

CENTRAL INTELLIGENCE AGENCY
INFORMATION REPORT

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COUNTRY	East Germany/USSR/China/Poland	REPORT	
SUBJECT	VEB Werk fuer Fernmeldewesen HF, Berlin-Oberschoeneweide, Production	DATE DISTR.	3 February 1955
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		REFERENCES	

25X1

This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

1. The previously-reported uncertainty about the methods whereby Soviet orders reach the VEB Werk fuer Fernmeldewesen HF has still not been satisfactorily explained.¹ The position as of late October 1954 appeared to be that matters which were not classified as Secret (i.e. those mentioned in paragraphs 2-6 inclusive below) were routed through Soviet Trade Delegation and Wissenschaftlich-Technische Zusammenarbeit (WTZ - the East German office for exchange of scientific and technical information with the USSR and the Satellites), and matters which were classified as Secret (i.e. those mentioned in paragraph 7 below) were routed through the Ministry of the Interior. In the latter case, however, it was not clear whether all such items were included in the Ministry of the Interior's Special Plan (MI Sonderplan). 25X1
2. a. In August 1954, enquiries were received from the USSR as to whether the HF Plant could undertake the development of the following:
 - (1) a field-strength measuring instrument for 10 to 100 m.
 - (2) a decimeter test receiver for 14 to 70 cms.
 - (3) a pre-amplifier with travelling-wave tube for 14 to 30 cms.
 - (4) an ink-recorder (undulator) for high-speed telegraphy at carrier frequencies.
- b. The proposals on which these enquiries were based were submitted to the USSR by the HF Plant in 1952. With slight modification to the specifications mentioned below, the orders for (1) and (2) were accepted, but, by 4 October 1954, the HF Plant had not given a firm answer to (3) and (4). On 21 October 1954, the HF Plant received word from the Soviet Trade Commission requesting that specifications (Pflichthefte) and prices for the four orders be ready by 27 October 1954. All of the documentation had been completed for the field-strength measuring instrument and the decimeter test receiver, but the specifications had not yet been worked out for the pre-amplifier with travelling-wave tube and the ink-recorder(undulator), so that compliance with the request by the date specified was impossible.

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STATE		ARMY	X	NAVY	X	AIR	X	FBI		AEC		ORR Ev	x	OSI Ev	x
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(NOTE: Washington distribution indicated by "X"; Field distribution by "#")

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25X1

-2-

3. Field-strength measuring instrument

Accuracy: 10%

Sensitivity: 0.25 V/m

Frame aerial, capable of adjustment to meet any direction of incidence

Power supply: (1) AC mains at 110/127/220 volts at 50 cycles, with the proviso that efficiency should not be impaired by a voltage variation of -15 to +10%.

(2) battery.

Facilities to be provided for listening to the transmitter on which a bearing is being taken and for automatic recording on a printer. The HF Plant, in its acceptance, could only offer an absolute accuracy of 30%, a relative accuracy of 10% and a sensitivity of 0.5 V per meter with an interference ratio of 3:1.²

4. Decimeter test receiver 14-70 cms

[Redacted]

25X1

The highest possible sensitivity.
Coaxial feed with a characteristic impedance of 75 ohms.
Precision of frequency better than 1%, to receive:

- (1) frequency-modulated signals, between +/-100 to +/-400 kcs, and
- (2) impulse-modulated signals with intervals of from 0.4 to 5 secs.

Power Supply: (1) AC mains at 110/127/220 volts at 50 cycles, with the proviso that efficiency should not be impaired by a voltage variation of -15 to +10%.

(2) battery.

Two low-frequency output positions, one for listening and the other for visual amplification. The equipment to be either static, or mountable in a small vehicle.

5. Pre-amplifier with traveling-wave tube 14-30 cms

[Redacted]

25X1

Coaxial feed with a characteristic impedance of 75 ohms, and a similar output for connection to a straight amplifier (Geradeausverstärker).
Amplification 25-30 db
Able to withstand vibration up to 5-6 g.
Temperature tolerance of -50 to 60 degrees centigrade and the ability to maintain full efficiency in an atmosphere having 95% humidity.

Power supply: (1) AC mains at 110/127/220 volts at 50 cycles, with the proviso that efficiency should not be impaired by a voltage variation of -15 to +10%.

