meters in area dimension, others smaller. There were also four or five chimney stacks about 100 meters in height. The yellow colored smoke which came out of the chimneys was said to be harmful. 25X1

This factory was constructed following WW II and was said to be the biggest soda factory in Europe. It employed about 15,000 people. Prior to 1955 this factory supplied oxygen for welding purposes 25X1

Point 26. Cement factory. This was an area about 600 x 300 meters. 25X1 in 1957 construction was still going on. The cement factory was built in 1951 and employed about 1,000 workers. The factory had three chimneys each about 70 meters in height.

Point 27. Workers' residential area. This was a residential area for the workers of the Mechanical Repair Plant and the Silicate Plant. It contained two to four-story red brick buildings about 70 x 20 meters in area dimension, all of which were new buildings put up after 1951.

Point 28. Orchards.

Point 29. Chemical Combine and Synthetic Rubber Plant. In 1955 the construction of a new chemical combine and a synthetic rubber plant was started in this area, and was still in progress 25X1 It was scheduled to be completed around 1960 Sterlitamak would be one of the largest chemical producing cities in the Ural area. 25X1

Point 30. Dump area.

Point 31. Residential area. This area contained one-story wooden barracks about 50 x 10 meters in area dimension. These barracks were scheduled to be torn down 1957-1960 and replaced by new wooden apartment buildings.

Point 32. Sterlitamak Construction Trust. This was a large three or four-story building containing the headquarters of the Sterlitamak Construction Trust. This trust was in charge of the construction of new apartment buildings as well as factory buildings in Sterlitamak, and employed about 15,000 workers in addition to the 3,000-4,000 man engineer detachment.

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Point 33. Militia building. This one-story wooden barracks about 30 x 8 meters in area dimension contained the Seventh Section of the Militia and a passport section. The militia personnel wore dark blue caps and dark blue uniforms.

Point 34. Football stadium. This stadium had a capacity of about 10,000.

Point 35. New construction area. In 1956 construction of new three and four-story apartment buildings was started in this area.

Point 36. Football stadium. This was a football stadium with a capacity of about 7,000.

Point 37. Construction area. It was planned to put up new apartment buildings in this area and construction was just about to start

25X1

Point 38. House of Culture. This was a beautiful three to four-story gray stone building about 70 x 50 meters in area dimension, completed in 1955. It was constructed in Roman style with marble columns and figures in relief sculpture. It contained a library, meeting rooms, recreation rooms, a gymnasium and concert rooms.

Point 39. Water tower. This cylindrical gray cement water tower about 30 meters in height, constructed in 1953 or 1954, supplied water to Sterlitamak.

25X1

Point 40. School. This was a three-story buff stucco seven-year school, about 40 x 15 meters in area dimension.

Point 41. Hospital. The hospital consisted of six or seven two-story white stucco buildings about 60 x 20 meters in area dimension, which contained modern, well equipped wards.

Point 42. Main railroad station. This was a two-story red brick building about 30 x 20 meters in area dimension. Two passenger trains arrived daily from Ufa and two passenger trains left daily for Ufa. There were also two-three daily freight trains transporting petroleum from Salavat which passed through this station bound for

25X1

the Ufa pipeline. The station had about 10-12 tracks, depots, shunting yards and a locomotive repair shop.

Point 43. Meat Combine. This was a large combine where cattle were slaughtered and meat was canned. No details.

Point 44. Military Installation. These were three two-story red brick buildings about 40 x 20 meters in area dimension. These buildings were not fenced off, but a soldier in air force uniform with blue shoulderboards, guarded the entrance of each building. 25X1 this was some sort of an air force technical school but could not give any other details.

Point 45. Warehouses. This area contained three or four one-story wooden barracks about 40 x 15 meters in area dimension. 25X1

Point 46. Drilling Machine Factory. This was an area about 850 x 350 meters which contained one red brick two-story building about 150 x 100 meters in dimension and 10-15 one-story buildings of smaller size. This factory was formerly located in Odessa, and was transferred during WW II from Odessa to Sterlitamak where it remained after WW II. This plant was called the Lenin Machine Construction Plant, and contained a forge shop, two or three mechanical shops, two preparatory shops, a large foundry and instrument shop, a chemical laboratory and various other shops. It employed about 7,000 workers engaged in the production of drilling machines. 25X1 this shop turned out about 50 drilling machines monthly.

Point 47. Residential area. This was an area containing barracks for the workers of the drilling machine factory (point 46 above). The area also had its own polyclinic (point 58 below), theater, restaurants, club and a school. These barracks were originally one-story, red brick buildings which were being replaced by three to five-story red brick buildings, about 150 x 50 meters in dimension. This construction was still going on 25X1

Point 48. Bridge. This was an old wooden bridge of the continuous truss type, about 50-60 meters in length and 6 meters wide, for cars and pedestrians. It stood on columns, one of which was in the center of the river.

Point 49. Shoe factory. This was a two-story, buff stucco building about 40 x 25 meters.

25X1

Point 50. Lumber shop and sawmill.

Point 51. Maternity hospital. This was a three-story buff stucco building about 20 x 15 meters in area dimension.

Point 52. Post Office. This was a new two-story red brick building about 30 x 20 meters in area dimension which contained the postal, telephone and telegraph offices.

25X1

Point 53. Hotel. This was an old two-story wooden building, 40 x 20 meters in area dimension, name unrecalled.

Point 54. Football field.

Point 55. City polyclinic. This was a three-story buff stucco building about 25 x 20 meters in dimension.

Point 56. Street. This street with a Bashkir name was asphalt paved and about six meters in width.

Point 57. Bridge. This was a new wooden, cantilever type bridge constructed around 1950 for vehicles and pedestrians. It was about 150 meters in length and 10 meters in width.

Point 58. Polyclinic. This was a three-story buff stucco building about 40 x 15 meters in area dimension which serviced only employees of the drilling machine factory.

Point 59. Movie theater. Capacity, 500.

Point 60. Prospekt Stalina. This was an asphalt paved street about six meters wide, lined with trees; one of the main streets.

Point 61. Prospekt Lenina. This main street was asphalt paved, about six meters wide, and lined with trees.

Point 62. Military installation. This was an area containing military barracks. There were always soldiers in this area, however source could not recall any details about the number of troops, branch of service, etc.

Point 63. Movie theater. This was a two-story stucco building with a capacity of about 500 people.

Point 64. Salavat Yulayev street, changed to Karl Marx street. It was the main business street of Sterlitamak, was asphalt paved, about six meters wide, and lined with trees.

Point 65. City administration building (Gorodskoy Ispolnitelnyy Komitet-Ispolkom). This was a new three-story green stucco building about 60 x 30 meters in area dimension, containing offices for city management and city planning.

Point 66. Opera building. This was a three-story buff stucco building about 30 meters square with a seating capacity of about 1,000.

Point 67. Department store. This was a large four-story buff stucco building.

Point 68. Restaurant. This was a two-story buff stucco building about 30 x 15 meters in area dimension with a capacity of 150-200. Apartments were located on the top floor.

Point 69. Central bus station.

[redacted] 25X1

Point 70. Institute. This was a three or four-story buff stucco building about 25 x 15 meters in area dimension. It was constructed in 1954 or 1955 and was either a geological or a petroleum institute. [redacted] 25X1

Point 71. Movie theater, Salavat. This was an old one-story red brick building about 60 x 30 meters in area dimension, with a seating capacity of 500.

Point 72. Park and summer theater.

Point 73. Department store, GUM. It was a three-story buff stucco building about 35 x 15 meters in area dimension.

Point 74. City square. The city center (250 meters square) was paved in 1956, and contained a garden and benches. Various meetings and demonstrations took place there.

Point 75. Railroad line to Salavat-Ishimbay-Kumertau-Yermolayevo.

Point 76. Gosbank. This was a three-story, buff stucco building, about 25 x 15 meters in area dimension.

Point 77. Communist Party building. This was a three-story gray stone building about 35 x 15 meters in area dimension, which contained offices of the Gorkom of the Communist Party.

Point 78. Military Installation. This was a four-story buff stucco building about 35 x 15 meters in area dimension. [redacted] believed [redacted] to be some kind of an aviation school. [redacted] young, neatly dressed soldiers in AF uniforms with blue shoulderboards enter and leave this building. 25X1

Point 79. Book store. This was a one-story buff stucco building about 15 x 10 meters in area dimension.

Point 80. Restaurant and tea room, Chaynaya. This was a two-story white stucco building about 20 x 15 meters in area dimension with a seating capacity of approximately 70.

Point 81. Basarnaya ulitsa. This street was asphalt paved and about six meters wide.

Point 82. Krasnyy Proletar Machine Construction Plant. This plant area was about 350 x 200 meters in dimension. [redacted] the factory employed 500-1,000 people. [redacted] 25X1

Point 83. Red Cross Offices. This was a two-story wooden building about 30 x 20 meters in area dimension.

Point 84. Orthodox Church.

Point 85. Jail. This was an area about 250 x 150 meters, with a perimeter

[redacted] 25X1

25X1

wall five to six meters in height. 25X1

Point 86. Alcohol factory. This factory, exact location unknown, supplied raw alcohol (spirt) to the laboratory 25X1

Point 87. Market place.

Point 88. Ashkadar River.

Point 89. Tamak River.

Point 90. Sterli River.

Point 91. Road, Ufa-Ishimbay-about six meters wide, asphalt paved.

29. The city of Sterlitamak had an officers club (dom ofitserov) 25X1 Many officers (number unknown) lived on Prospekt Lenina, Prospekt Stalina and Basarnaya ulitsa. There was also a new oxygen plant, constructed in 1956, location unknown 25X1

Sterlitamak Machine Construction Plant Housing Area

30. 25X1

This area, its schools, stores, post office, and other facilities were only for employees of the Sterlitamak Machine Construction Plant and the Sterlitamak Construction Trust. The following legend identifies numerical designations:

Point 1. Road from Ufa (point 11, page 18).

Point 2. Residential area. This area contained about 18-20 one-story white stucco apartment buildings about 40 x 15 meters in dimension, with a gray tin roof. These buildings were put up on Michirina ulitsa in 1954 or 1955 and were only for the employees of the Sterlitamak Construction Trust. (The irregular house numbering system is shown on sketch.)

Point 3. Grocery store. This was a one-story gray stucco building about 20 x 10 meters in size.

Point 4. Club. This was a one-story buff stucco building about 35 x 15 meters in area dimension containing a library, a club, a motion picture theater for 200 spectators, and a dining room for about 70 people.

Point 5. Orchards.

Point 6. Gardens.

Point 7. Apartment buildings. This area contained four or five three-story buff stucco apartment buildings about 35 x 15 meters in area dimension, constructed in 1955.

25X1

[redacted] 25X1

Point 8. School. This was a four-story buff stucco building about 60 x 50 meters in area dimension, which was used as a children's school in the mornings and as an evening tekhnikum for workers of the Machine Construction Plant.

Point 9. Residential area. This area contained 15-20 two-story buff brick apartment buildings about 35 x 15 meters in size, constructed in 1952. Foremen and outstanding workers of the Machine Construction Plant were billetted in this area.

Point 10. School under construction. At the end of 1956 construction was started in this area on a new factory tekhnikum institute only for the employees of the Machine Construction Plant.

Point 11. Chalets. There were six chalets of white stucco, about 30 x 7 meters in area dimension, with a gray tin roof, each containing two apartments for the engineers of the Machine Construction Plant. [redacted] The floor space of the living room was about 45 square meters; bedroom, 13 square meters; and kitchen, about 10 square meters and there was a bathroom and a glass enclosed veranda. The chalets had gardens and orchards. The numbering system is shown on the sketch. 25X1

Point 12. Football field.

