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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

COUNTRY	East Germany	REPORT	
SUBJECT	Werk fuer Fernmeldewesen HF 1953 Research Tasks and Other Information	DATE DISTR.	15 October 1953
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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

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A. Official research and development program

The following lists of 1953 research tasks being conducted in the Werk fuer Fernmeldewesen "HF", Berlin-Oberschoeneweide, Ostendstrasse 1-5, is believed to include the great majority of tasks being undertaken by the OSW experimental works of Werk "HF". Tasks asterisked are further described following the list.

Key: (a) Reference number of SAG Kabel Headquarters of task, if it is for the USSR;
(b) Reference number of ZAFT of the task, if it is for East Germany;
(c) OSW official originally responsible. Note that in some cases the official has fled to the West since the list was drawn up;
(d) Title of the task;
(e) Werk "HF" reference number of task.

(a)	(b)	(c)	(d)	(e)
	230403/			
	*K3-01	Dr. Ignatz Ladurner	3 kW tetrode	21 001
	*K3-02	" "	20 kW triode	002
	*K3-03	" "	730 magnetron	003
	*K3-05	" "	Cut-off tube LG79	004
	*K3-06	" "	High voltage ignitron	005
	*K3-07	" "	Moving field tube	006
	*K3-08	" "	Klystron	007
	*K3-09	" "	Ultra-short-wave tetrode EL 153	008
	*K3-10	" "	50 kW short-wave tube	009
	*K3-11	" "	Mixing tube ECH 81	010
	*K3-12	" "	Duodiode regulating pentode EBF 80	011

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STATE	x	ARMY	x	NAVY	x	AIR	x	FBI		AEC		ORR Ev	x	OSI	

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(Note: Washington Distribution Indicated By "X"; Field Distribution By "#".)

(a)	(b)	(c)	(d)	(e)
	K3-13	Dr. Ignatz Ladurner	Push-pull tetrode up to 400 mcs.	012
	*K3-14	" "	EC 80	013
	*K3-15	" "	LV 13	014
	*K3-16	" "	Double grid thyratron	015
	K3-17	" "	Technical tubes	016
	*K3-18	" "	EF 80	017
	*K3-19	" "	Cut-off tube LG 76	018
	*K3-20	" "	726A. Proposed	
	*K3-21		Magnetron 10 cms (similar to LMs 1000). Proposed	
52-10B	*K3-05 (error for F3-05)	" "	Improvement of metal-ceramic tubes	21 501
	*K3-162	" "	Double triode ECC 81	21 094
	*K3-163	" "	"Kippentode PL 81".	095
	*K3-164	" "	Diode PY 80	096
	*K3-165	" "	Pentode PL 83.	097
	*K3-166	" "	Triode-pentode PCL 81.	098
	*K3-167	" "	Regulating pentode EF 85.	099
	*K3-168	" "	HF triode EC 92.	100
	*K3-169	" "	Triode-tripling diode EABC 80.	101
	K3-22	Wenderoth	Oscillograph tubes for current measurement.	019
	K3-26	" "	Picture tubes with large picture screens.	022
	K3-27			
	K3-28			
	K3-23		Test multiplier.	020
	K3-24			
	K3-25		Supericonoscope.	021
	K3-30	Beisse	Electron microscope.	
	K3-33	"		
52-12	K3-34		High tension rectifier for current supply to electrostatic electron lenses.	
	K3-35	"		
	K3-36	"		
	F3-01	"	Preparation technique for electron microscope.	
	K3-37	Ihln	Xenon flood-light lamp.	
	K3-38	"	Xenon "Kleimlampe" (sic)	
	K3-39	"	High temperature oven.	
	K3-40	"	Tube-shaped water-cooled xenon projecting lamp.	
	K3-65	Rehbock	Impulse current meter.	
	K3-66	"	Test section for impulse-code-modulation.	
	K3-67	"		
	K3-68	"	Cavity instrument leads (Messleitung).	
	K3-69	"	Wave meter.	
	K3-70	"	Constructional parts for cm technique.	
	K3-71	"	Echobox.	
	K3-73	"	Power meter, 3 and 10 cms.	
	K3-74	"	Detector measuring instrument.	
	K3-77	"	Quality measuring set.	
	K3-78	"	Noise diode signal generator.	
52-3	K3-79	"	Heterodyne test receiver. (Ueberlagerer Messempfaenger).	
52-5	K3-80	"	Transportable signal generator.	
52-7	K3-81	"	Absorption attenuator.	
52-9	K3-82	"	Standard field generators, 1-25 and 25-150 mcs.	
52-13	K3-83	"	Set of field strength meters 360 - 10,500 mcs.	

