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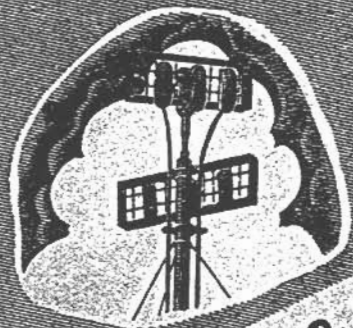
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RECOGNITION HANDBOOK

452.

of

FOREIGN WEAPONS & EQUIPMENT



WIRELESS & LINE EQUIPMENT



★ **U.S.S.R.** ★

VOLUME 1



TACTICAL
PART-8
ROYAL
SCHOOL OF ARTILLERY

M.I.10. THE WAR OFFICE

RESTRICTED

PART 8

SOVIET ARMY WIRELESS AND LINE EQUIPMENT

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THE WAR OFFICE
APRIL 1955

INTRODUCTION

Most of the signal equipment in use in the SOVIET ARMY is of native origin and of post-war manufacture. Although considerable quantities of signal equipment supplied to USSR under the lend-lease programme it is only rarely that American items are reported in use.

SOVIET ARMY wireless and line equipment is entirely utilitarian in design, the being on simplicity for ease of manufacture, operation and maintenance. There is a marked improvement in the quality of post-war equipment, but most items are improved versions of pre-war or wartime basic designs.

Compactness appears to be of secondary importance and there is no evidence of use of miniature components in field wireless sets. Most of the field wireless sets are in the HF band. Multichannel radio relay equipments operating in the UHF/S bands are used.

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TRANSMITTER-RECEIVER TYPE RBM, RBM and RBM-5

This is a two man-pack MF-HF transmitter-receiver used for communication between Rifle Regiments and Artillery brigades to H.Q. of units, and sometimes from D Brigade. RBM-1 is the latest model and is in use with some Satellite armies.

Points which will help in identification are :—

1. Symmetry of the panel layout of RBM-1.
2. In case of RBM-5 the power and handset sockets are situated together on one side of panel.
3. Metal case housing with rings for carrying harness, but complete equipment is packed into a wooden transit chest. The separate battery case is externally attached to the transmitter-receiver.

4. Physical data :—

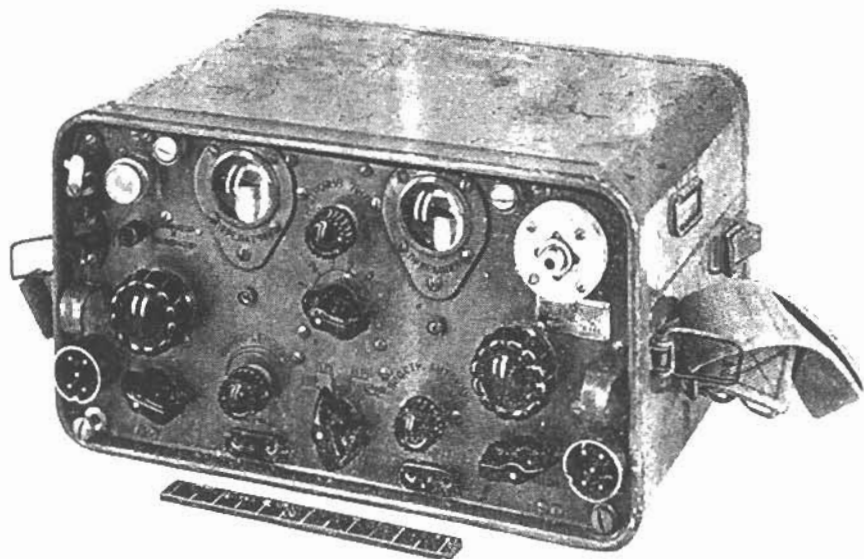
Size of receiver $13'' \times 7'' \times 10\frac{1}{2}''$	..	..	..	Weight $27\frac{1}{2}$ lbs
Separate battery pack $13'' \times 7'' \times 10\frac{1}{2}''$	..	..	..	Weight $27\frac{1}{2}$ lbs
Transit chest $29'' \times 13'' \times 12\frac{1}{4}''$	..	..	..	Weight packed