Point 13. Area of the Machine Construction Plant (point 12, page 18). [redacted] 25X1

Point 14. Loading platforms and one-story wooden warehouses about 35 x 15 meters in dimension.

Point 15. House of Culture, to be constructed in 1958-1960.

Point 16. Projected football stadium.

Point 17. Residential area. This area contained 30 or 40 privately owned cottages, each with its own garden and yard. Those who had the money to buy such a house could do so, and most of the home owners were engineers, technicians, managers, foremen, of the Machine Construction Plant.

Point 18. Residence of the director of the Machine Construction Plant. This was a one-story buff stucco building about 20 meters square with an orchard, garden and yard.

Point 19. Soldiers' barracks. This area (point 17, page 18) contained about 30 or 40 one-story prefabricated, wooden barracks about 35 meters square.

Point 20. Residential area. This area contained about 30 one-story stucco barracks, about 50 meters x 10 meters, for the workers of the Machine Construction Plant. These crude barracks which were put up during WW II and had no plumbing, running water or canalization.

[redacted] 25X1

25X1

Point 21. Children's kindergarten. This was a one-story wooden building about 25 meters square, for the care of 40 children.

Point 22. Day nursery. This was a one-story buff stucco building about 20 x 10 meters in area dimension, for the care of 50 children.

Point 23. Post Office for area designated as 'Sterlitamak 5'.

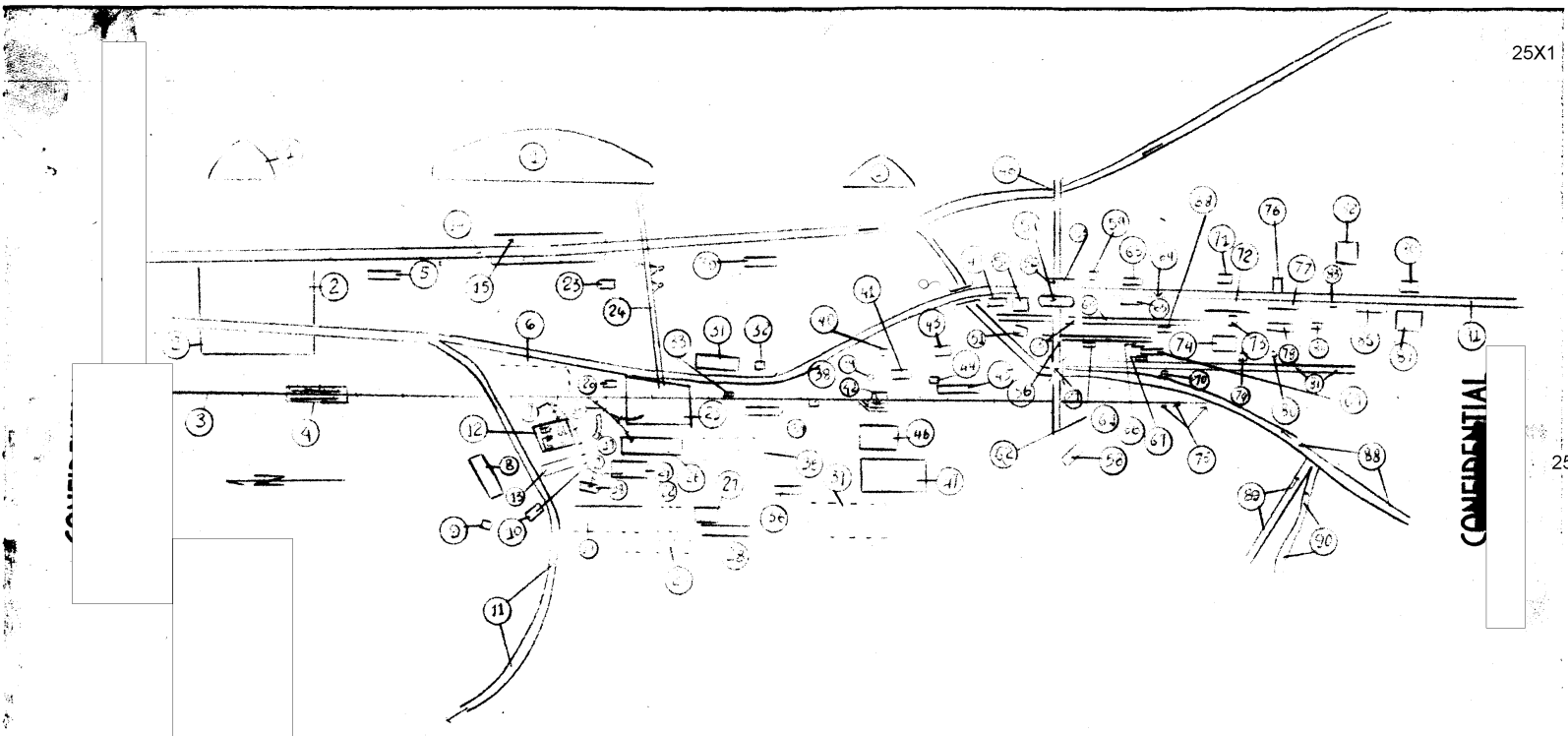
Point 24. Public bath and barber shop. This was a one-story buff stucco building about 35 x 10 meters in dimension, constructed in 1956.

Point 25. Social Welfare Section. This was a one-story white stucco building about 200 meters square, where employees dealt with workers' personal problems such as living quarters, health, children of employees, etc.

Point 26. Polyclinic. This was a one-story white stucco building about 35 x 50 meters in area dimension. The polyclinic was open at all times and was staffed by three doctors and six nurses.

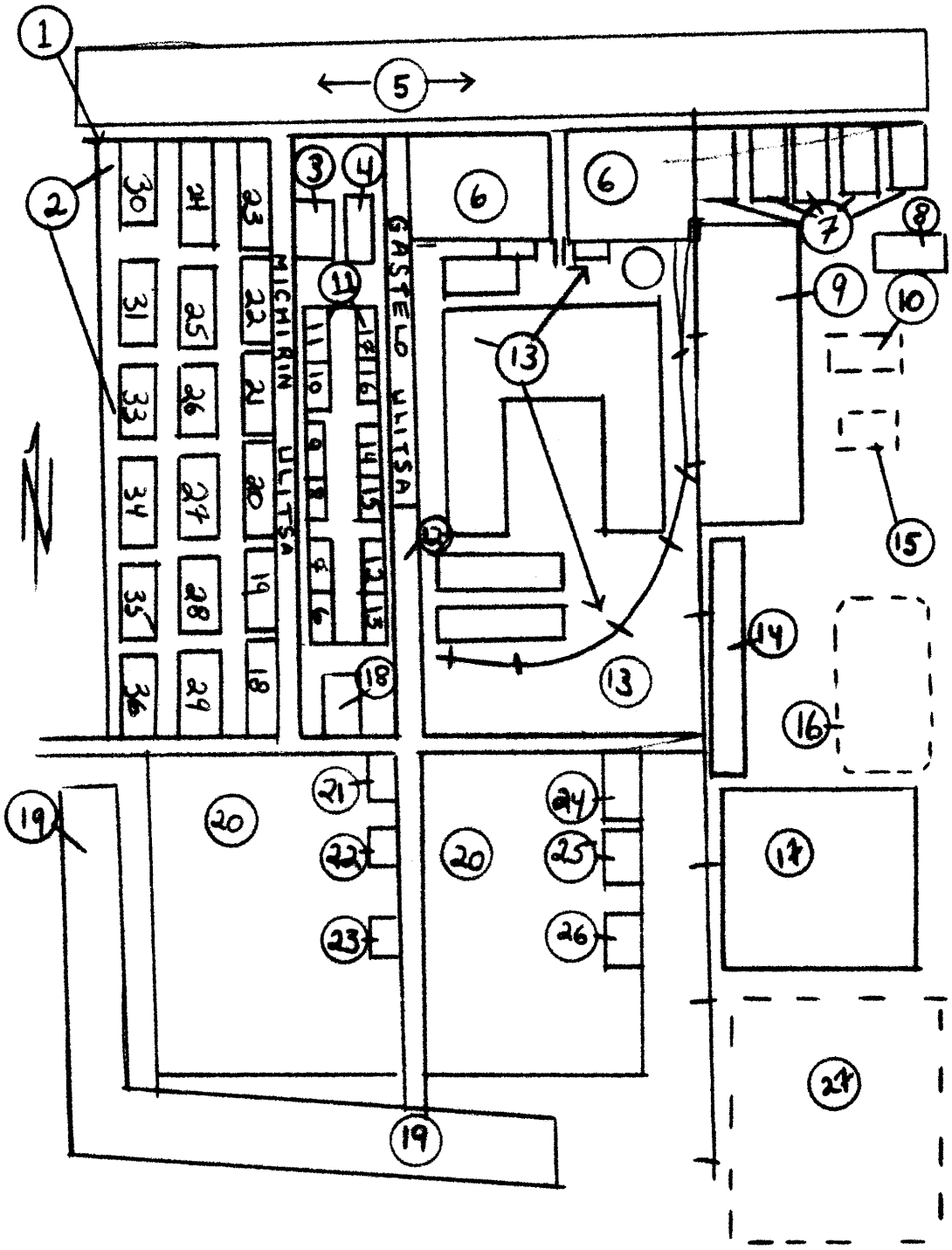
Point 27. Projected housing area.

25X1



25X1

Workers' Settlement, Sterlitamak Machine Construction Plant
(not to scale)



25X1

25X1

STERLITAMAK MACHINE CONSTRUCTION PLANT LAYOUT

25X1

Plant Layout

2. sketch of the Sterlitamak Machine Construction Plant layout. Unless otherwise indicated, all buildings were constructed of concrete, covered with buff colored stucco. All shop buildings, unless otherwise indicated, had saw-tooth skylight roofs. The plant occupied an area about 800 x 400 meters in dimension. The following legend identifies numerical designations and indicates the purpose of the buildings:

25X1

Point 1. Testing area. This was an open area about 20 meters square. Steam-powered hammers and pile drivers were tested here before being shipped out of the plant.

Point 2. New metal construction shop. This was a new, unfinished building. Construction started at the end of 1956, and the shop was scheduled to be completed and operative by 1960. This was to be a one-story brick building about 70 x 20 meters in area dimension, with a skylight saw-tooth roof, and a small second floor balcony for shop offices.

Point 3. Main building. This was a one-story, U shaped building. The center section of the building was about 250 x 50 meters in size and the wings were each about 100 x 50 meters in area dimension. This building contained offices, a chemical laboratory, stockrooms, a foundry, a machine shop, a forge shop, a metal construction shop, a secret experimental shop, and an assembly shop (listed in detail below).

a. Experimental shop. This was a secret shop, about 50 meters in length and 10 meters in width.

