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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

REPORT

CD NO.

COUNTRY East Germany

DATE DISTR 29 September 1954

SUBJECT Information on VEB Funkwerk Dabendorf

NO. OF PAGES 8

PLACE ACQUIRED

NO. OF ENCLS. (LISTED BELOW) 25X1

DATE OF INFO.

SUPPLEMENT TO REPORT NO. 640475

THIS IS UNEVALUATED INFORMATION

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1. The Dabendorf Radio Plant, which was formerly a subsidiary plant of the C. A. Lorenz firm, was scheduled to be demolished by the Soviets. This plan, however, was given up and 200- and 800-watt marine transmitters of the so-called "Ehrenmal" type, were built for the Soviets from stocks available at the plant. 25X1

2. In 1951, the plant was placed under the trusteeship of VVB RFT Leipzig; it was made a nationalized enterprise in 1952. When the Ministerium fuer Post- und Fernmeldewesen was set up, the Dabendorf Plant was placed under this ministry, first as a subsidiary of Funkwerk Koepenick and later as an independent plant.

3. The managers of the plant changed frequently between 1951 and 1953. Obiglo (fnu) was dismissed without notice for illegal operations and embezzlement; his successor Magerstaedt (fnu) was also dismissed for embezzlement. The latter was followed by technical manager Ploese (fnu), a locksmith by training who had to be transferred to Funkwerk Koepenick because of inefficiency. Hosaek (fnu), who had been transferred to Dabendorf from RFT-Anlagenbau Brandenburg was plant manager in late 1953. He previously worked at RFT-Anlagenbau in Rostock .

4. In January 1954, approximately 560 persons, including 80 administrative personnel and 60 apprentices, worked at the plant.

5. The following radio equipment has been manufactured at the plant:
   a. 800-Watt and 200-Watt "Ehrenmal"-type transmitters; medium-wave transmitters (500 to 800 meter waves); limit-wave transmitters (100 to 200 meter waves); and short-wave transmitters (12.5 to 100 meter waves). From 1945 to 1953, a total of about 400 sets were delivered, mainly to RFT-Anlagenbau in Rostock for installation on ships to be delivered to the USSR on reparations account. Four 200-Watt transmitters for short and medium waves for trawlers were also built. Other radio sets were delivered to the Main Administration of the Volkspolizei, to the Sea Police to China and Rumania through DIA, and a Soviet Army in Wuensdorf. 25X1

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In the fall of 1953, three 800-Watt transmitters previously delivered to this unit underwent general overhaul at the plant.

b. All-wave receivers. They covered a wave range between 10 and 2500 meters, divided into eight wave-range groups and a ninth group for the"distress call wave". Total production was about 300 sets, which were delivered to RFT-Anlagenbau Rostock and the Main Administrations of the Volkspolizei and Seepolizei. In the fall of 1952, the Soviet unit in Wuensdorf received a total of 20 all-wave sets.

c. 25-Watt marine telephony equipment. A total of 60 units of the equipment were delivered to the USSR while 80 sets were manufactured at the plant for use in the GDR. The development of this type of equipment has not yet been terminated. During the second half of 1954, a total of 60 sets were scheduled to be delivered to RFT-Anlagenbau Rostock for installation on cutters, to be exported to the USSR, and another 80 sets were earmarked for cutters of the East German fishing fleet.

d. Drifter transmitters. About 30 transmitters of this type have been manufactured up to the present time. This equipment was developed by Funkwerk Koepenick. Production was scheduled to start during the third quarter of 1954.

e. Transmitters for geophysical tests. Twenty transmitters of this type were delivered to the Geophysikalisches Institut at Brieselang (near Nauen) in 1951, another four in 1953. The 20 sets were delivered by Brieselang to the Geophysical Service in Leipzig, while the 4 remaining sets were delivered to Communist China. Other orders were expected to be received from East Germany, China, Hungary, Poland and Czechoslovakia.

f. Twenty portable transceivers were delivered to the See olizei through the Buero fuer Wirtschaftsfragen (Bureau of Economic Affairs) in 1951/1952.
An order for 70 sets was placed in 1953 but subsequently cancelled because the equipment was scheduled to be redesigned.
A total of 35 sets were ready for dispatch to the Seepolizei beginning late January 1954.