(a)	(b)	(c)	(d)	(e)
	K3-84	Rehbock	Set of sensitivity signal generators.	
	K3-91	"	Narrow band test amplifier.	
51-33	K3-92	"	Twin-beam oscillograph.	
	K3-93	"	Broad band test amplifier.	
	K3-94	Becherer	High constant detectors.	21 060
	K3-95	"	Detectors with high inverse voltage.	061
	K3-96	"	Transistors	
51-17	K3-98	"	Germanium semi-conductor triodes	524
	K3-99			
	K3-100	Rieger	Page printer (Blattschreiber)	
52-17	K3-101	"	Apparatus for measuring the operating time of relays.	
	K3-147	Hardt/Kopsch	Test instruments, new.	
	K3-148	" "	Local system 53.	
	K3-149	" "	Universal extension system.	
	K3-150	" "	Motor selector.	
	K3-151	" "	Extension system with motor selectors.	
	K3-152	" "	Test relays.	
	K3-153	" "	Constructional elements.	
	K3-154	" "	Subzone network (Netzgruppe).	
	K3-155	" "	Electric selector system.	
	K3-108	" "	Automatic EWT (sic) single - and double-side-band.	
	K3-157	Dr. Bauer	Automatic quartz testing installation.	21 089
	K3-158	" "	Test apparatus for short-wave quartzes.	090
	V3-02	" "	GT-Schnitt (sic).	091
	V3-03	" "	Constancy investigation oscillating crystals.	092
	K3-161		Further development of HF measuring instruments.	
	K3-180	Dr. Richter	Picture tubes.	
	K3-200	Grove	Gas discharge under electrical bombardment.	
	K3-201	"	Gas discharge	
	K3-202	Dr. Schwechten	Drip metallization (Tropfmetallisierung)	
	K3-204	Frau Thurley	Luminescence	
	K3-205	" "	Deionized water (Deionisiertes Wasser).	
	K3-206	Stock	Metallization installation	
	K3-207	Dr. Moll	Eddy radiation oven.	
	K3-208	Dr. Klang	Ionic trap system (Ionenfallensystem).	
	K3-209	" "	Impulse generator.	
	K3-210	Dr. Kromrey	Wire testing.	
	K3-211	" "	Hole locator.	
	K3-212	" "	Field electron microscope.	

Comments on the tasks.

K3-01 The work is so far advanced that it was ready, at the beginning of May 1953, to be taken over for series production.

K3-02 Water- and air-cooling is provided for. Five samples are to be made.

K3-03 This is being constructed from war-time documents by Dr. Fritz (formerly of Telefunken). Two samples are already constructed.

K3-05 This is a copy of a Telefunken model. It is a soft glass tube with three cold electrodes, for use as a short circuit in dm wavelength work. Production is running at 10 per month.

K3-06 Nienhold (fnu) is working on this. The tube is to be used as a breaker for large welding machines. There are two borium carbide pegs in a glass cylinder of 150 mm ∅ and 300 mm height; mercury is used for the ignition electrode. An experimental model is ready. 150 tubes have been ordered.

K3-07 This should have been finished in 1952. A moving field tube type HF 2823 was then developed (a few samples only) and put to internal use. This is to be further developed this year, and Dr. Ladurner said that an American tube of this type would serve as a pattern for further work.

K3-08 The American RK 707 B is being copied.

K3-09 The Telefunken EL 153 is being copied. One sample is ready and being tested by Zoberbier (fnu).

K3-10 Work has not yet started.

K3-11 Miniature tube. Already being produced.

K3-12 Miniature tube. Production should start in June 1953.

K3-14 Miniature tube which can be used for dm work. Only a few examples have been produced. Dr. Herbert Daene of the Astrophysical Observatory, Potsdam, is particularly interested in this tube.

K3-15 Copied from a Telefunken model. The first sample was in the experimental works workshop in early June 1953, and should be ready by the end of the month.

K3-16 Design is completed: one sample is in the workshops.

K3-18 Miniature tube. Type EF 85 has actually gone into series production, not EF 80.