5. Aerial :—

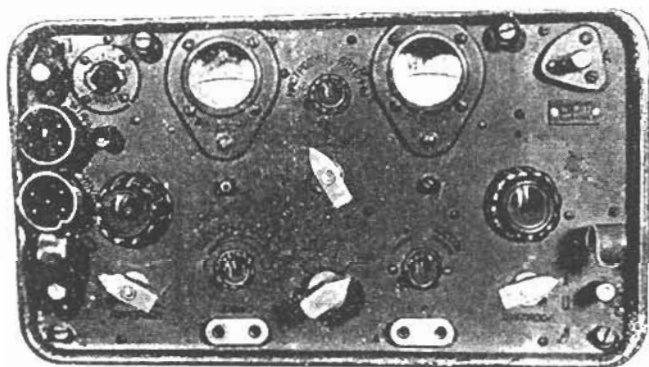
6' rod (6 sections of 1') with star spreaders consisting of five flat metal rods $9\frac{1}{2}''$ long, joined at one end and screwed into the top rod section, or 23' high mast, or 110' wire dipole suspended between two 4' high metal poles.

TRANSMITTER-RECEIVER TYPE RBM, RBM-1
and RBM-5

TRANSMITTER-RECEIVER TYPE RBM, RBM-1 and RBM-5

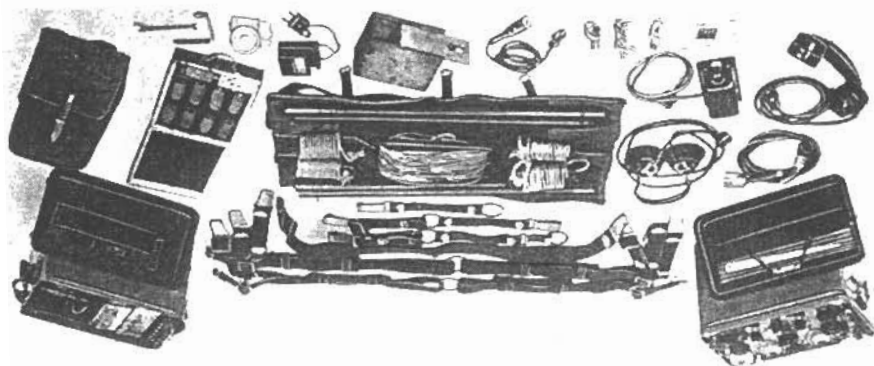


RBM-1

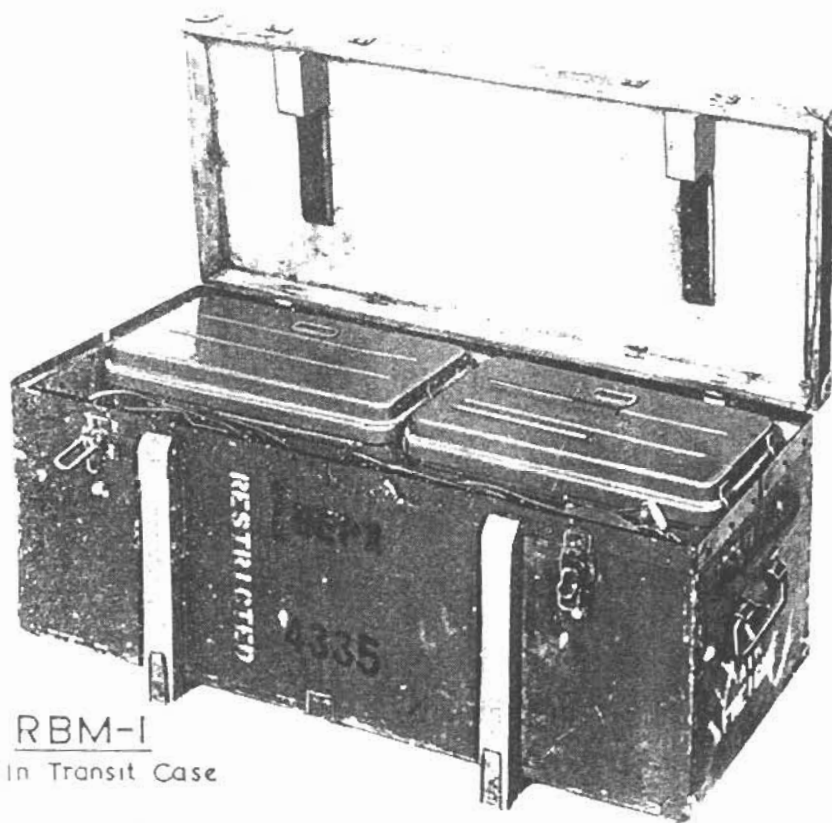


FRONT PANEL OF RBM-5

TRANSMITTER-RECEIVER TYPE RBM, RBM-1 and RBM-5



COMPLETE SET (including accessories and spare parts)