6. The production quota of the plant amounted to about 3,000,000 eastmarks in 1952 and probably twice this sum in 1953. Production plans were slightly overfulfilled between 1951 and 1953.

7. No investments were made prior to 1952 as the plant was under trusteeship and received no investment funds, nor was it allowed to make investments. In 1953, a comprehensive investment plan was drawn up. Originally, about 800,000 eastmarks were appropriated, but this sum was reduced by 50 percent in connection with the economy drive started in the spring of 1953.
Under the curtailed investment scheme, the following plan could be carried out:
a. The construction of a new workshop with space allocated as follows:
development department (about 60 square meters),
designs office (about 80 square meters),
new locksmith's shop (about 250 square meters),
sand blasting shop (about 70 square meters),
galvanizing shop (about 100 square meters).

b. Machinery and technical equipment procured included:
a sand blast apparatus,
a complete galvanizing plant,
a 5-ton press,
a cylindrical grinding machine for reducing shaft diameters,
a surface grinder for tools (Flaechenschleifmaschine fuer Werkzeugbau)
a precision grinding machine.

c. Investments made for the development department included:
a type 121 precision frequency meter,
a 159-type measuring generator,
an induction meter,
a 220 A -type sound generator,
a 114-type tube voltmeter,
a 116-type tube voltmeter, all made by Funkwerk Erfurt,
a cathode ray oscillograph made by the S & H firm at Zwoenitz, 1/
a Faraday cage 2.5 x 3.5 meters designed at Dabendorf.

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d. Investments were also made for various test instruments including a precision frequency meter.

8. Except for the items mentioned above, all mechanical equipment available had been taken over from the C. A. Lorenz firm. This equipment, on which source could give no detailed information, included the following machines:
2 lead screw lathes, 5 small lathes, 3 semi-automatic lathes, 2 milling machines, 1 shaping machine, 1 large mechanical drill, 2 small mechanical drill, 2 grinders, 1 horizontal grinding machine, 2 new winding machines and 6 small hand-operated winders. Almost all of these machines were in poor condition.

9. Some of the 800-Watt and 200-Watt transmitters were built from stocks of the former German Army. Old stocks of component parts were gradually exhausted and were continuously replaced by copied or newly developed parts. The converters used with the 100-Watt marine radio sets (cutter radio equipment) were U 10 S-type converters for FuG 10-type military radio sets of the former German Army, which were still available in large quantities. Ceramic components, such as fixed condensers and variometers, were supplied by the Keramisches Werk "Hescho" at Hermsdorf. They were of excellent quality and always met all specifications. Transformer and dynamo sheets were mainly ordered from Thalheim, but difficulties were experienced as there was no direct contact with that place. Source believed that stocks were adequate for current production since, according to GDR regulations, all surplus stocks had to be delivered to DMZ "Innere Reserve". No so-called "state reserves" were available.

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On 1 January 1953, the HV Funk of the Postal and Telecommunications Ministry ordered an independent development section at the 25X1
Dabendorf radio engineering plant. Missions assigned to this development section included:

a. Continuation of development work on and improvement of life-boat radio equipment fitted with hand-operated generator, previously developed by Funkwerk Koepenick.

b. Development of a 25-Watt marine radio-telephony equipment by order of the Karlshorst reparations office. The technical specifications were laid down at VEB Schiffbau on Stuehlinger Strasse, Karlshorst, at a meeting attended by Blinow (fnu), an adviser of VEB Schiffbau, and representatives of Funkwerk Dabendorf.

c. The Ministry of the Interior had placed an order for the development of a portable transceiver for the Sea Police. 25X1

11. The plant security detail was composed of 10 - 12 plant workers who were subordinate to the VP. Visitors to the plant had to be in possession of a permit. No unescorted outsiders were allowed to enter the premises of the plant, nor could they enter all shops even if they were in the company of another person.

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1. 25X1 Comment. Probably the former Siemens & Halske plant; now known as VEB Messgeraetewerk.