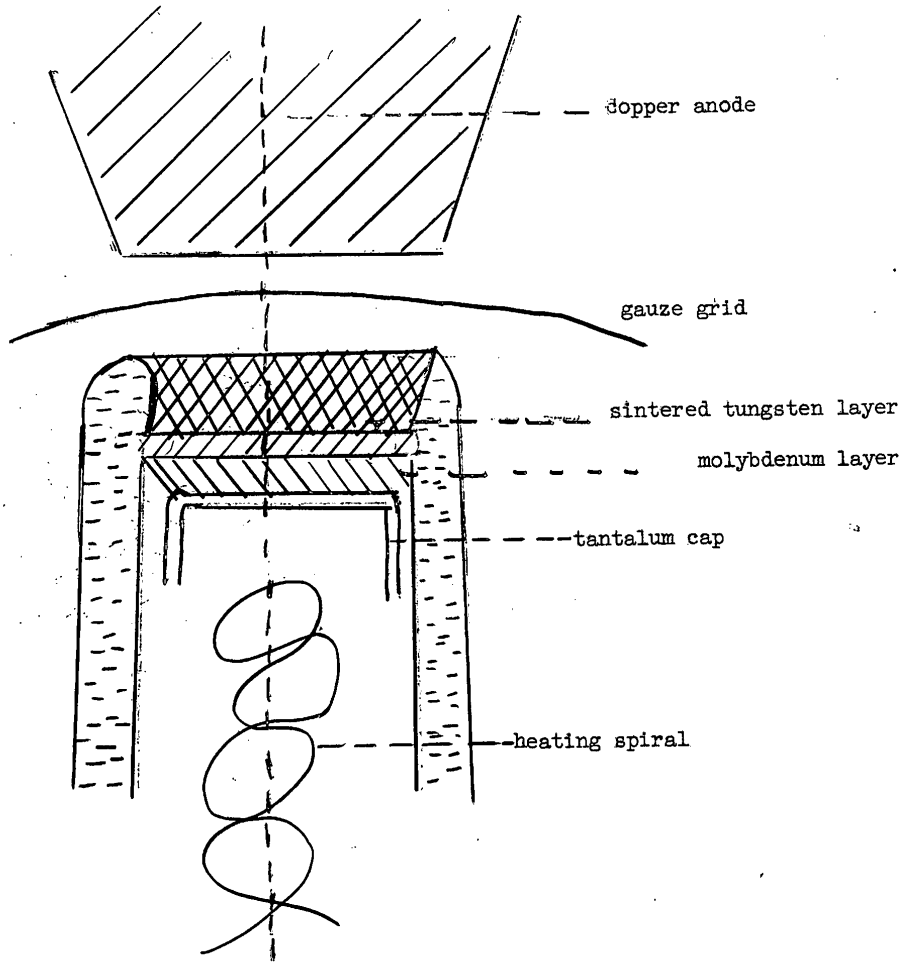
K3-19 Cut-off tube for cm work. Bleick, fnu, is now producing about 10 tubes per month.

K3-20 No work yet begun.

K3-21 It was proposed to build this from old war-time data. As these are in the USSR, the design must be started from scratch. One sample is to be ready by the fourth quarter of 1953.

K3-05 (F3-05) - 52-10B This is a continuation of the 1952 Russian research task for improvement of the life and other characteristics of metal ceramic tubes LD 11 and LD 12.

In the 1952 work, the life of the valves was increased by the following technique. The L-cathode (power cathode) was used:



The tungstenspiral is only coated with an insulating paste. It is placed inside a molybdenum tube of 6 mm diameter. The tube is closed at the front end of the spiral with a 0.05 mm tantalum cap. A 0.2 mm molybdenum layer is over that; this has an emission paste with a layer thickness of about 50 microns. Then there is finally a tungsten layer, produced by pressing and sintering powdered tungsten. Thus, the electrons first have to penetrate the tungsten layer, before they can reach the vacuum. A gauze grid is placed 0.15 mm away and a copper anode a further 0.5 mm away. The 1953 work is on the further improvement of the metal ceramic triode type HF 2852. (It is not clear ff this is LD 11 or LD 12). In particular, the amplifying factor has to be improved to 10.

K3-162 This is ready. It corresponds to the American 12 AT 7.

K3-163 This is for TV use. Development not yet complete.

K3-164 Rectifying tube for HT use. This task is being allowed to lapse. Another tube, PY 81, with 5 kV inverse voltage, is being developed instead.