25X1

this shop made the prototype of a portable, high speed power hammer for the rapid construction of bridges, and perhaps other secret items for the Army. A Soviet Army colonel, (name unknown) whose uniform shoulderboards bore engineer insignia, was usually on duty in this shop. In 1956 this shop also experimented on several new types of road construction machinery - details unknown.

b. Assembly (sborochnyy) shop. This was an area about 50 x 30 meters in dimension with special assembly jigs for final

25X1

[redacted] 25X1

assembly of power hammers and special stands for testing the diesel powered hammers.

c. Instrument shop. This was an area about 25 meters square. This shop made drills, nuts, bolts, screws, calipers, and various precision instruments used in the machine or other shops. This shop made various precision instruments with tolerances of about 0.05 millimeter. The instrument shop had an unknown number of milling, polishing, grinding, and drilling machines, and lathes. See page 12 and paragraph 6 below for a more detailed sketch of the instrument shop.

d. Metal construction shop. This was an area about 25 meters square where pile drivers (kopery) were assembled. This shop had no machinery, only an open area for assembly.

e. Forge shop. This shop occupied an area about 50 x 40 meters in dimension and contained one Soviet make press, four forge hammers, and [redacted] make mazut furnace, type "Jamesburg". 25X1

f. Machine shop. See page 10 and also paragraph 4 below for a detailed description of this shop.

g. Administration offices. This section of the building was three stories high and about 60 x 25 meters in area dimension. On the first floor were a chemistry laboratory, a KIP (Kontrolnyy Izmeritelnyy Punkt - Control Measuring Station), a telephone switchboard, and supply offices. The switchboard had 35-40 extensions. The director, his deputies, the chief engineer, the engineers, technicians, and each section and shop had an extension. The director also had a loudspeaker system through which he could speak to individual shops or to all shops in the entire plant. On the second floor were offices for the plant director, his staff, the planning section, and the Party organizer. On the third floor were bookkeeping and finance offices, a technical library, and offices for technologists, technicians and draftsmen.

h. Generator station. This was an area about 25 x 10 meters in dimension, containing two generators. [redacted] 25X1

i. Foundry. See page 11 and paragraph 5 below for details on the foundry.

Point 4. Preparatory (Zagotvitelnyy) shop. This shop occupied an area about 40 x 20 meters in dimension. Here steel and iron were cut to desired sizes with the aid of steel cutting scissors.

Point 4a. Stockroom. This stockroom occupied an area about 20 x 10 meters in dimension (one-fourth of the building's floor space). Iron, steel, benzine, oils, gravel and sand for the foundry, welders' eye protectors, protective clothing, etc., were stored in this room.

Point 5. Loading platform for the railroad spurline.

Point 6. Personnel offices. This building was about 15 x 12 meters in area dimension with a gray tin roof. It had offices for the personnel section, the plant committee (Zavkom) and the trade union (profsoyuz).

[redacted] 25X1

25X1

Point 7. Furnace building. This building was about 25 x 15 meters in area dimension with a gray tin roof. It contained two furnaces which supplied heat for the entire plant. In 1957 it was planned to enlarge the heating facilities by constructing pipe lines to the employees residential area.

Point 8. Chimney. This was a chimney for the furnace, about 50 meters high and about six meters in diameter.

Point 9. Storage areas. This building was about 100 x 15 meters in area dimension with a metal roof. It contained sand, cement, steel, iron, and various other items.

Point 10. Entrance. The plant had two gates for employees and one gate for vehicles. Each employee gate was controlled by a male guard, and one of the guards checked vehicles utilizing the vehicle entrance gate.

Point 11. Guardhouse. This was a building about 15 x 12 meters in area dimension, which contained guard alert rooms and a first aid station. The first aid station was open 24 hours daily, staffed by one or two nurses on each of three shifts,

Point 12. Open storage areas. These were three areas, each about 20 x 10 meters, where refuse from various shops was dumped.

Point 13. Model-making shop. This was a building about 25 x 15 meters in area dimension. Half of the building (a) was taken up by a carpentry shop which produced wooden packing boxes and which repaired doors, windows, etc. The other half of the building (b) contained a model-making shop which made foundry molds.

Point 14. Railroad line. This was a Soviet standard gauge railroad spur line which serviced the plant. A side branch led to the foundry area.

Point 15. Fence. This was a wooden fence about three and one-half to four meters high, topped with several strands of barbed wire.

Point 16. Garage, This was a garage 40 x 10 meters in area dimension for 15-20 ZIS-150 trucks, three mobile cranes (capacity unknown), a Pobeda sedan for the plant director, and a Moskovich sedan for the chief engineer.

Point 17. Park area.

Point 18. Projected foundry. This was an unfinished construction about 150 x 70 meters in area dimension, which was started in 1954. In January 1957 the building was not equipped, but it was scheduled to contain new, modern furnaces for steel making.

Point 19. Gas station. This station had an underground oil and gasoline storage area seven meters square and pumps for servicing plant vehicles.

Point 20. Repair shop. This was a building about 50 x 25 meters in area dimension, which contained two shops.

a. Electrical repair shop. This was an area about 15 x 25 meters in dimension where motors, cables, and electrical components and appliances for plant machinery and plant buildings were repaired.

25X1

25X1

b. Mechanical repair shop. The shop personnel in this area (about 35 x 25 meters in dimension) repaired plant buildings and machinery. This shop contained drilling machines (made in the Leningrad Factory i/n Sverdlov) and milling, grinding, and polishing machines, and lathes. Some of the machinery were of make and bore a sign Other machines were of Czech (Skoda), Hungarian (Matyas Rakosi)

25X1

Point 21. Railroad gate. This gate was closed except when shipments were expected to arrive or leave.

3. Attached to the plant, but not part of the plant, was a snack bar. The snack bar was located inside the plant territory, near the entrance, in a white stucco building, about 10 x 7 meters in area dimension. The food, and the two or three waitresses were provided by the Sterlitamak City Commercial Section. The waitresses were not paid by the plant.

Machine Shop Layout

4. Refer to page 10 , sketch of the machine shop. This shop occupied an area about 140 x 50 meters in dimension. There was a two meter space between parallel machines and an aisle four meters wide separated the lines of machinery.

25X1

Point 1. Nine Soviet make turret lathes.

Point 2. One large planing machine type "Liberty"

25X1

Point 3. One Soviet make vertical boring and turning machine.

Point 4. Intermediate storage area. This was an area about 40 meters square where items being processed were stored until taken to other machines or shops.

Point 5. Waste area. This was an area about 10 meters square containing two large wooden boxes for scrap and spoilage.

Point 6. OTK (Technical Control Section). This was an area about 10 meters square.

Point 7. Three Soviet make gear cutting machines, type "Komsomolets".

Point 8. Two vertical planing machines, believed to be of Czech make.

Point 9. Three Soviet make vertical milling machines.

Point 10. Four horizontal boring machines, two of make, one of Soviet make, one of Czechoslovakian make.

25X1

Point 11. Two radial drills, Hungarian make, type "Matyas Rakosi".

Point 12. Instrument storage. This was an area about 40 meters square.

Point 13. One Soviet make horizontal milling machine.

Point 14. One vertical boring machines, type "Hiller Baker", either make.

25X1

Point 15. One Soviet make vertical boring and turning machine.

25X1

[redacted] 25X1

Point 16. Four Soviet make lathes, type DIP 300, for preparing diameters of 200-300 millimeters.

Point 17. Five very long Soviet make lathes, type DIP 500, for preparing diameters of 500-600 millimeters.

Point 18. 25-30 Soviet make lathes, type DIP 200, for preparing diameters up to 100 millimeters.

Point 19. Three small vertical milling machines, of Soviet make.

Point 20. One universal milling machine, of Soviet make.

Point 21. Three planing machines of Soviet make.

Point 22. Four polishing machines, of Soviet make. Two of these had magnetic tables for wheels.

Point 23. Two or three old lathes, not in use.

Point 24. Four bolt and nut-cutting machines of [redacted] make. 25X1

Point 25. Machinists' section. This was an area about 50 x 10 meters in dimension containing eight or nine machinists' benches, and several drilling machines.

Foundry Layout

5. Refer to page 11 , [redacted] sketch of the plant foundry layout. 25X1
The shop occupied an area about 75 x 50 meters in dimension. The following legend identifies numerical designations:

Point 1. Drum used for cleansing small parts.

Point 2. Cleansing hoses. This was an area about three meters square where parts were sandblasted.

Point 3. Trimming section. This was an area about eight by four meters containing a polishing stand. Here rough edges were removed from parts with the use of carborundum.

Point 4. Air hammers. This was an area about seven meters square containing 12-15 hammers and blowers.

Point 5. Welding section. This was an area about seven meters square for acetelyne welding processes.

Point 6. Storage area. This was an area about 30 x 10 meters in dimension used for the storage of office supplies. At one time the plant chemical laboratory was to be relocated in this area.

Point 7. Annealing oven. This was a high temperature furnace about 10 x 7 meters in area dimension.

Point 8. Stoking area for the annealing oven. This was an area about 10 x 3 meters in dimension.

Point 9. Crane. This was a 10-ton capacity, overhead traverse crane.

Point 10. Refreshment stand.

Point 11. Shop manager's office. This was an office about four meters square.

[redacted] 25X1

25X1

Point 12. Certrifugal casting. This was an area about three meters square.

Point 13. Crushers. This was an area about 30 x 10 meters containing two crushers which prepared sand and earth for the molds.

Point 14. Coal storage. This was an area about 10 x 5 meters.

Point 15. Cooling area. This was an area about 10 meters square where parts were cooled and cleaned.

Point 16. Two cupola furnaces 15 x 7 meters in area dimension.

Point 17. Bessemer process steel furnace, 10 x 7 meters in area dimension.

Point 18. Pneumatic hammers section. This was an area about 15 x 10 meters in dimension containing six special pneumatic hammers for shaping large parts.

Point 19. Hand molding section. This was an area about 15 x 12 meters in dimension, for molding parts by hand.

Point 20. Molding section. This was an area about 20 x 5 meters in dimension, containing nine molding bunkers.

Point 21. Core making furnace (sterzheniye). This was an area about 10 x 7 meters in dimension containing a furnace for making cores and drying parts.

Point 22. Crane (same as item 9 above).

Point 23. Coring section. This was an area about 20 meters square.

Point 24. Crushers. This was an area about 30 x 10 meters containing two crushers (same as point 13, above).

Point 25. Preparing section. This was an area about 40 meters square for storage of earth and sand used in coring and molding processes.

Point 26. Entrance to foundry.

Point 27. Railroad spurline utilized by coal cars servicing the foundry.

Point 28. Coal pile.

Point 29. Slag pile (outside).

Instrument Shop Layout

5. Refer to page 12 , [redacted] sketch of the instrument shop layout. 25X1
The shop occupied an area 25 meters square. The following legend identifies numerical designations:

Point 1. Furnace. This was a furnace for annealing, tempering and cementing (case-hardening) materials.

Point 2. Furnace for small parts.

Point 3. Door to forge shop.

Point 4. Instrument storage area (about 10 x 6 meters in dimension).

25X1

25X1

Point 5. OTK section, and office of the shop foreman (about 10 x 6 meters in dimension).

Point 6. Corridor. This corridor was about three meters wide.

Point 7. Storage area. This was an area about 15 x 10 meters in dimension, where finished parts for other shops were stored.

Point 8. Storage area. This was an area about 15 x 10 meters in dimension, where instruments and tools were stored.

Point 9. Machinists' benches. This was an area 40 x 10-15 meters containing 20-25 machinists' benches.

Point 10. Lathes. This area contained about 20 lathes, type DIP 200.

Point 11. Lathes. This area contained about five lathes, type DIP 300.

Point 12. Four Soviet make horizontal milling machines.

Point 13. Five Soviet make vertical milling machines.

Point 14. Three polishing machines. These were machines, type 25X1

Point 15. Two Soviet make planing machines.

Point 16. Three Soviet make drilling machines.

The instrument shop also had a mezzanine floor which contained drafting offices, and offices for the shop manager and the OTK chief. This was the only work shop which had a second floor.