2. 25X1 Comment. A list of leading personnel of the Dabendorf plant is attached as annex 1. Radio equipment developed at the Dabendorf plant is described in annex 2.

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General Structure and Personnel List

as of 1 January 1954

Information is incomplete.

Plant manager	Hosack	25X1
Managing engineer	Bickel	
Commercial manager	Moc	
Production manager	Wuesthof	
Head of personnel	Schwarz	
Labor manager	Werner	
Head of planning section	Ibe	
Head of technological section	Sohr	
Head of design office	Kuse	
Head of production section	Schindler	
Temporary head of test field	Muessener	
Head of development section prior to January 1954	v.Sengbusch Cord	
successor	Klein	25X1
Engineer	Eppen	
Engineer	Guenther	
Technician	Berkholz) Britz)	
Stenographer	Miss Ewert	
Chief mechanic	Held	
Head of materials supply section	Schmidt	
Head of sales department	Franzke	
Plant party secretary	Lumitsch	
Chairman of the shop trade union organization (BGL)	Abraham	
Chief of factory police	Joswig	
Chief of the fire brigade	Langhans	

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Description of Radio Equipment developed at the Dabendorf Radio Engineering Plant from 1951 to 1953

A. Small transmitter for geophysical tests, called Geo-Sender Ty: GS 1-51 (GS 1-51-type geo-transmitter)

1. Purpose: Seismographic tests.
A conducting wire is wound round the blasting cap, which is destined to produce the sound wave, and which will be broken at the moment of the explosion. This shearing wire is connected to the transmitter and, at the moment of shearing, releases a signal which is emitted by the transmitter and received by all recording stations and recorded by a sliding oscillograph.

2. Design: The transmitter is designed as three-stage transmitter.
The master oscillator is equipped with an EF-12 tube, the separator stage with an EF-12 tube and the power stage with an EL-12 tube. The transmitter is also fitted with a sound generator, a keying stage and a modulator, each fitted with an EF-12 tube. The mean output of the transmitter is 2.5 watts. The transmitter has a fixed operating frequency of 3.15 mc/s and a fixed alternative frequency of 3.2 mc/s. The operating methods are: A 3, A 2 and break in. The modulation is effected at the grid of the final stage. The sound generator is designed for the transmission of the shearing signal. When operating method A 2 and break in are employed, the transmitter as well as the sound generator oscillate through. At the moment the keying stage is released by the shearing of the break in wire or by operating the Morse key, the transmitter is modulated with the 500 c/s signal. This was the only means to comply with the specification demanding a reduction of the time error to less than 20 microseconds.

B. Portable SEQ - 1-51 type transmitter-receiver equipment

The portable transmitter-receiver equipment consists of two components arranged in a common casing. The dimensions of the case are: width 500 millimeters, height 400 millimeters, depth 240 millimeters. The entire set weighs about 40 kilograms. The upper part of the casing houses the transmitter and the receiver, and the lower the power supply.
The transmitter comprises the crystal-stabilized control stage and the power stage. The crystal stage works at a fixed frequency of 1875 kc/s and is fitted with an EF-14 tube. The power stage has an EL-12 tube and feeds the antenna circuit with a carrier capacity of 10 Watts. The transmitter is used only for A 1 operation.
The receiver is a two-circuit straight receiver equipped with three tubes. The high-frequency amplifier has a fixed input circuit tuned to one frequency, while the regenerative audio stage has a small variable condenser in the oscillation circuit by means of which the stage can be finely tuned within 2 kc/s. The oscillation frequency of the audio for the superimposing of the signal received is controlled by screen-grid potentiometers. A boosting tone filter which can be connected to the low-frequency amplifier, and which can limit the band width, serves to increase the selectivity. The receiver is arranged only for earphone reception.
The generator set is designed for 110-V or 220-V alternating current, or a 12-V storage battery and is fitted with an EZ-12-equipped rectifier and a vibrator. This device was built exclusively for the Sea Police. Test reports indicated that it was successfully used for communications between Berlin, Wismar and Ruegen Island and for ship-to-ship and ship-to shore communication.