K3-165 Still in development, although some samples are being tested. The work is to be accelerated.

K3-166 One sample is now being built in the workshops.

K3-167 Miniature tube. See K3-18.

K3-168 Miniature tube. Exact copy of the Telefunken tube. It included the system of the double triode ECC 91.

K3-169 Now in production.

B. Miscellaneous information

1. Metal ceramic tubes

a. In March 1953 it was known that the manufacture of metal ceramic tubes in OSW was unsatisfactory because of the 80% reject rate.

b. For a short time in early April 1953, almost no work on these tubes was done, because of a shortage of molybdenum sheet and zirconium dioxide for the production of the ceramic. The head of the department for the production of these tubes, Heinz Ruhnke, said that workers had been transferred to other departments and that the only work in progress was the completion of some LD 11 and LD 12 tubes.

c. (1) 200 kg ZrO_2 were obtained from an unknown source, and some molybdenum was also procured, so that the work could restart. Almost at the same time - late April - however, the Russian acceptance official for these tubes informed OSW that he had had telegraphic instructions to reduce the number of tubes accepted and shortly to cease to accept. This was a great blow to OSW after all their troubles with these tubes.

(2) The Russians then accepted no more LD 7 and LD 9 tubes and only the LD 11 and LD 12 then in the production line.

(3) Tube specialists in OSW who had worked in the USSR presumed that this meant that the USSR was now in a position to produce its own metal ceramic tubes in sufficient numbers. Such specialists suggested Novosibirsk as the possible seat of this production.

d. OSW has decided to continue with the production of these tubes only until current Sachsenwerk Radeberg orders have been fulfilled. As far as is now known, it will then cease. Departmental head Heinz Ruhnke has been transferred to [redacted] (General Technical Control). Franz Belke, his deputy, has gone to the radio tube production department.

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3. (1) In the latter half of May 1953, there was a conference in OSW attended by

Dr. Ignatz Ladurner fnu Heidborn fnu Brinkmann	OSW
Dr. Herbert Daene	Astrophysical Observatory, Potsdam.

The meeting was called to discuss the development of a metal ceramic triode to be used as an amplifier at wavelengths of 8 to 12 cms. This task is a Russian one, set before the beginning of 1953. It has never been put in writing, however, and there is still no type number or official designation for the tube. It may not appear in the official development program.

(2) The cathode of this tube is to be an indirectly heated power cathode. The distance cathode: grid will be 40 microns. The tube will have a radiator for radiation cooling.

(3) The same tube will also be built in metal and glass, using Kovar. The OSW works does not yet know who will supply the Kovar.

2. CRT type OSW 2109

OSW 2109 was a copy of the AEG type 5 FP 7 CRT, which could have military applications. OSW 2109 was built by OSW in 1946. It has not been produced since 1947. It is known that old stocks were given up a short time before early April 1953. As no further production is intended , parts are now being used for other purposes.

3. Large transmitter tube production

About 15 tubes per month of each of the types RS-566 (100 kW) and RS 558 (40 kW) were being made in April 1953. Production is supposed to be doubled now, although it is doubtful if that can really be done. There are not enough pumps, for one thing. Production of these types is also to be started in the Erfurt tube factory.

4. Miniature tube production

a. ECH 81 has been in production since Christmas 1952. At least 10,000 a month are being made. Another production line was expected, in May 1953, to be installed, so that production could be still further increased.

b. At the beginning of May 1953, EABC 80 and EF 85 were also released to series production. An output of 9,000 tubes of each type was planned for May. 600,000 of each are planned for the whole of 1953, and 1.5 million for 1954.

5. Measuring instrument type EF 2500

This is a field strength meter for wavelengths of 8-12 cms.

6. Discharge lamps.

a. The discharge lamp section of OSW, headed by one Ihln (fnu), moved to the Berliner Gluehlampenwerk, Berlin O.17, Warschauer Platz, its old home, in April 1953.

b. [redacted] the discharge lamps [redacted] are at a pressure, cold, of 2 atmospheres and warm, 4 atmospheres. Xenon is the normal filling. 50X1-HUM

c. Of all the discharge lamps which could be made in OSW at the beginning of the year, the following were described in full in the normal OSW catalogue:

Type	OSW-Number
NAE 24	2526
CDE 14	2527
ZNE 16	2529
HQE 50	2528
NEE 40	2533
KAE 18	2530
RBE 14	2531
CSR 12	2532
HBO 2000	2524
HBO 107	2521
HBO 200	2522
HBO 500	2523
Neon fluorescent tubes (Neon-Leuchtroehre)	2499
HBO 510	2452
TLE 10	2534
HBO 2011	2525
HJE 50	3201
Neon fuses (Glimmzuender)	2609

7. Rearrangement of sections

The space formerly occupied by the discharge lamp section has been taken over by an extension to the picture tube production section, and a new department for super iconoscopes.