(2) battery.³

6. Ink-recorder (undulator) for high-speed telegraphy

To work at 3000 marks per minute. No other particulars are available.

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25X1

-3-

7. The following three orders for the USSR were excluded from the production plan on grounds of security:
- a. Nr. 52/3 heterodyne test receiver (Ueberlagerungs-Messempfaenger) for the range 9-80 cms.
 - b. Nr. 52/11 tube microvoltmeter
 - c. Nr. 52/13 field-strength meter for the range 360-10,500 mcs.
- No further details are known.
8. Detectors. No more silicon and germanium detectors were being made in the HF Plant, except for a few test detectors for 1.25 cms required for the plant's own use. The whole detector production program has been transferred to the VEB Werk fuer Bauelemente der Nachrichtentechnik "Carl von Ossietzky", Teltow (formerly the Dralowid-Werke).
9. Transistors. In transistor development, the HF Plant has been more successful than the "Carl von Ossietzky" Plant.⁴ The HF Plant peak detector has achieved a power amplification of 20 db. Dr. Ing. Hans Boehm, who is at present in charge of this development work, has stated that the production rate of this type of transistor will be about ten per day. Attempts are being made in the HF Plant to stabilize transistors by embedding them in Araldite D and in the "Carl von Ossietzky" Plant to develop level transistors (Flaechentransistoren).⁵
10. Magnetron LMS 1000. This magnetron is being developed for a wavelength of 10 cm; no further particulars are at present available. It is included in the Ministry of the Interior's Special Plan.
11. Pencil-tube triode. The development has been ordered of a pencil-tube triode, for battery working, for frequencies up to 2000 mcs. A trial specimen with this range is to be completed by the end of 1954 and subsequently an attempt will be made to produce one for 3000 mcs. This is also included in the Ministry of the Interior's Special Plan.⁶
12. Low noise-level travelling-wave tube for the 2,300-2,450 mcs range; this tube was included in the Ministry of the Interior's Special Plan.
13. Super-iconoscopes. The development of the super-iconoscope was actually under the direction of Dipl. Ing. Walter Hass in the Zentralinstitut fuer Funktechnik (Central Institute for Wireless Engineering -ZIFT), Berlin-Adlershof. The HF Plant merely assumed responsibility for production. Although Ing. Hugo Mauer in the HF Plant played a major role in the transfer from development to production, he was not empowered to pursue new developments in this field.
14. According to Party Secretary Rausch, Dipl. Ing. Hass' development department, with its staff of about 100, was to be incorporated in the administrative organization of the HF Plant. Because of inadequate instructions on the part of Dipl. Ing. Hass, there had been difficulties not only in production, but also in the extraction of gases from glass containers, in their selection, and in questions of practical handling. The production rooms were not sufficiently free from dust, so that there was a high percentage of rejects. Dipl. Ing. Hass, in

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25X1

-4-

the meantime, developed a new iconoscope at ZIFT, which was to be produced there. It is a Rieselikonoskop, (literally, an open-surface iconoscope) and the production rate was to be about 30 per month. The cameras of ZIFT were being fitted with this new tube in October 1954. A vidicon and an image orthicon were also under development and in the first stages of testing.