C. Redesign of the SEQ - 1-51 type equipment

At the request of the Sea Police, the SEQ 1-51 equipment was redesigned to meet the following specifications:

a. The equipment is to be operational on three change-over frequencies, i.e.:
1875 kc/s - 160 meters
2000 kc/s - 150 meters
2142.85 kc/s - 140 meters
b. It shall also be suited for A-3 operations.
c. In addition to an antenna, about 25 meters long, a rod antenna, no longer than 2.5 meters, is specified.

For the above purpose the equipment was redesigned as follows:
The wiring of the transmitting arrangement remained unaltered. The master oscillator was fitted with a 6 AD 7 tube and the power stage with an LV 3 tube. The switching-over of the operating frequencies was effected by means of a quintuple Calit switch, and the antennas were tuned by a variometer. A fixed transfer coil was provided for the rod antenna. A coupling coil with reversible levers served to adapt the various antennas to the power stage. The keying of the transmitter was effected in the grid of the final tube, while simultaneously the antenna was keyed over from the receiver to the transmitter by means of the keying relay. The wiring of the receiver also remained practically unchanged. It was equipped with three EF 14-type tubes. The HF amplifier was simultaneously used as a modulating tube. The A 3 operation modulation was effected in the grid of the final tube. Switching over of the transmitter from A 1 to A 3 operation was done through a relay actuated by the microphone key.

2. 25-Watt marine radio telephone equipment, export-type, for the USSR.

The marine radio telephone equipment was developed at the initiative of the reparations section of the Soviet Control Commission in Karlshorst. The specifications were laid down in writing by the Soviet Control Commission after a meeting with [redacted] Minow.

1. Specifications:
   a. Transmitter.
   Transmitting frequencies: Wave range I 500 kc/s (distress call wave)
   Wave range II 2182 kc/s (call wave)
   Marine radio wave bands: Wave range III 1600 - 1800 kc/s
   Wave range IV 2300 - 3450 kc/s
   One frequency each to be set by an expert ashore was allotted to wave bands III and IV. On shipboard the four wave ranges can be selected only by pressing down a button.

   Antenna circuit capacity.
   The unmodulated carrier capacity was specified to be 19 Watts and the capacity at 80-percent modulation depth 25 Watts measured at an artificial antenna of R ~15 Ohm and C ~300 - 500 pF.
   Operation method in wave range I : A 2
   Operation methods in wave ranges II - IV : A 3.
   Kind of modulation: Anode-B modulation.
   Frequency precision:

$$\frac{\Delta F}{F} \leq 2 \cdot 10^{-4}$$

   Frequency constancy against variations of temperature:
   In case of self-excitation: $\Delta f_T \leq 2 \cdot 10^{-5}$ per 1 deg. centigrade
   If quartz-stabilized: $\Delta f_T \leq 5 \cdot 10^{-6}$ per 1 deg. centigrade

   b. Receiver.
   Reception frequencies: In this case wave range I may be dispensed with, because the equipments are designed for vessels for which this type radio equipment is not compulsory. Wave ranges II through IV are arranged similar to those of the transmitter.
   Sensitivity: better than 15 μV, measured at an output capacity of 50 mW, an interference distance of 1:3 and a modulation depth of m = 80 percent.
   Output capacity: 1 watt. The output capacity is needed only for a built-in loudspeaker.
   Low-frequency band width: 300 - 3500 c/s.
   Circuit control: superheterodyne receiver with 7 circuits and automatic forward control acting on the intermediate frequency tube, the oscillator tube and the high-frequency tube.
   Sound-volume control by hand on the low-frequency side. A spring grip with outside control is specified for the oscillator circuit to permit the fine tuning of the oscillator frequency within ± 3000 c/s.

   c. Automatic distress-call transmitter.
   In compliance with the 1947 Atlantic City rules for radio communications and those of the "International Convention for the Safety of Ships at Sea",

d. Current supply.
The mains unit is fed by 220-V alternating current and has a maximum capacity of 550 VA. Transformers are available for shipboard-mains operation by 110-V or 220-V continuous current or a 24-V emergency battery.