8. Transmitter tubes

a. 1 kW transmitter tube type HF 2730 is being produced in Werk "HF" and the pace is being considerably forced. 5 tubes were made in April and 10

in May 1953. Production is to be increased to 30 tubes per month. 10 tubes have been supplied to VEB Funkwerk Koepenick, Werk "HF" has heard that production of this tube is to start in Hungary.

b. A 10 kW transmitter tube, HF 2780, is also being produced by Werk "HF". Funkwerk Koepenick has asked for it to be produced with water instead of its normal air-cooling. 4 water-cooled and 4 air-cooled tubes of this type are to be made by 1 September 1953.

9. "Statistical cards".

On Friday 22 May 1953, a member of the personnel section appeared in a design section of OSW and ordered the members of that section to fill in a long form headed "Statistical card". This form asked 43 questions on everything from social origins to where a man had been a war prisoner. This long form caused some disquiet in the works, as the deportations of 1946 were preceded by similar "statistical" enquiries.[1]

C. German specialists repatriated from the USSR and now employed in the Werk "HF"

(a) Surname
(b) First name
(c) Title
(d) USSR area from which they are believed to have returned
(e) Position in Werk "HF".

G=Gorki L=Leningrad M=Moscow S=Schelkovo-Fryazino Kst=Kostenstelle.

(a)	(b)	(c)	(d)	(e)
Bauer	Herbert	Dr.	L	Head of the oscillating quartz section; Kst E28-135
Bausener	Arno		G	Technician in the CW transmitter laboratory; Kst E26b-110
Belke	Franz		L	Deputy chief of metal ceramic tube production; Kst MFL-400
Eichhorn	Max		L	Glassblower; chief of glassworks; Kst EW3-124
Fisher			M	Technician in the tube research division; Kst EW2-125
Ganswind	Rudi		S	Technician in the large transmitter tube laboratory; Kst E21d-120
Grove	Albert		S	Chief of the metallurgical laboratory; Kst MLB-350
Jaesche	H.		L	Technician in the getter laboratory; Kst GLB-350
Junker	Herbert		S	Chief of the power supply laboratory; Kst E26o-110
Kettenbach	Walter		S	Expert for development and reconstruction management; Kst 027
Klang	Helmut	Dr.	S	Chief of tube research section; Kst RV-355
Koenner			M	Machine construction; Kst 601
Krueger	Erich		M	Chief of radio tube production; Kst RFL-400
Mauer	Hugo		L	Chief of photo-electric special tube laboratory; Kst E22b-130
Myrach			M	Chief of tool construction; Kst WBL-580
Neidhardt	Peter	Dr.	M	Scientific office; Kst WS-100
Oertel			G	Chief of the CW transmitter laboratory; Kst E26b-110
Rehbock	Eckehard		M	Chief of the HF measuring equipment and oscillographic section and deputy chief of research; Kst E27-150
Richter	Kurt	Dr.phil	S	Branch chief of laboratory management and deputy technical directory; Kst BLN-350

(a)	(b)	(c)	(d)	(e)
Rohde	Walter	Dr.	G	Chief of detector section; Lst E29-135
Rothenburg	Paul		S	Chief of tube production and deputy chief of tube production chiefs; Kst VFL-400
Schadow			S	Technician in transmitter tube laboratory Kst E21d-120
Schiller	Alfred	Dr.	L	Technical director; Kst TD-050
Schoen	Paul		S	Chief of the special tube construction sections; Kst 411
Schoenfelder	Otto		S	Foreman (Meister) in large transmitter tube construction; Kst EW2-125
Thurley	Albert		S	Chief of HF engineering III laboratory; Kst E27c-150
Wende	Heinz		S	Chief engineer; Kst HM-860
Wiedemann	Walter		L	Chief of the tube construction section; Kst K1-120
Zander	Hans		S	Group leader in equipment construction; Kst KBE-104
Zimmerman			L	Glassblower; Kst EW3-124

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[redacted]

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COUNTRY East Germany REPORT NO.