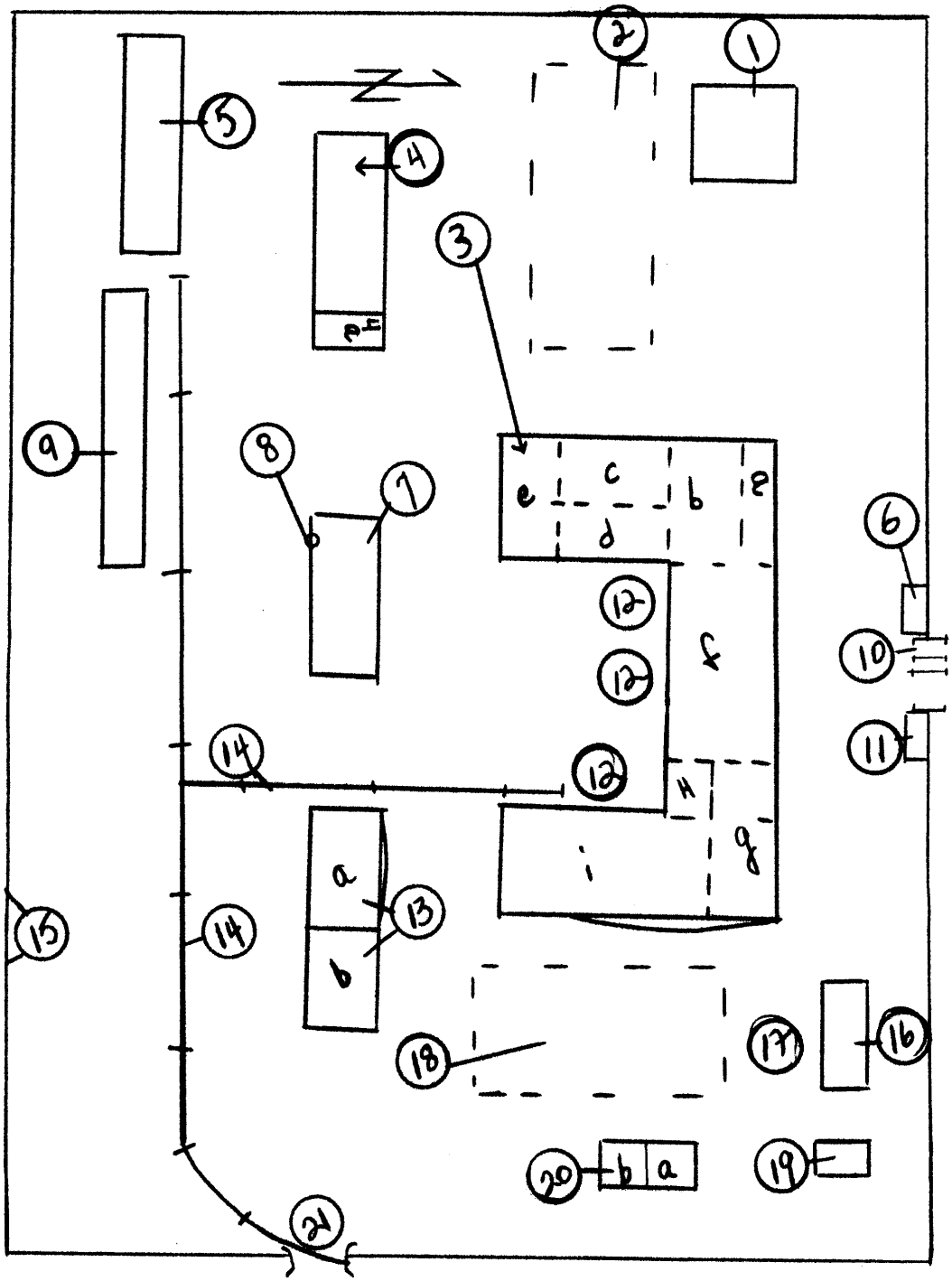
25X1

25X1

Sketch of the Sterlitamak Machine Construction Plant Layout

25X1

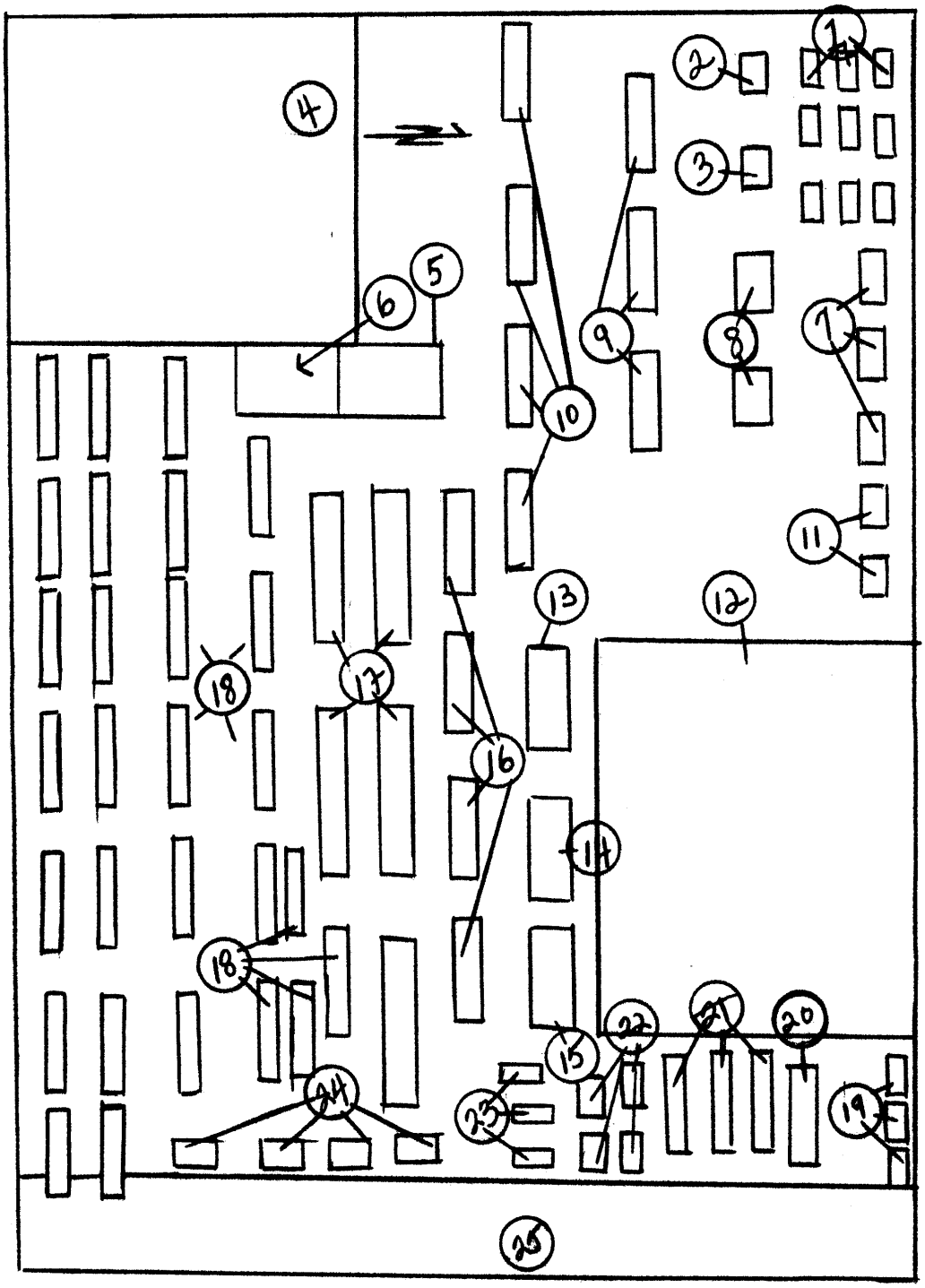
(not to scale)