15. Production of television tubes in ZIFT. The high vacuum tube department of ZIFT, under the direction of Dipl. Ing. Hass, in addition to its development work, produced television receiver tubes, concentrating mainly on a type of super-iconoscope which was being produced at a rate of about 10 per month, to meet the requirements of ZIFT itself and possibly one or two other East German customers. The series production of such tubes, however, does not fall within the work of the Institute.
16. Teleprinters. Two teleprinters are being developed in the Telegraph Apparatus Department; one is a page printer, and the other a small tape printer. Both are suitable for double switching (mit doppelter Umschaltung) and both are fitted with enciphering equipment. They are included in the Ministry of the Interior's Special Plan.
17. Electron Microscope. In 1955, series production of the electron microscope is to be started. In spite of strong competition from VEB Carl Zeiss Jena, large orders were expected. Reports praising the quality of the picture definition (Bildaufloesung) have been received from East German laboratories which have already received instruments from the HF Plant, e.g. Agfa, Bitterfeld, Leipzig University, the Institute for Medicine and Biology at Berlin-Buch. During 1955, a small electron microscope is to be developed. The head of the Electron Microscope Department, Von Koeber (fnu), is a very capable physicist.
18. Industrial television equipment. The East German power-supply authority enquired in October 1954 whether the Wissenschaftliches-Technisches Buero 3 (WTB 3) was able to undertake the development of television transmission systems for industrial purposes, e.g. observation by television of boiler furnaces etc. As the WTB-3's optical department was not in a position to take this on, WTB-3 enquired if the HF Plant could do so. Dipl. Ing. Rehbock stated that the HF Plant had the necessary resources and experience and would be prepared to accept the commitment.
19. Television transmitter. On 29 July 1954, a committee appointed by the Central Control Commission of the SED visited the Dresden television transmitter station and required that the acceptance tests should be repeated. The committee consisted of Uhlig (fnu) as representative of the SED, Stier (fnu) from the State Broadcasting Committee, Friedrich (fnu) of ZIFT, Hoffmann (fnu) and Funk (fnu) from the Television Center, Berlin-Adlershof and Dr. Mansfeld (fnu) and Basner (fnu) from VEB Sachsenwerk Radeberg. Two engineers of the HF Plant, Sims (fnu) and Koenig (fnu), carried out all the required tests to the satisfaction of the committee. It was demonstrated, however, that modulation received over the decimeter link (built by Sachsenwerk Radeberg) showed fluctuations in a degree of 1 to 4 and that the link itself exhibited unacceptable fluctuations. As the responsibility for this could not be placed upon the HF Plant, the test established that the transmitter did as well as was possible with the unsatisfactory picture received, and that Basner's assertion that the transmitter was completely unusable was without foundation.

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25X1

-5-

20. On 30 July 1954, a meeting was held in the HF Plant to prepare a semi-annual report on plan fulfilment. It was found that, in general, only 75% had been achieved; the electron microscope and television sections had done best, and the carrier frequency and electro-acoustic sections had reached only 20% each. The Ministry of the Interior's Special Plan was not discussed.
21. Jamming transmitters. In the year ending August 1954, 300 jamming transmitters were produced in the HF Plant. They operate on normal broadcast frequencies and use a P-50 tube. The documentation for them was sent from the USSR; none of the development personnel was allowed access to the sets during testing and acceptance. Briesemeister (fnu), head of the Apparatus Construction Department, commented that, in spite of security measures, a West Berlin newspaper reported the construction of these jamming transmitters. All 300 have been distributed and are presumed to be at work in East Germany, jamming West German and West Berlin transmitters.
22. Working Party on television measuring techniques. On 22 July 1954, the Working Party on television measuring techniques met in the HF Plant under the direction of Dipl. Ing. Rehbock and was attended by representatives from Sachsenwerk Radeberg (Dr. Mansfeld (fnu); VEB Funkwerk Koepenick (Dipl. Ing. Heinz Dobesch); ZIFT, Berlin-Adlershof (Friedrich (fnu); Fernseh-Zentrum, Berlin-Adlershof (H. Hoffmann); HV RFT (Hauptverwaltung - Radio-u. Fernmeldetechnik) (Scholz (fnu)). Among the subjects discussed were recommendations to be made to the State Planning Commission on the following subjects:
- Color meter (Farbmesser)
 - Luminous density meter (Leuchtdichte-Messgeraet)
 - Hum recording (Brummregistrierung)
 - Frequency deviation measuring instrument (Frequenzverwerfungs-Messgeraet)
 - Rectangular-wave test generator (Rechteckwellenpruefgenerator)
 - Supervisory oscillograph for transmitters (Ueberwachungsozillograf fuer Sender)
 - Linearity measuring instrument for scanning-oscillators (Linearitaetspruefgeraet von Kippgenatoren)
23. Working Party on super-high-frequency measuring technique. On 2 August 1954, the working party on super-high-frequency measuring technique met under the chairmanship of Dipl. Ing. Rehbock and prepared a program for submission to the State Planning Commission. It authorized development work on measuring instruments in the super-high-frequency range to a value of 1,000,000 DME. After approval, the greater part of this work is to be carried out during 1955 in the HF Plant.
24. Commission for the supervision of development offices. On Monday and Tuesday, 11-12 October 1954, the commission for the supervision of development offices met in the HF Plant under the chairmanship of Professor Josef Stanek. The development chief, Dr. Ing. Guether Ulrich, and the three departmental chiefs, Dipl. Ing. Rehbock, Zeh (fnu), Hubl (fnu), met with Professor Stanek, who wished to obtain information on all the development tasks for the year 1955, in order to assess their importance. As Professor Stanek was not very well informed on the technicalities of HF engineering, he was not in the position to pass judgement on the significance of the new tasks, and, accordingly, the representatives of the HF Plant had little