TOPIC Soviet Supply Installations in Fuerstenwalde, Ketschendorf, Bad Saarow

VALUATION 50X1-HUM

DATE OF CONTENT

DATE OBTAINED DATE PREPARED 21 September 1953

REFERENCES

PAGES 2 ENCLOSURES (NO. & TYPE)

REMARKS

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1. In April and May 1953, a Soviet gun repair shop headed by Colonel Koslov (fnu) was housed in the former cable plant, next to the Deka tire plant in Fuerstenwalde. A large hard chrome plating installation arrived for the work shop in early April.[1]

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2. an underground ammunition depot of the engineer equipment park in Ketschendorf, south of the Spree River, was located in a triangle north of the Spree River, formed by the Koenigsgestell, the drill grounds and Berkenbruecker Chaussee. The ammunition depot is detached from the other part of the engineer park, the large area between Berkenbruecker Chaussee and the Spree River.[2] A total of about 500 men were employed at the depots of the engineer park.

3. A supply depot, detached from the quarters of the soldiers by a high board fence, was located on the extension of Lindenstrasse, opposite the drill grounds. Three concrete warehouses provided with a spur track were located on the other side of the Spree River. Empty ammunition boxes, 60 x 60 x 120 cm, were seen between earth bunkers in front of the warehouses. The installation included three low temporary barracks buildings and, three two-family houses, for the personnel and sheds for horses, horse-drawn vehicles and motor vehicles. Four small houses for officer dependents were located outside the depot. The installation was occupied by about 300 men.[3]

4. Straw and potatoes for the Soviet troops were stored in warehouses and grain elevators on the premises of the former starch factory at 91 and 92 Linden Strasse.

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5. Ammunition was stored in some of the barracks buildings of the damaged barracks installation at the Fliegerhorst, south of the Fuerstenwalde-Steinhoefel road. The central medical depot of the Red Army was housed in the former officers' quarters. The barracks installation on the north side of the Fuerstenwalde-Steinhoefel road were about 50 percent damaged. Two halls and the building of the former Luftaufsicht (air observation) were occupied by the Soviets.[4]

6. The tank training site of unit "Garten Strasse" was located about 400 meters east of the old firing range of the Fliegerhorst opposite the railroad station of Neuendorf-im-Sande, west of the road to Buchholz. The training area was bounded by

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Goelsdorfer Strasse and Buchholzer Strasse.

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7. The former high school and prime mover workshop were still occupied by about 200 men in mid-May 1953. About 25 prime movers with a new coat of paint and about 18 prime movers presumably still to be overhauled were parked in an open shed on the parking lot of the repair shop.[5]

8. In May 1953, the central signal equipment depot was located west of the railroad line between Pieskow and Bad Saarow and was provided with a spur track from the Pieskow railroad station. The depot was operated by about 250 troops who were billeted in Schloss Pieskow near Scharmuetzel Lake. Signal equipment stored in the depot included large quantities of material for the construction of telephone lines, telephone sets and teletype sets. No radio sets have so far been observed.[6]

9. The air force sanatorium at Bad Saarow was housed in two hotels on See Strasse, Kirch Strasse and Karl Marx Strasse. About 80 air force officers were seen there in mid-May 1953. The sanatorium was operated by about 50 women and men.

10. The quarters in the area of the former German Sperrersatzabteilung of the Luftwaffe was strictly guarded and therefore difficult to approach. In mid-May, about 150 soldiers wearing red-bordered black epaulets were stationed there. The unit was supplied from the Pionier Kaserne in Fuerstenwalde. The two units were interconnected by two direct telephone lines. A spur track led from the Bad Saarow railroad station to the Sperrersatzabteilung.[7]

11. A hospital for KVP was constructed east of Scharmuetzel Lake, west of the Bad Saarow-Pieskow railroad line. Three buildings were completed and partly occupied in mid-May 1953. Physicians named Eitner (fnu) and Hildebrand (fnu) and administrativ official Piper (fnu) were billeted in the administrative building of the hospital.

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1. Comment. Colonel Koslow (fnu) is reported for the first time.

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6. Comment. . The depot is subordinate directly to the GOFG It is regularly supplied by the USSR.

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7. Comment. A supply depot of the 7th Gds Mecz Div.