25X1

Sketch of the Machine Shop Layout, Sterlitamak Machine Construction Plant

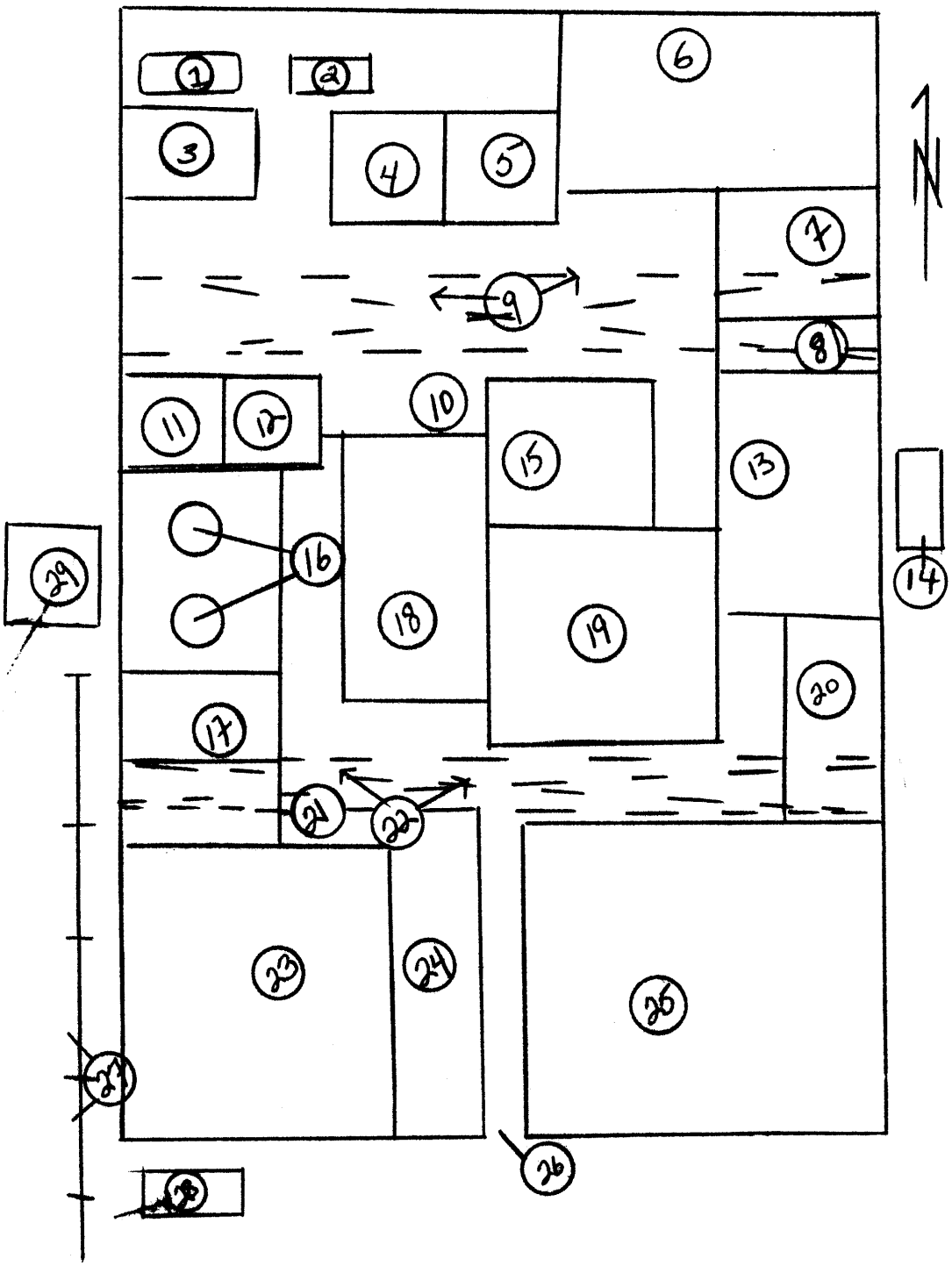
25X1



CONFIDENTIAL

25X1

Sketch of the Plant Foundry, Sterlitamak Machine Construction Plant 25X1



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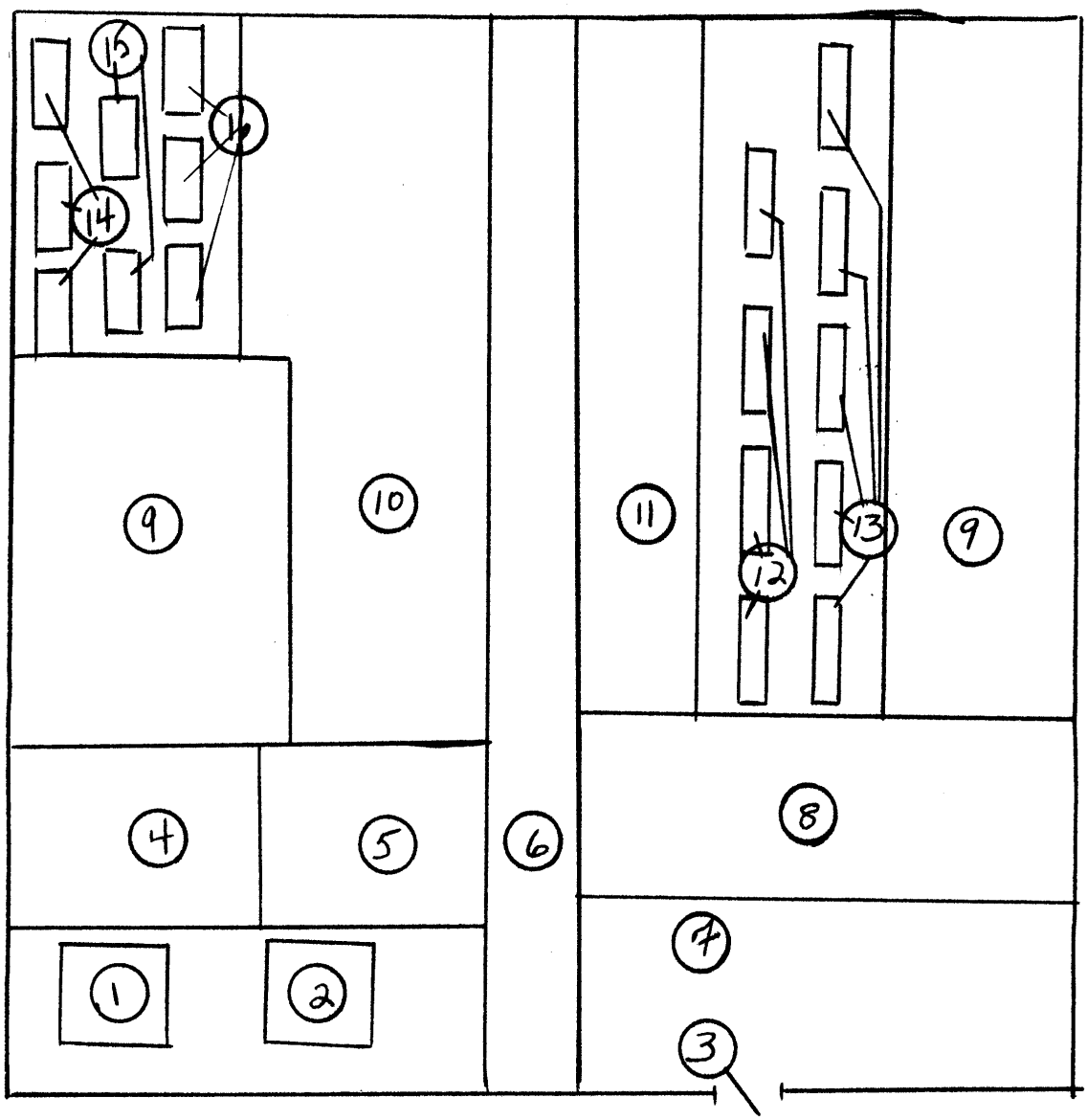
Sketch of the Instrument Shop, Sterlitamak Machine Construction Plant

25X1



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CONFIDENTIAL

25X1

25X1

PRODUCTION DATA AND RELATED INFORMATION ON THE STERLITAMAK MACHINE CONSTRUCTION PLANT

25X1

2. During WW II the Sterlitamak Machine Construction Plant (Sterlitamskiy Zavod Stroitelnych Mashin), was known as Plant #11, and in 1957 it was still referred to as such by the workers. The mailing address of the plant was 'Sterlitamak 5' and the plant grounds were located about seven kilometers north of the center of Sterlitamak. The Ministry of Construction and Road Machine Building, to which the plant was subordinate, was composed of several main administrations (glavnoye upravleniye) such as the Main Administration for Road Machinery (cement mixers), the Main Administration for Instruments, the Main Administration for Excavators, and the Main Administration for Pneumatic Machines. The Sterlitamak plant was subordinate to the Main Administration for Machine Construction, Glavstroymash, whose offices were located near the Leningrad Railroad Station in Moscow. About 60 machine construction factories, each located in a different city, i.e. Gorki, Sverdlovsk, Ufa, Sterlitamak, etc., were subordinate to Glavstroymash. Immediately subordinate to Glavstroymash in Moscow was a construction bureau in Leningrad, which supervised the operation of the Sterlitamak plant.

Plant Products

3. Up to the end of WW II this plant manufactured various armament items, the exact nature of which was unknown. In about 1946 the plant produced concrete mixers (betonomeshalki). In 1947 or 1948 the production of the plant changed to diesel power hammers, and in 1950 the plant began to produce steam power hammers. The Sterlitamak Machine Construction Plant was the only plant in the entire USSR which produced power hammers. It was considered a good plant, and during 1954-1956 was given second or third place rating among the plants subordinate to Glavstroymash. In about 1954 the plant obtained a [redacted] steam power hammer, and attempted to copy it. 25X1

25X1

[redacted] 25X1

However, up to January 1957 the plant had produced only three experimental copies of this hammer, none of which were operative.

4. [redacted] the 1956 plant production as follows: 25X1

a. Basic Production

(1) Diesel power hammers, DK (diesel kilograms) 600, type S-254. Production of these 600-kilogram capacity hammers began in 1947 or 1948. In 1951 the unit cost was 20,000 rubles, but improved technology, different norms, and lower material costs had reduced the unit cost to about 14,600 rubles in 1956. In 1956 the plant produced about 480 units, however production of these hammers was to be reduced and production of more powerful types of hammers was to be increased.

(2) Diesel power hammers, DK-1200, type S-222, with a 1,200 kilogram capacity. Production of these hammers was started in 1949-1950. The unit cost of 27,000 rubles in 1951 had dropped to 20,000 rubles in 1956. In 1956 the plant produced about 360 units, but production of these hammers was to be decreased in favor of more powerful types.

(3) Diesel power hammers DK-1800, type S-268, with a 1,800 kilogram capacity. Production of these hammers was started in 1952-1953, and their unit cost was about 35,000 rubles. In 1956 the plant produced 120 such hammers, and an increase in production was planned.

(4) Diesel power hammers DK-2500, type Smnk (number unrecalled) with a capacity of 2,500 kilograms. Production of these hammers began in 1956 at a unit cost of about 45,000 rubles, and the plant produced 20 units during that year. Production of these hammers was to be increased.

(5) Steam power hammers, (PVM - parovozdushnye molota) type S-231. The unit cost was about 30,000 rubles and in 1956 the plant produced 120 such hammers. Production of these steam power hammers was to be reduced, in favor of an increase in the production of DK-1800 and DK-2500 models.

(6) Steam power hammers, PVM, type S-304. This model was a copy of a [redacted] steam hammer. According to the production requirements, the plant was to construct 60 such hammers in 1956, at a cost of 45,000 rubles each. However, except for three unsuccessful prototypes, no such hammers were produced by the plant in 1956. 25X1

(7) Rail car unloader, T-168. (Razgruzchik sypuchikh materialov - unloader of friable materials.) [redacted] this was a machine designed to unload coal or sand from rail cars in a very short time (several seconds). In 1956, 200 were made at a cost of 28,000 rubles each. 25X1

[redacted] 25X1

(8) High-speed power hammers for military bridge construction (mostostroitelnaya mashina). This machine was a new, secret product, called V------ (number unrecalled). The manufacture of these machines began in 1956, after production of the first prototype. This was a small, light-weight, portable hammer, which operated on the same principle as the DK hammers. It was about 75 centimeters in height, weighed all together 300 kilograms and could be disassembled. This hammer, however, did not have a pile driver attachment or a winch. It was to be used in the rapid construction of river crossing bridges by the Army Engineer Corps. Whereas the diesel and steam hammers had a working average of 50-60 blows per minute, this hammer produced 300 blows per minute. The unit cost was 8,000 rubles. In 1956 the plant was supposed to produce 300 such hammers,

25X1

(9) Pole-rooters (svayevyydergivatel). This was a machine used to pull out poles. The construction of these machines was started in 1956, and by January 1957 only two prototypes were partly finished.

25X1

b. Spare parts for above mentioned items. Diesel hammer parts - 02-27 (pump), 02-28 (pump frame), 02-18 (burner), and 02-40 (plunger), most frequently had to be replaced and the plant produced a large quantity of these spare parts. It also produced, but to a much lesser degree, spare bases, caps, clamps, etc.

c. Spare parts for agricultural tractors, such as bushings (vtulka), crank shafts, sprockets, bearings, etc. These parts were shipped to other factories which assembled tractors.

d. Various parts for other factories. The plant foundry was capable of producing more iron and steel than the plant required, and only 20 percent of the iron and steel produced in the plant foundry was actually used by the plant. There were many machine construction factories in the Ural area which did not have foundries and the remaining 80 percent of steel and iron produced by the Sterlitamak plant foundry was designated for these factories, as specified by their requirements. steel and iron products orders for the following installations: the Machine Construction Shop in Izhevsk (capital of Udmurt); Stroymash in Kyasepetrovsk (N 56-04, E 59-37); Stroymash in Ufa; and Stroymash in Chelyabinsk (N 54-59, E 60-21).

25X1

e. Equipment for other factories. The Sterlitamak plant furnished: all equipment for the Kumertau oil refinery (1954 to 1956); equipment for the 18th Petroleum Combine in Salavat (1955); all equipment for the brick factory in Sterlitamak (1953); and equipment for the soda plant in Sterlitamak (1951-1957).

f. Consumer items. As of 1954 the plant produced cast iron plates for stoves, about one meter long, 50 centimeters wide, and 15 millimeters thick, which weighed about 35 kilograms.

Foundry Production

5. The plant foundry produced 175-225 tons of cast iron monthly at an estimated cost of 1,300 rubles per ton. This cost figure included the purchase price of iron ore, coal, coke, and such various mixtures as silicate, manganese, phosphorus, etc. The plant also produced 150-200 tons of steel monthly, at an estimated cost of 2,000 rubles per ton. The steel was produced in round, angular and U-shaped forms, in sheets and in girders. The foundry also produced monthly: 250-300 kilograms of aluminum, 100 kilograms of bronze, and 10 kilograms of copper, (cost unknown). Upon completion of the new foundry under construction in 1957, the estimated steel production of the Sterlitamak plant was to be between 20,000 to 30,000 tons annually.

6. The foundry had a relatively high rate of rejections (six percent) in comparison to 0.0 percent or 0.5 percent in other plant shops. This was due to poor quality of materials which was undetected by the OTK personnel, and which affected the proper casting of steel and iron.

Plant Capacity and Quality of Production

7. The plant did not operate at maximum capacity. The foundry turned out more steel and iron than the plant needed, and therefore manufactured iron and steel parts for other plants. The machine shop had several idle machines, and operational machines were not fully utilized 22 hours daily, because there were fewer workers assigned to the second and third shifts. In 1953-1955 the plant lost production time because supplies of raw materials were not delivered on schedule. Almost a week was lost in 1953 while waiting for reduction gears to arrive from Sverdlovsk, and frequently, precision drills were not available on time. After 1955 the supply system improved, and there were no further work stoppages due to lack of materials or instruments.