RBM-1
In Transit Case

TRANSMITTER-RECEIVER TYPE A-7, A-7-A, A-7

This wireless set employs frequency modulation. In addition it is one of the few sets which operates in the VHF band, working on either side of the lower limit of this band (27-32 mc/s).

There are several variations in the appearance of the front panel of this series, but the following points for identification are :-

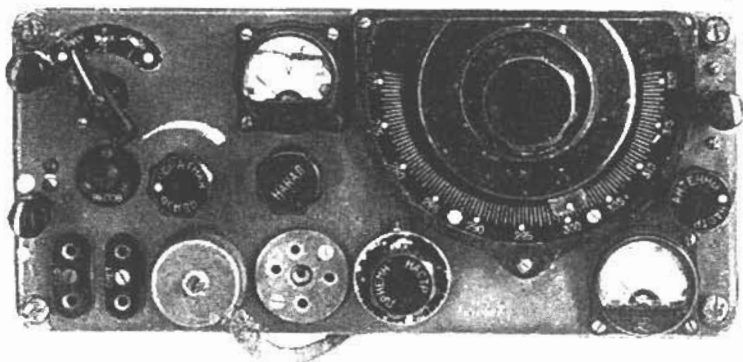
1. Large semi-circular tuning dial.
2. Two terminals on left edge of front panel for connection to a telephone line employed in OPs (maximum range is $1\frac{1}{2}$ miles of field wire).
3. Aerial. 8' rod with spreaders.
4. Complete station carried by one man in wooden carrying case.
5. Used by artillery brigades and rifle regiments and down to units.
6. Physical data.

Size	15 $\frac{1}{2}$ " x 13 $\frac{1}{4}$ " x 7".
Weight	46 lbs.

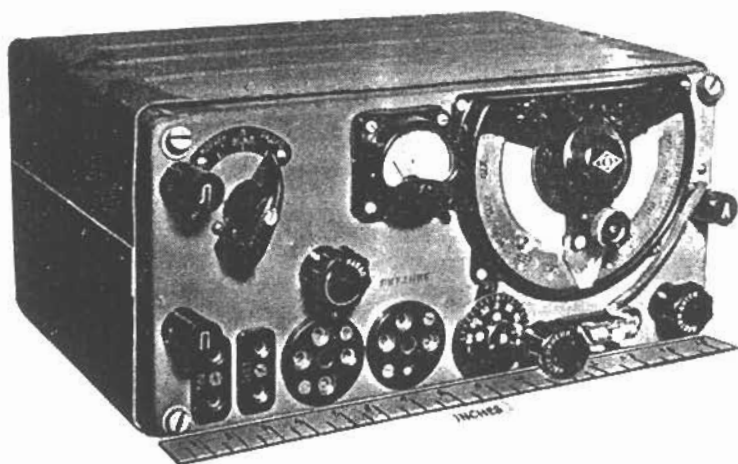
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Wireless and Line

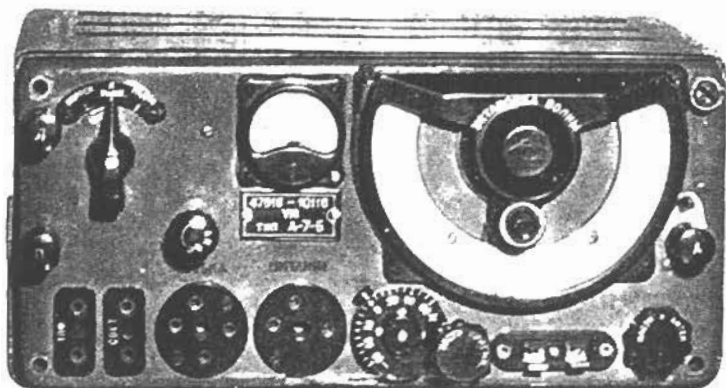
TRANSMITTER-RECEIVER TYPE A-7, A-7-A, A-7-B