2. Description of the arrangement.

The transmitter, the receiver and the distress-call transmitter are each contained in a separate case and are housed in a common casing box. The casing box is about 550 millimeters wide, 420 millimeters high and 250 millimeters deep. The mains set is contained in a separate insert which is about 550 millimeters wide, 300 millimeters high and 250 millimeters deep. The radio equipment is switched on by a hook-shaped changeover switch lever fitted to the transmitter insert to which the microphone is hung. In addition, there is a time clock fitted to the receiver which can be preset to switch it on at intervals of every full hour or 30 minutes, and switch it off after 5 minutes, unless radio communication is established previously by lifting off the microphone. As long as the microphone is hanging on the hook switch, the sound volume control in the receiver is switched off so that the receiver works at full sound intensity, and the sound control does not work until the microphone is lifted off. A relay in the transmitter which is actuated by a key button, switches over the antenna from the receiver to the transmitter, simultaneously releasing the transmitter. The transmitter is keyed by the control stage. The transmitter is switched on when the "distress--call" button is pressed down and the keying line is connected to the automatic distress call transmitter, and the modulation amplifier is modulated at 800 c/s. A-3 operation and, inversely, A-2 operation in the II through IV wave ranges are eliminated by appropriate switching measures in the distress call wave. All safety devices required are arranged in the mains-connected unit behind a glazed hinged cover which, on being opened, switches off and locks the mains-connected unit. The specification prescribes a double-wire T-antenna, 2 x 12 meters, and a lead-in between 6 and 8 meters in length.

3. Constructional and technical data.

a. Transmitter.
The transmitter is of the three-stage type. The control transmitter is fitted with a 6 AC 7 tube. The separator stage or doubling stage is fitted with a 6 L 6 or LV 3 tube and works as a separator stage at 500 kc/s in wave range I, and as a doubling stage in the other wave ranges. The power stage is equipped with a 6 L 6 or an LV 3 tube. Each stage has two oscillating circuits, only one of which is permanently tuned to 500 kc/s while the second circuit can be tuned by switching on the fixed condensers. Balancing condensers assure the accurate balancing of the circuits. A pair of bushes, into which an oscillating quartz can be inserted, is arranged in the feed-back branch of the master oscillator. On removing the quartz, the pair of bushes is short-circuited so that the control transmitter can work on self-excitation as well as on quartz stabilization. The anode voltage of the control transmitter is stabilized to reduce frequency variations due to fluctuations of the mains voltage. A thermo-ammeter is fitted in the antenna circuit to control the antenna circuit. A reversible instrument is also fitted in to control the tubes, indicating the correct value of the cathode current.

b. The modulator consists of a modulation pre-amplifier, a modulation amplifier with phase reversal, and the counter-contact B-modulator proper. The modulation amplifier has dynamic-compression so that an average modulation of 80 percent in the transmitter is reached at any intensity of sound at which one speaks into the microphone.

c. The receiver is a standard 7-circuit (stage) superheterodyne receiver containing a high-frequency input circuit, an intermediate circuit, an oscillating circuit and 4 intermediate frequency circuits, and is equipped with EF 85, ECH 81 and ECL 85 tubes.
EBF 85

d. The automatic distress-call transmitter is a fully automatic device. The ship's call sign and her position, indicated in degrees of latitude and longitude, can be set with few manipulations in a few seconds.

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E. 25-Watt marine radio telephony equipment for use aboard German vessels.

The following characteristics mark the difference between the design of the above marine radio telephony equipment intended for use aboard German vessels and the design for exportation to foreign countries:

a. The transmitter is not fitted with 500 kc/s wave range I for the distress-call

b. The receiver has two tunable frequency ranges in the marine radio wave band (1600 through 2800 kc/s) and in the medium wave range (320 through 500 kc/s). The East German fishing fleet thus will have the opportunity of entering into communication with fishing fleets of other nations and to take radio bearings in the medium wave range. There will be no time clocks. It is also planned to provide the possibility of switching on the receiver independently of the transmitter. Inversely, the receiver will also be automatically switched on when the transmitter is set going.

c. There will be no automatic distress-call transmitter.

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