8. In 1950-1953 the Sterlitamak Machine Construction Plant made the winches for its power hammers. The Ministry recommended that a Saratov plant which produced winches exclusively, provide the winches for the Sterlitamak plant, since the Saratov plant produced these items more economically. As of 1953 all winches for the power hammers produced in Sterlitamak were made in Saratov and shipped to Sterlitamak where they were re-shipped, as received, to their destination.

9. The diesel hammers and the steam power hammers, type 3-231, performed their functions well. The steam hammer which was copied from a [redacted] model was a complete failure, and could not be reproduced up to January 1957. [redacted] the portable bridge building hammer was 'ideal' for its purpose. The unloader also performed well. The rooter was a new product [redacted]

25X1

25X1

[redacted]

Diesel Power Hammer

10. A diesel power hammer was made up of the following components, some of which were cast in the plant foundry:

Hammer Component (DK-1200, Type 5-222, example used)	Part No.	Material Used	Weight (as provided)
cylinder	DK-01	cast iron	1,200 kilograms
piston	DK-02	cast steel, or body of sheet steel and cap from cast steel	80 kilograms
drag (kosbka)	DK-05	sheet steel (1951-1955), cast steel (1956 --)	
bolt	DK-06	round steel	
right arresting device (dogclutch-sabachka)	DK-07	forged steel	
left arresting device	DK-08	forged steel	
spring	DK-09	steel	
trappie hook	DK-10	forged steel	
spring	DK-11	steel	
clamp bolt	DK-12	round steel	
cross arm	DK-14	cast steel	
bolt	DK-15	round steel	
spring	DK-16	round steel	
axle	DK-17	steel	
burner	DK-18	steel	
base	DK-19	cast steel	420 kilograms
head	DK-20	cast steel	150 kilograms
spindle	DK-23	round steel	
washer	DK-24	round steel	
pole pipes	DK-25	pipe	
bolt	DK-26	round steel	
pump	DK-27	round steel	
pump frame	DK-28	round steel	
nut	DK-29	round steel	
balance arm	DK-30	cast steel before 1952-53, later round steel	
tightening bolt	DK-31	round steel	
axis	DK-32	round steel	
nut	DK-33	round steel	
spindle	DK-34	round steel	
spring	DK-35	round steel	
spring	DK-36	round steel	
spindle	DK-37	round steel	
push rod	DK-38	round steel	
lever	DK-39	round forged steel	
plunger piston	DK-40	round steel	
washer	DK-41	round steel	

[redacted]

25X1

Hammer Component (DE-1200, Type 3-222, example used)	Part No.	Material Used	Weight (as provided)
piston ring	02-42	cast iron	
washer	02-44	round steel	
axle	02-45	round steel	

11. The complete diesel power hammer had a pile driver attachment (koper) about 10-12 meters long, made of angle steel weighing about 2½ tons, and a winch (received from the Saratov plant). 25X1

12. The diesel hammer production processes were described as follows: the molding sections in the foundry made molds, then the parts were cast, cored, annealed, cleansed of sand, trimmed, cleaned, checked by the OTK, and sent to the machine shop for further processing. The cylinder had one center channel and two side channels which were bored on the horizontal boring machine. The center channel was about 300 millimeters in diameter, the side channels were each about 120 millimeters in diameter. This procedure took about seven hours, and the results were checked by OTK. Next the norms (rogs) were milled. This process took about three hours, and the work was again checked by OTK. Then the area around the norms was trimmed, which took about two hours, and the result was checked by OTK. Finally other holes were drilled on the vertical drilling machine, (about five hours of work) and again the unit was checked by OTK. The piston, base and other parts went through the same processes. The technical control section checked the work at various stages, and at the end of each phase. All parts were then assembled in the assembly shop and tested after assembly. The pile drivers were assembled in the metal construction shop. In the instrument shop the pump frame, pump burner and plunger were machined precisely(within a maximum tolerance of 0.05 millimeters) and were heat treated. Later these parts were finished in the machine shop. The tolerances for other parts was from 0.1 millimeters to 0.01 millimeters.

Production Estimates and Costs

13. Refer to page 9 and 21, the actual plan for the projected production of the Sterlitamak Machine Construction Plant for the five-year period 1956-1960, which was submitted in 1956 to the Ministry of Construction and Road Machine Building. The figures shown were not chosen at random, but were, the actual figures submitted to the Ministry. 25X1

14. the production cost of an item, showing as an example, the various percentages allowed in arriving at a unit cost price of 20,000 rubles for a 1,200 kilogram capacity diesel power hammer. These cost figures, while rounded out were also close to the actual figures 25X1 25X1

25X1

Cost Factor		Amount in Rubles
a. Basic materials		2,300
(1) cast iron, 1,250 kilograms	1,600 rubles	
(2) steel, 300 kilograms, for cylinder-piston	600	
(3) screws, nuts, bolts, pipe, etc.	100	
b. Accessory materials (oil, emulsions, rags, packing, etc)		65
c. Basic piece work wages		1,090
(1) model making and foundry	10%	
(2) preparatory shop	5%	
(3) machine shop	35%	
(4) metal construction shop	17%	
(5) forge shop	3%	
(6) assembly shop	30%	
d. Additional incentive wages (25% of the basic piece work wages) Additional pay for overfulfilling the norm, premiums, etc.		273
e. Shop overhead expenses (225% of the basic piece work wages)		2,452
(1) wages, paid leave, premiums to shop technical and managerial personnel	12%	
(2) wages to repair and maintenance personnel	10%	
(3) major machinery and building repairs	20%	
(4) minor machinery repairs	8%	
(5) amortization of buildings and machinery	15%	
(6) electric power	20%	
(7) various materials, lamps, motors, nuts, bolts, spare parts	7%	
(8) pay of stock clerks, helpers, etc	7%	
(9) waste	1%	
f. Plant overhead (75% of basic piece work wages		820
(1) salaries of plant admin-bookkeeping, and engineer-technical personnel, including leave and premiums	10%	
(2) amortization of buildings	35%	
(3) major building repairs	10%	
(4) experimental work	12%	
(5) changes in machinery, rationalization, safety measures	20%	
(6) office supplies and stationery	10%	
(7) waste, unforseen expenses	1%	
(8) various other expenses	2%	
SUB TOTAL		7,000

Cost Factor	Amount in Rubles
6. Cost of the pile driver (broken down approximately as the cost for the hammer).	8,000
h. Cost of the winch (made by Saratov plant)	5,000
TOTAL UNIT COST	20,000

Norms

15. Production norms were established with the application of the formulas contained in norm tables prepared by the Ministry. Machine characteristics such as: the amount of horsepower; the distance between the rear chuck and the spindle; the distance from the spindle to the shaft, etc.; the flexibility of the instruments; the quality of the cutting blade; the depth to be cut; the number of revolutions required for the various operations; the length and diameter of parts to be made; the number of turns, crossings, and passings through; the number of shavings to be removed; the sturdiness of the stand; and many other considerations [redacted] were essential norm computation factors provided in these tables. 25X1

16. The regular tariff manual for pay (Tarifnyy Kvalifikatsionyy Spravochnik dlya Rabochikh) was also used in preparation of production norms. This manual set wage scales for drillers, polishers, foundrymen, smiths, lathe operators, machinists, electricians, etc. All workers were divided into seven categories: category 7 was the highest and best paid. As set forth in this table, a higher wage was paid to a seventh category machinist than to a fifth category machinist for performance of the same task. However, it was the job of shop managers and foremen to assign work requiring more skill and precision to higher category workers. This manual also contained the scale for incentive premiums for overfulfillment. There were tables showing incentive pay and premiums for each percent produced over 100 percent of the norm. These premiums varied for the director, deputy directors, chief engineer, engineers, technicians, workers. Each ministry had its own tariff manuals, and armament workers were relatively higher paid than workers in any other Ministry. 25X1

17. There were also norm tables for engineer, technical, and administrative personnel. Time norms were based on time units of 15 seconds (¼ minute): an operation requiring 12 minutes 40 seconds was set at 12 3/4 minutes; if the job required 12 minutes 50 seconds, the time norm was set as 13 minutes. In figuring the time for a certain operation, the technological engineer (who determined both the time needed for an operation, as well as the pay for performing it) watched a worker for an eight-hour period, and wrote down the time needed to prepare for the job (getting tools, instruments, placing parts on the machine), the actual machining time, the time required to remove the finished parts, wasted motions, etc. The technologist deducted 10 minutes from an eight-hour day for break periods. He watched all unnecessary movements, and timed each phase of an operation with a chronometer. Prior to 1952-1953 the best workers were selected for timing purposes. After that date, an average worker who was usually

A fifth category worker selected by the foreman, was assigned this task. However, this practice varied in different plants, at the discretion of the director.

18. It was the responsibility of the engineers in the technical and technological section, and of the production section personnel to improve the methods by which jobs were done. This process was called 'rationalization' (ratsionalizatsiya) and took into account a study of the sturdiness, durability, and resistance of various metals; the changing of metals or metal alloys; the proper machinery to be used, and the various operations, etc. Once a norm was established, it was confirmed by the plant director and by the Ministry in Moscow. In most cases, the Moscow Ministry automatically reduced the working time needed and the pay by five percent.

19. Several times during the year the technological engineers (normirovshchiki) checked the percentage of norm overfulfillment. Usually, workers produced 110 to 115 percent of their norm, and after working on a part three to four months, they could easily overfulfill the norm by 130 to 150 percent. Once each year in January the engineers in the technological section revised the time norms for a certain operation. If a worker could produce a part in one hour which had a two-hour time norm, the time requirement was cut in half (only at the annual revision). Every job in the plant, except that of the director and chief engineers, had a norm. A machine was considered to be operative 22 hours daily (two hours off for meals), 305 days in the year, minus eight percent time lost for repairs and maintenance. In 1954 the plant fulfilled its norm by 120 percent; in 1955 by 115 percent, and in 1956 by 110 percent. The shop foreman and shop managers were responsible for the fulfillment of the norm by individuals (i.e. the discouragement of tardiness or absenteeism, and the economical 22-hour use of each machine).

20. The plant director had a direct telephone to Glavstroymash in Moscow. He was required to call in daily, and report the day's production and problems. On the last day of each month he had to submit a cable to Glavstroymash, stating the monthly production, payroll, and percentage of norm fulfillment. Whenever the production norm was not fulfilled, or practically fulfilled, the plant director falsified figures in the telegram, stating at least 101-102 percent fulfillment of the norm. In order to rectify this falsification, workers from other shops (instrument shop, experimental shop, repair-maintenance men) were ordered to work in the machine shop or in serial production for several days. The last few days of each month and the first three days of each month were hectic times for the director and his staff, followed by a let-down from the fourth of the month until the end of the month. Every three months, and once annually, the plant director also submitted an account of production, payroll and norm fulfillment. These reports could not be falsified, and usually were true. However, if the plant did not meet its production plan, and the director thought that the deficit could be made up in the next quarter, he falsified production figures accordingly.

Organizational Structure

21. The plant employed about 1,500 workers. The plant director and the chief engineer were carried on the roster not as plant personnel but as employees

25X1

of the Moscow Ministry of Construction and Road Machine Building. The supervision of plant operations was conducted by a staff of 79 engineers, technicians, shop managers assigned to the plant engineer-technical group (Inzhenero-tekhnicheskiy Rabotei - ITR) and by the 64 supervisory employees of the shop engineer-technical group. The plant administration was made up of the bookkeeping, personnel, supply, and clerical sections, and guard and char forces, all of which were under the direction of two deputy directors.

22. [redacted] an organizational chart of the Sterlitamak Machine Construction Plant (page 22). The following legend describes the job functions and pay scale of the respective employees: 25X1

Point 1. Plant director. His basic pay was 2,000 rubles monthly, but his total salary with premiums, was about 3,500 rubles monthly. His main concern was the fulfillment of the plant production norm as demanded by the Ministry.