FRONT PANEL A-7

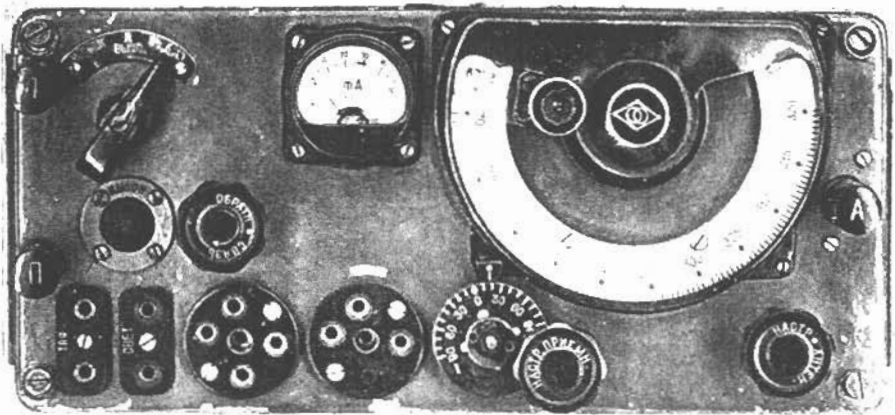


FRONT PANEL A-7-A

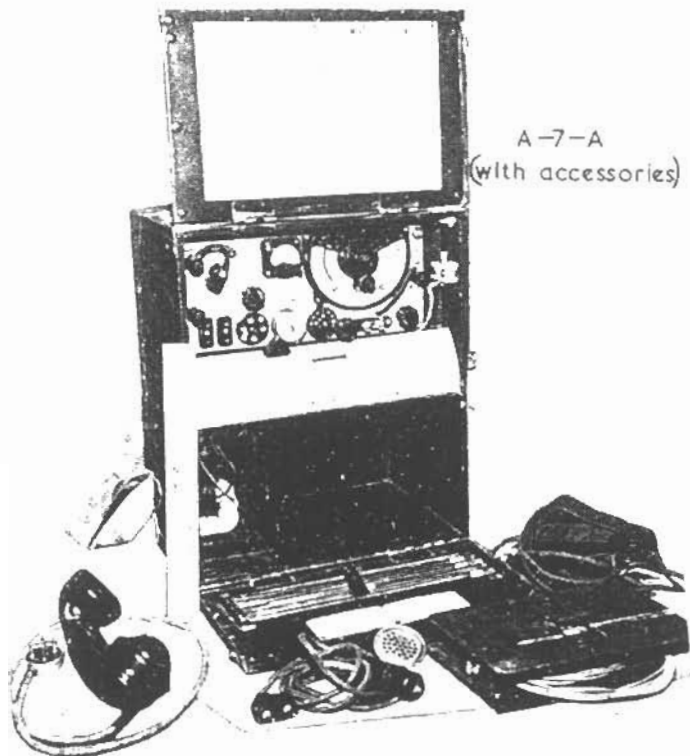


FRONT PANEL A-7-B

TRANSMITTER-RECEIVER TYPE A-7, A-7-A, A-7-B

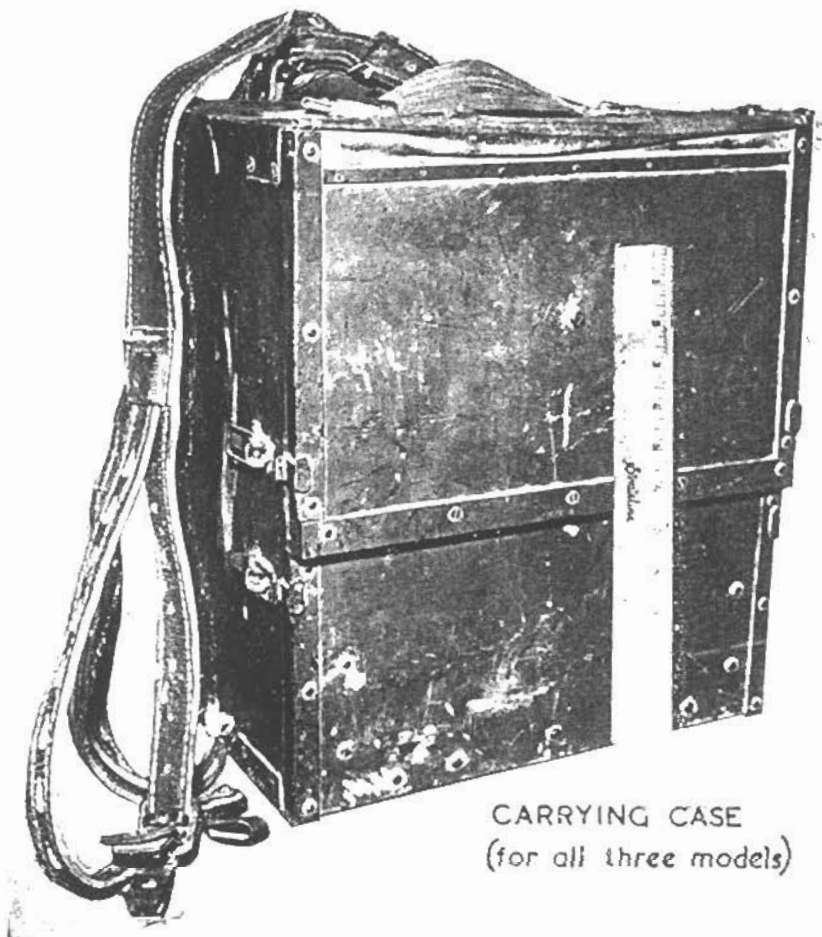


FRONT PANEL OF A-7-A (early model)



A-7-A
(with accessories)

TRANSMITTER-RECEIVER TYPE A-7, A-7-A, A-7-I



CARRYING CASE