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25X1

-6-

difficulty in convincing him of the value of all their development, thereby assuring for the HF Plant in 1955 a development program worth 12,000,000 DME, providing that the appropriate planning offices pass on all the expected orders. The Ministry of the Interior's Special Plan does not come within the Commission's terms of reference and accordingly the orders comprised in it did not come up for discussion.

25. On the occasion of this meeting of the commission for the supervision of development offices, Mix (fnu) of the Funkwerk Leipzig-Plagwitz visited the HF Plant, and used this opportunity to enquire about the possibility of the HF Plant taking on the following development tasks:
- a. A wide-band monitoring receiver, 30-300 mcs. This order was originally given to VEB Funkwerk Koepenick, where Dr. Erich D. Schuettloeffel was to have worked upon it. When he went to West Germany, efforts were made to find a suitably qualified successor.
 - b. A submarine transistor amplifier. ⁸

Both these tasks lie within the sphere of the HF Plant and could be worked on there; whether or not they are in the Ministry of Defense's Special Plan is not known.

26. On the Day of the Republic (7 October), 167 members of the staff of the HF Plant were declared Activists. All of the higher awards, which had been proposed for Director Rudi Mueller, Dipl. Ing. Alfred Thurley, etc, were not published on the grounds that the superior state planning offices were to take credit for the greater part of the successfully-concluded developments in the HF Plant and, accordingly, awards of distinctions would be made to them in the first place. Thus, all the Government's special premiums for the HF Plant were cancelled; instead of them, Director Mueller distributed to the Activists premiums in amounts varying from 100- 2,000 DME out of the Director's Fund.
27. European Technical Standards Committee. On 19 and 20 October 1954, negotiations took place in the offices of the Standards Committee in West Berlin (Uhlandstr.) which are intended to lead to the foundation of a European Technical Standards Committee of VHF and for television broadcasting.
28. An enquiry was received in the middle of September whether a 10 kw television transmitter could be delivered to Communist China. The HF Plant replied that it could be delivered 9 months after receipt of a firm order.
29. During 1955 a reporting unit (Reportageanlage) with two television cameras is to be delivered to Poland.

1. [redacted] 25X1
2. [redacted] Comment. [redacted] the instru- 25X1
ment appears to be intended for monitoring illegal transmitters; the recording
of the transmission times should make possible their speedy discovery. 25X1
3. [redacted] Comment. [redacted] it appears that this is 25X1
a further development of an instrument developed in the USSR by Dipl. Ing. Eckhard

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[REDACTED]

25X1

-7-

Rehbock; the purpose was to increase the sensitivity without redesigning the equipment for heterodyne reception in the input stage. In other respects, the same specifications are required as for the field instrument. 25X1

4. [REDACTED] Comment. Information received via another channel states that transistor development was officially transferred to the Teltow plant because the HF Plant was not able to develop a working model. Recent information from Teltow indicates that they have produced a small number of transistors. [REDACTED] 25X1

5. [REDACTED] Comment. [REDACTED] a senior official of the HF Plant expressed the opinion that, whereas production of detectors in the USSR has reached a stage where quantity and quality are good enough for interest in East German production to have lapsed completely, the Soviet production of transistors has not reached a point where the East German potential can be dispensed with. 25X1

6. [REDACTED] Comment. [REDACTED] the tubes which were to be ready by the end of 1954 would not be suitable for the radar equipment in the 2,300 - 2,400 mcs. range, the development of which it was believed had been commissioned by the Ministry of the Interior at VEB Funkwerk Leipzig-Plagwitz or VEB Funkwerk Dresden. 25X1

7. [REDACTED] Comment. NTB-3 was later called Wissenschaftlich-Technisches Buero fuer Geraetebau (WTBG), under SAG Kabel, and then, after 1 January 1954, VEB WTBG. 25X1

8. [REDACTED] Comment. [REDACTED] this instrument appeared to be intended either for the control of navigational channels, or for the detonating of mines. 25X1

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