Point 2. Party Organization, consisting of one Party organizer, one secretary and one Komsomol official. These three men were not on the plant payroll, and were not subordinate to the plant director.

Point 3. Personnel section. This section was subordinate to the plant director, and consisted of four women who kept records of leaves, tardiness, absenteeism, personnel data, individual earnings, etc. The average monthly pay for these employees was 900 rubles.

Point 4. Deputy to the director for supply. He was in charge of all incoming raw materials and all outgoing shipments. He frequently traveled on TDY to the factories which shipped raw materials to the Sterlitamak plant and to the factories which received the plant production. His salary with premiums was about 2,000 rubles monthly.

Point 5. Deputy to the director for administration. He was in charge of construction of new plant shops and living quarters for plant employees, and the maintenance of plant buildings and employee residential facilities. His salary, with premiums, was about 2,000 rubles monthly.

Point 6. Chief engineer. He was the most important person in the plant, and was responsible for all production. Subordinate to him were the OTK; the chief mechanic; the control measuring point; the chemical laboratory; the technical and technological sections; the foundry, machine, assembly, metal construction, forge, model making, and preparatory shops; and the transportation section. His basic salary and premiums were the same as those of the plant director, averaging about 3,500 rubles monthly.

25X1

Point 7. Bookkeeping section. This section consisted of one chief bookkeeper, fourteen bookkeepers, and two (and one part-time) typists. The chief bookkeeper earned (in base pay and premiums) 1,700 rubles monthly; the others averaged 850-900 rubles monthly. About 50 percent of these employees were women.

Point 8. Planning section. This section consisted of four engineers who defined the overall production in monthly, quarterly, and annual terms as prescribed by the Ministry. They also planned the norms for the individual production of each machine and of each worker. Their average total monthly salary was 1,200 rubles.

Point 9. Supply section. This section was in charge of all incoming raw material, supplies to shops, and outgoing shipments. It employed seven men who had commercial training, and who earned an average monthly total salary of 850 to 900 rubles.

Point 10. Construction section. This section constructed new plant buildings and living quarters for plant employees, and was charged with the maintenance of all existing plant and residential buildings. It employed about 275 workers, of whom 70 percent were male. About 15 percent were skilled specialists and 85 percent were assistants. Their average monthly salary was 800-900 rubles.

Point 11. Guards and Charwomen. This section, subordinate to the deputy director for supply, had a guard force of 13 men whose average monthly salary was 550 rubles, and a char force of 10 women whose average monthly salary was 700 rubles.

Point 12. Chief mechanic. He was in charge of plant heating system (point 18, below), the mechanical repair shop (point 19, below), the carpentry and repair shop (point 20, below), and the electrical shop (point 21, below). His average monthly salary with premiums was 1,700 rubles.

Point 13. Technical section. This section consisted of one chief technician and thirty engineer-technicians and draftsmen (points 24-29, below); 70 percent of these employees were men. Their duties were to determine the proper machinery for various operations, to improve technical production methods, to recommend more economical ways of operation and suggest general 'rationalization' means. Subordinate to the chief technicians were the instrument shop (point 22, below) and the experimental sub-shop (point 23, below). The average salary of the engineer-technicians was 1,100 rubles monthly.

Point 14. Technological section. This section consisted of one chief technologist and 25 engineers, technicians and draftsmen (points 30-34, below), who were responsible for determining the length of time required to machine a certain part, etc. The 15 men and ten women technologists earned an average total monthly salary of 1,100 rubles.

Point 15. Production section. Subordinate to the production engineer were the dispatchers section and several draftsmen; the foundry; the machine, assembly, forge, metal construction, foundry mold, and preparatory shops; and the transportation section. All of these units worked three shifts, with about 50 percent of the workers assigned to the first shift, 35 percent to the second, and 15 percent to the third. The average total salary of the production engineer was 1,500 rubles monthly. The dispatchers' section consisted of three chief dispatchers (one for each shift) who were engineers. Each shop had separate dispatchers, who were also engineers or technicians. The shop dispatchers supervised the work flow and coordinated the various individual operations (such as boring, milling, polishing, etc.), so that bottlenecks were prevented. The dispatchers of the individual shops kept flow charts, and reported to the chief dispatcher. The chief dispatcher coordinated the movement of parts from shop to shop. The average total monthly salary was 1,100 for a chief dispatcher and 1,000 rubles for the other dispatchers and draftsmen.

Point 16. Chemical laboratory. This laboratory was staffed by five female chemists who tested the density of earth for pile driving purposes, and experimented on alloys as necessary for the foundry. The chief chemist averaged (with premiums) 1,500 rubles monthly, and the others, 850-900 rubles monthly in wages.

Point 17. Chief of the Technical Control Section (OTK). This individual was an engineer, a Tatar, who averaged (with premiums) 1,500 rubles monthly in wages.

Point 18. Plant heating system. The plant had two furnaces which heated all plant buildings. Construction of a pipe line to the residential section for plant employees was planned in order to supply heat to these quarters. This section employed 35 men, all capable firemen, who averaged 1,000-1,100 rubles monthly in salary, with premiums.

Point 19. Mechanical repair shop. This shop employed 50 men (two shifts), who repaired and maintained plant machinery. The men were lathe operators, millers, machinists, polishers, etc. and averaged in wages 900-1,000 rubles monthly. About 70 percent were skilled, and the rest were apprentices or semi-skilled.

Point 20. Carpentry shop. This section employed 30 men in two shifts. The men, of whom 60 percent were skilled workers, made packing cases for outgoing production; doors and window frames for new houses under construction; and performed such carpentry work and plant repair as was necessary. Their average monthly total salary was 900-1,000 rubles.

Point 21. Electrical repair shop. This shop employed 20 skilled electricians, in two shifts, who repaired the plant generators and all electrical appliances. Their average total monthly salary was 1,000-1,100 rubles.

25X1

Point 22. Instrument shop. This shop worked two shifts, employing 65 men of whom about 60 percent were skilled mechanics. These men were millers, planers, drillers, lathe operators, polishers, and machinists who did precision and instrument work. Sometimes this shop did secret work, the nature of which was unknown 25X1 At times, when the production plan was not about to be fulfilled, all 65 men were switched over to serial production. Their individual average earnings were 1,000-1,100 rubles monthly.

Point 23. Experimental sub-shop. This shop worked in two shifts, employing 30 highly skilled men. Their work was top secret 25X1 From official conversation with other engineers when planning production, this shop worked on portable bridge building power hammers for the Army, and that in January 1957, this shop was experimenting on several other, top secret machines for military use. This shop usually produced only prototypes. An army engineer corps colonel, in uniform, was in charge of the military work done in this shop.

Point 24. Equipment office. This office consisted of three engineers who checked all plant equipment, the change-overs in machinery required for new production, etc.

Point 25. Project office. This office consisted of eight engineers and draftsmen who worked on new projects.

Point 26. Prototype engineering office. This office consisted of three engineers, who worked in conjunction with the experimental sub-shop (point 23, above). Their work was top secret.

Point 27. Production engineering office. This office consisted of three engineers and nine draftsmen who determined the operations required to produce a part and assigned the tasks to various shops and to the proper machines. The draftsmen made sketches from the allover plans for the execution of particular operations on certain machines. After the Sterlitamak plant received allover designs for an item, responsibility was allotted to certain shops for certain operations, and the pertinent shop engineers and draftsmen made designs for their respective operations only (such as casting, drilling certain holes, polishing, etc.)

Point 28. Technical library. The library had two female librarians. This library also distributed civil defense and atomic defense pamphlets to all plant employees.

Point 29. Special office. This office consisted of two women who kept the archives containing all drawings and plans. It was also called sekretnaya chast - secret office.

Point 30. Norms office. This office consisted of seven engineers who compiled the time norms for operations and computed the piece rate wage to be paid for each operation.

25X1

25X1

Point 31. Series production office. This office was staffed by 10 engineers whose main task was to find better production methods.

Point 32. Prototype production section. This office consisted of three engineers who worked on production methods for new, experimental types of products, (non-secret).

Point 33. Equipment office. This office consisted of two engineers who were responsible for all plant machinery and equipment.

Point 34. Instrument office. This office consisted of three engineers who were in charge of all instruments used in plant processes.

Point 35. Foundry. The foundry employed 250 people, 80 of whom were men. About 15 percent were skilled specialists, and 85 percent semi-skilled labor or apprentices. The iron and steel workers (who operated Wagren and Bessemer furnaces) and the electro-welders earned a monthly total average wage of 1,200 rubles; the others, 800-1,000 rubles.

Point 36. Machine shop. This shop produced parts for diesel and steam power hammers, spare parts, tractor spare parts, and other production in series. It employed 320 workers, of whom 90 percent were men. About 60 percent were skilled specialists, such as lathe operators, machinists, millers, borers, polishers, etc. The average total monthly wage was 950-1,000 rubles.

Point 37. Forge shop. The forge shop employed 20 men, all skilled specialists, who averaged a total wage of 1,100 rubles monthly.

Point 38. Metal construction shop. This shop assembled pile driver attachments (hoper) and employed 100 men, all skilled specialists, who earned an average wage of 1,000 rubles monthly.

Point 39. Foundry mold shop. This shop made molds for the foundry and employed 30 men, all skilled specialists, who averaged a total individual wage of 1,100 rubles monthly.

Point 40. Preparatory shop. This shop cut steel and iron to desired lengths, and employed 50 men, of whom 25 percent were skilled specialists. The average monthly wage was 950 rubles. The other 75 percent were semi-skilled workers or apprentices who averaged 850 rubles monthly.

Point 41. Assembly shop. This shop assembled the individual parts (cylinder, piston, etc.) into complete power hammers. It employed 70 men, all of whom were skilled specialists. Their average individual monthly wage was 1,000 rubles.

Point 42. Transportation section. This section employed about 30 drivers, 40 loaders, and 10 laborers, whose total monthly earnings were between 850 and 1,000 rubles.

25X1

[redacted] 25X1

Point 43. OTK section. This section employed 16 female inspectors (two shifts) who checked the parts in the various shops. Two inspectors were assigned to each production shop (i.e. the foundry, forge, foundry mold, instrument, assembly, metal construction, and preparatory shops) and four worked in the machine shop. Their average total monthly salary was 850 rubles.

Point 44. Control measuring point (KIP - Kontrolnyy Izmeritelnyy Punkt). This section was staffed by three women and one man (two shifts) who worked with measuring instruments, calipers, gages, etc. Their average monthly salary was 850 rubles. Included among the workers were about 200-300 apprentices.

Personnel

23. [redacted] the plant director was Alekseu Petrovich Stash, [redacted] 25X1

24. Prior to 1955 the deputy director for supply was Steinman, (fnu). [redacted]

25. The chief engineer was Ivan Petrovich Gurin, [redacted]

26. Plant products were designed by an engineer, [redacted] from the Leningrad construction office. This engineer frequently visited the Sterlitamak plant. If some other factory made parts for the Sterlitamak plant, or vice versa, copies of the plans for the particular item were sent from the Leningrad construction office to the Sterlitamak plant and to the other factory concerned. There was an exchange of visits between engineers from the Sterlitamak plant and engineers from the other related factories.

27. The plant employees were Russians, Ukrainians, Tatars, Bashkirs, and members of other ethnic minority groups who were assigned to specific types of work as follows:

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	Indirect labor (Administrative, Engineer-Technical Workers	Direct labor Machinists, Mechanics, Foundrymen, Laborers, Etc.
Russians	45%	20%
Ukrainians	20%	5%
Tatars	20%	45%
Bashkirs	10%	10%
Minorities (Jews, Udmurts, Volga Germans, Etc.	5%	20%

Working Conditions

28. The plant operated in three shifts: the first shift was from 0800 until 1700 hours with a one-hour lunch period (1200-1300 hours); the second shift was from 1700-0200 hours with a one-hour meal period (2100-2200 hours); and the third shift worked from 0200-0800 hours without a break. The administrative, bookkeeping, and engineer-technical sections worked only during the first shift. The plant director, the deputy directors, and the chief engineer had one month's annual leave with pay. The engineer-technical staff and employees had 24 calendar days leave with pay, and all other workers had 18 calendar days leave with pay.