(for all three models)

WIRELESS SET RSB, RSB-BIS, RSB-F

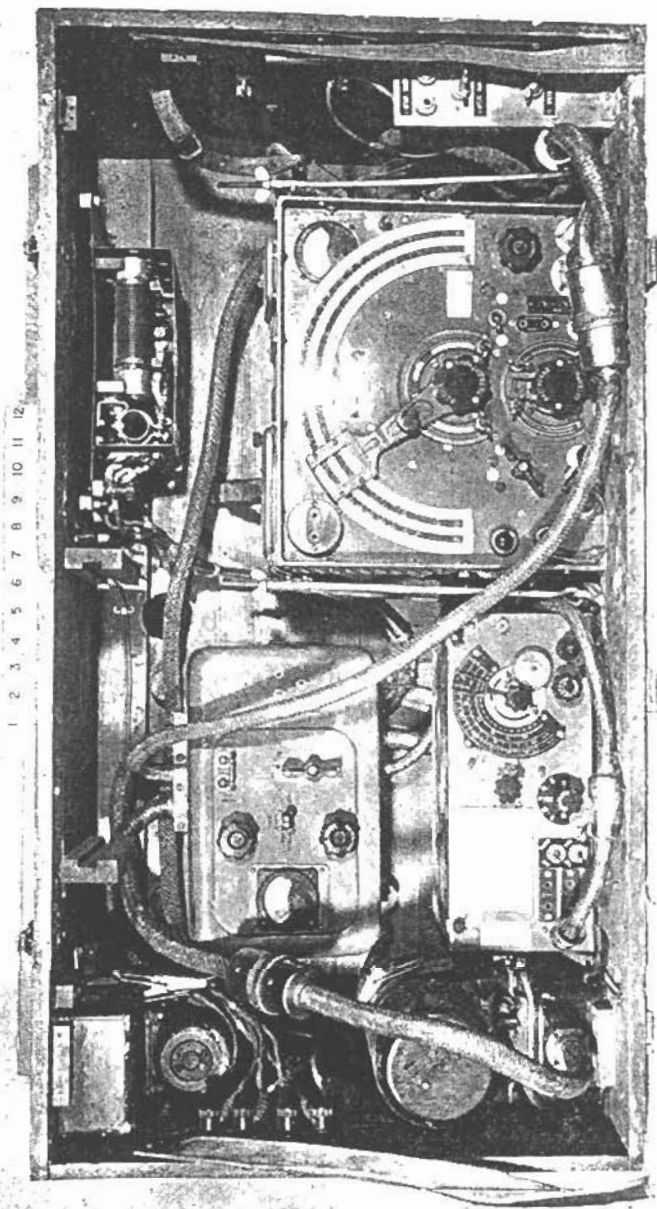
This HF wireless set is used by the Army at Corps and Division as a mobile wireless station. RSB-F may be installed in a GAZ, ZIS-5 or Ford wireless vehicle fitted into a wooden chest. The station includes wireless receiver type US and a power supply equipment.

Points for identification are :—

1. The square transmitter case.
2. Large semi-circular tuning dial.
3. Tilted semi-circular tuning dial of receiver type US.
4. Physical data. Transmitter only.

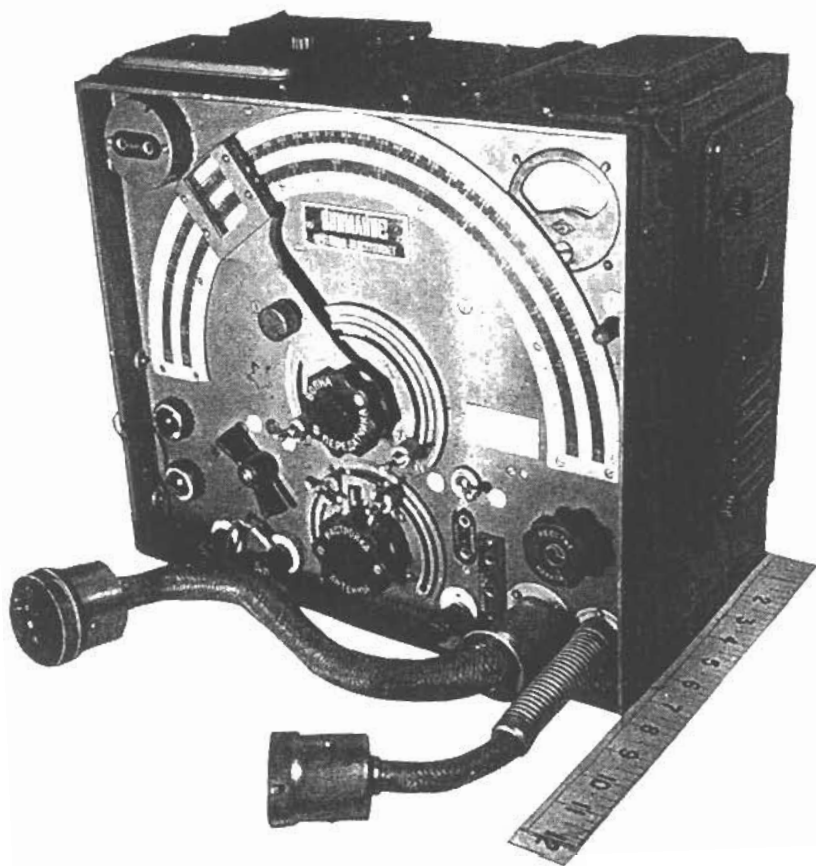
Size	14" × 13" × 8".
Weight	30 lbs.
5. Aerial. 13' rod or 33' mast.

WIRELESS SET RSB, RSB-BIS, RSB-F



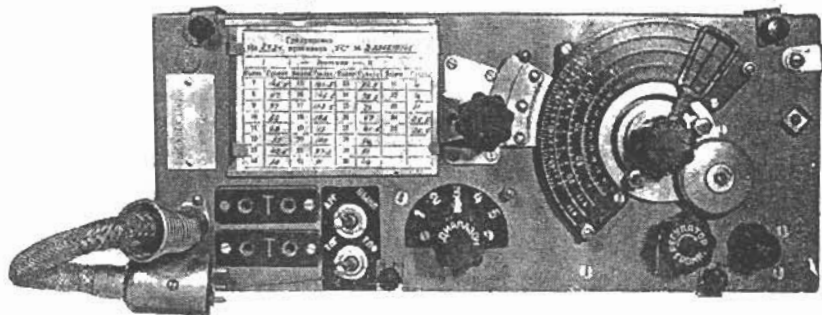
RSB-F
Transmitter-receiver and associated equipment in transit case