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29. The plant provided living quarters for its personnel. The plant buildings were poorly constructed, without basements, indoor toilets, or running water. The shops had no ventilation but there was sufficient light and heat. The foundry was unsanitary, and the foundry workers or engineers who visited the foundry always got shavings or sand in their eyes.

20 percent of the plant machinery was semi-automatic, whereas the remainder was mechanically operated. Only Moscow and Leningrad plants had fully automatic machinery.

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30. The engineers, most of whom graduated from institutes in large cities, all wanted to live and work in industrial centers, but they were not permitted to do so by the Ministry. There was, however, a rapid turnover of engineers, since they pulled all strings to be transferred from this 'village' in Bashkir to places like Kiev, Odessa, Moscow, and Leningrad.

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Raw Materials

31. some of the raw materials which were used by the plant:

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Material	Description	Origin
stainless steel	(small amounts)	Magnitogorsk
steel No. 20	a hard steel used for springs	Magnitogorsk
steel No. 45	(best quality)	
steel No. 3	(general use)	sheets, bars,
steel No. 5	(hard steel)	girders, etc.

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Material	Description	Origin
special chrome-nickel steel		Yuzh-Ural Stroy-mash, Orsk
iron ore		Magnitogorsk
coal		Kuznetsk-Termo-layev
oil (mazut)		Ufa
sand		Belaya River, near Sterlita-mak
cement		Sterlitamak cement plant
grapple hooks		Stroymash, Odessa
winches		Stroymash, Sara-tov
cable and wire		Glavstroymash, Sverdlovsk
forged parts (piston rods)		Yuzh-Ural Stroy-mash, Orsk
instruments		Instrument shop, Sverdlovsk
oxygen	for welding	(after 1955), oxygen plant, Sterlitamak
alcohol	for plant laboratory	Sterlitamak Al-cohol Plant
titanium bits	15 x 10 x 4 mm	
ceramic cutting bits	15 x 10 x 4 mm	
tungsten		
beryllium		
magnesium		
iron pipe	80 mm in diameter, 3½ meters long for 600 kg. hammers; 100 mm in diameter, 4½ meters long for 1,200 kg. hammers; 120 mm in diameter, 5 meters long for 1,800 kg. hammers; 135 mm in diameter, 5 meters long for 2,500 kg. hammers.	

Shipments

32. All production was shipped to consumers by rail. In 1955 and 1956 the Sterlitamak plant shipped diesel and steam power hammers to India, North Korea, Egypt, Czechoslovakia, Poland, and Afghanistan (figures unknown). It also supplied power hammers (1951-1956) to: the Tsimlyansk Canal Construction (a canal from Stalingrad to the Azov Sea); the GRS (electric stations) in Stalingrad, Kuybyshev, and various cities in Siberia and the Urals; and to oil well construction sites in the Azov and Caspian Seas. The plant trucks were used to haul sand to the plant, for transportation of parts from one shop to another, and for hauling cement, bricks, construction materials for plant or housing construction. Most incoming raw materials were shipped by rail.

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33. The diesel power hammers were shipped out in white wooden boxes, four to five meters in length, 60-70 centimeters in height, and 60-70 centimeters in width. The top and sides of the boxes were stenciled with words identifying the contents of the box. The steam power hammers were shipped in wooden boxes about 2½ meters x 75 centimeters x 75 centimeters. The pile drivers were shipped out in two sections, each section in a white wooden box 4½-5 meters x 2 meters x 1-1½ meters in size, which were marked: STERLITAMAK PLANT, T-182, S-222. Spare parts and parts for factory machinery also were shipped out in wooden boxes. The winches which were received from Saratov, were re-shipped from the plant to their final destination. Each diesel or steam hammer was accompanied by a shipping document stating the following:

Name of Receiver (for instance, GZS Kuybyshev)
Type S-222, DK-1200
Serial Number 1251
Checked and Passed by OTK Signature of OTK Chief
When Tested Date, by whom

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Plant Security

34. The guards (male only) wore dark blue uniforms similar to the militia uniform. In addition to the guards stationed at the plant gates, one guard patrolled inside the plant territory during the day, and two guards patrolled this area at night. The guards appeared to be unarmed and had no sentry dogs. The plant did not have a fire station. Each shop was equipped with hand fire extinguishers and sand boxes. The plant had a fire alarm (siren).

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35. Employees had plant passes which were issued at the gate to all personnel when they reported for work. The administrative and engineer-technical personnel, after receiving their passes at the gate, dropped the passes into a box inside the plant area. They were not required to show passes when leaving the plant. Shop workers gave their passes to shop foremen at the start of work. Upon leaving, their passes were returned, and the workers surrendered them at the gate. Visitors with valid reasons to enter the plant area had to pass through the personnel/guard section near the entrance where they were issued a pass. These passes were valid for a particular shop only, and did not permit access to other plant shops. The experimental shop was secret and off limits to all unauthorized persons.

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The cardboard pass was 18-20 x 6 centimeters in size, in various colors which were changed every few years. The pass was folded in half. New passes were issued at irregular intervals.

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Projected Production Plan for the Sverdlovsk Machine Construction Plant for the Five-Year Period 1956-1960 (Final Version)

		1956			1957		
I	Basic Production Items	Quantity in Pieces	Cost in 1000 Rubles	Total	Quantity	Cost	Total
1	DE-600 (S-054)	480	14.6	7008	300	14.6	4380
2	DE-1200 (S-082)	360	20	7200	360	20	7200
3	DE-1800 (S-068)	180	35	6320	200	35	7000
4	DE-2500 (S-111)	20	45	900	60	45	2700
5	PDM (S-031)	120	30	3600	120	30	3600
6	PDM (S-304)	60	45	2700	100	45	4500
7	Unloader (T-168)	200	28	5600	250	28	7000
8	Bridge Builder (V-111)	300	8	2400	350	8	2800
9	Rooter	2	20	40	4	20	80
	TOTAL			33668			39260
			in thousands of rubles				
II	Spare Parts for Items 1-9			1000			1200
III	Parts for Tractors			600			600
IV	Cooperative Orders			1400			2000
V	Side Orders			2800			2900
VI	Consumer Items			300			350
	GRAND TOTAL			39168			45910

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Projected Production Plan for the Khartoum Machine Construction Plant for the First Four Period [illegible] (Short Version) (cont'd)

I.	[illegible] Quantity	[illegible] Cost	[illegible] Total	[illegible] Quantity	[illegible] Cost	[illegible] Total	[illegible] Quantity	[illegible] Cost	[illegible] Total
1	220	14.6	3220	80	14.6	1168	20	14.6	292
2	300	20	6000	250	20	5000	150	20	3000
3	250	35	8750	300	35	10500	350	35	12250
4	100	45	4500	120	45	5400	150	45	6750
5	100	30	3000	80	30	2400	50	30	1500
6	120	45	5400	140	45	6300	170	45	7650
7	300	28	8400	350	28	9800	400	28	11200
8	400	8	3200	450	8	3600	500	8	4000
9	25	20	500	30	20	600	50	20	1000
TOTAL			42870			44768			47642
	in thousands of rubles								
II			1,500			1,700			2000
III			700			700			800
IV			2,300			2400			2700
V			2700			2700			2800
VI			350			350			350
GRAND TOTAL			50920			52718			56292

* NOTE: While the prices were all based on 1956 prices, it was anticipated that the cost of items 1-9 would be lowered each year because of larger scale, improved technology, and other economic progress.

* - Above Note was printed on the plant project submitted to the Ministry.

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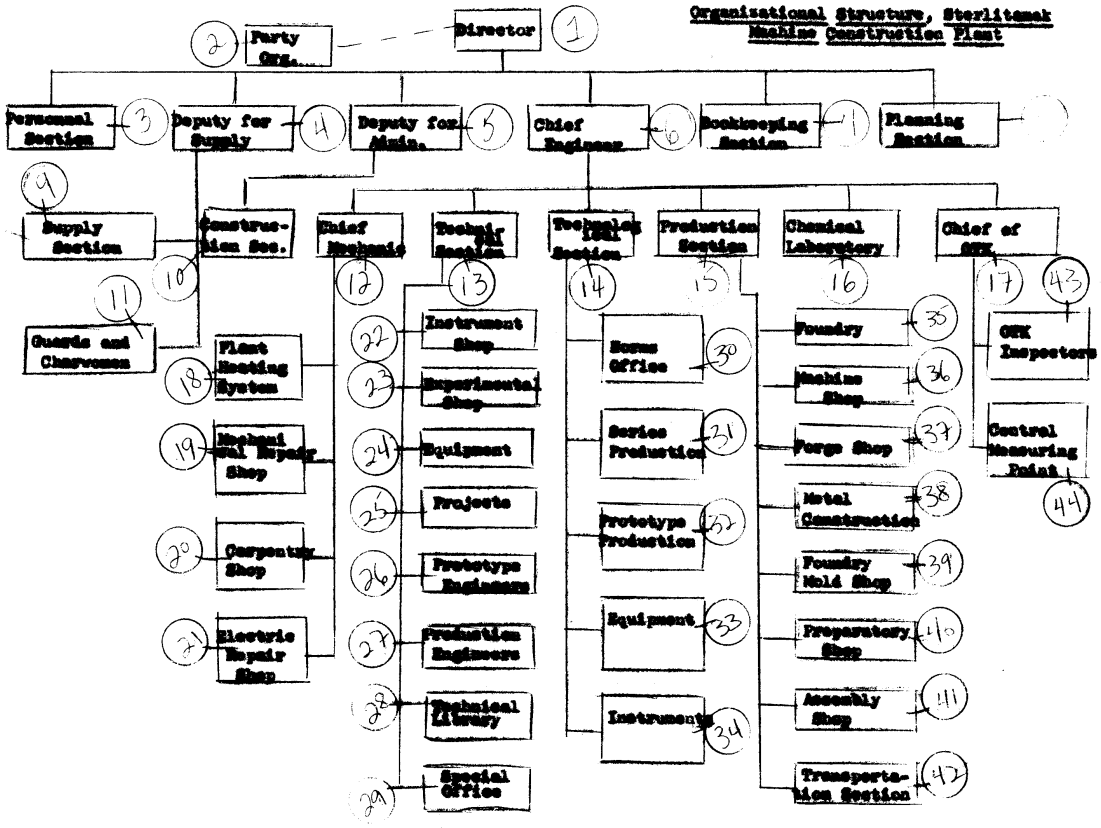

The Sterlitamak Machine Construction Plant, located some seven kilometers north of the city of Sterlitamak (N 53-37, E 55-58) in the Sterlitamakskiy rayon, Bashkirskaya ASSR, produced diesel-driven pile drivers which were used in bridge construction.

The laboratory occupied three fairly large rooms (dimensions not given) on the ground floor of the plant's main building; the personnel consisted of a chemical engineer, Leontina Petrovna Apsit, and three laboratory technicians. The laboratory analyzed the sand used in making molds for castings (to determine its resistance and moisture content) as well as steel and iron, to ascertain the amounts of silicon, manganese, phosphorous, aluminum, carbon and sulphur the metals contained. In case the composition of the metals was faulty, they were further analyzed for their nickel and chrome content. The laboratory analyses were then turned over to the technical control section (OTK); the OTK, in turn, approved the use of the metals for manufacturing purposes provided their composition was deemed satisfactory.