WIRELESS SET RSB, RSB-BIS, RSB-F

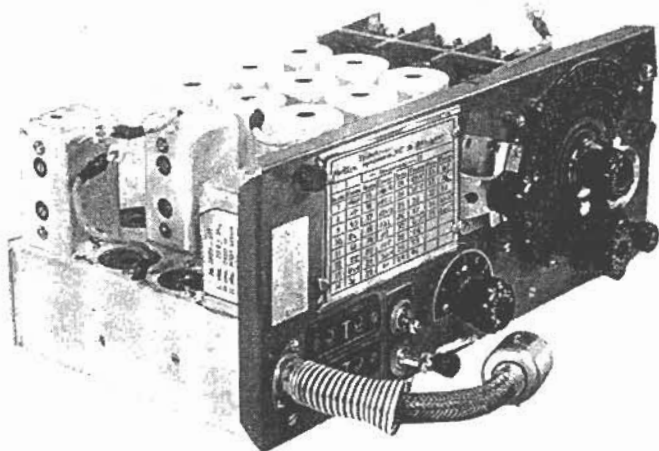


RSB-F TRANSMITTER

WIRELESS SET RSB, RSB-BIS, RSB-F



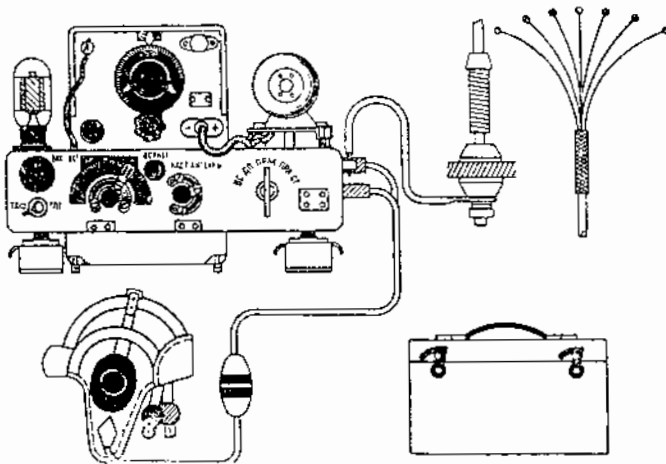
RECEIVER US

RECEIVER US
Removed from its case

WIRELESS SET 9-RS

This HF wireless set is fitted in T 34/85s and T 44 tanks, and light and medium SP gu
The set can be identified by :-

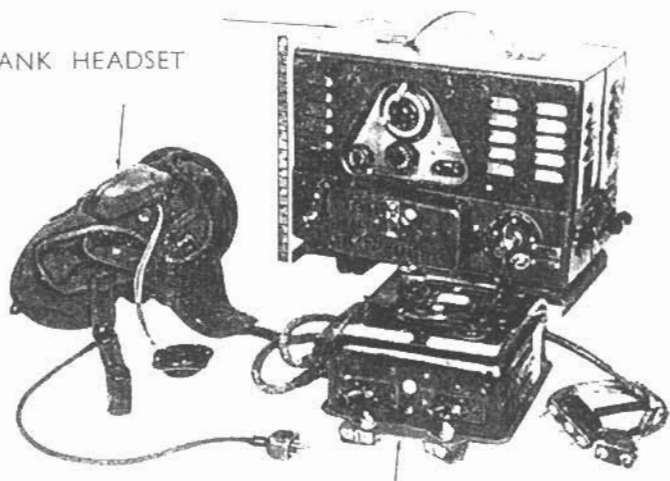
1. The metal ventilated cover with the triangular shaped opening to enable receiver to be tuned.
2. Circular tuning dial.
3. Small hinged cover to protect transmitter controls.
4. The receiver unit has a separate type number and is designated RSI-4T.
5. The rotary transformer mounted at top right.
6. " Whisk " aerial.
7. Physical data. Size 13" x 7" x 8 $\frac{1}{2}$ ".
Weight 27 lbs overall.



SCHEMATIC LAYOUT OF WIRELESS SET 9-RS

WIRELESS SET 9-RS

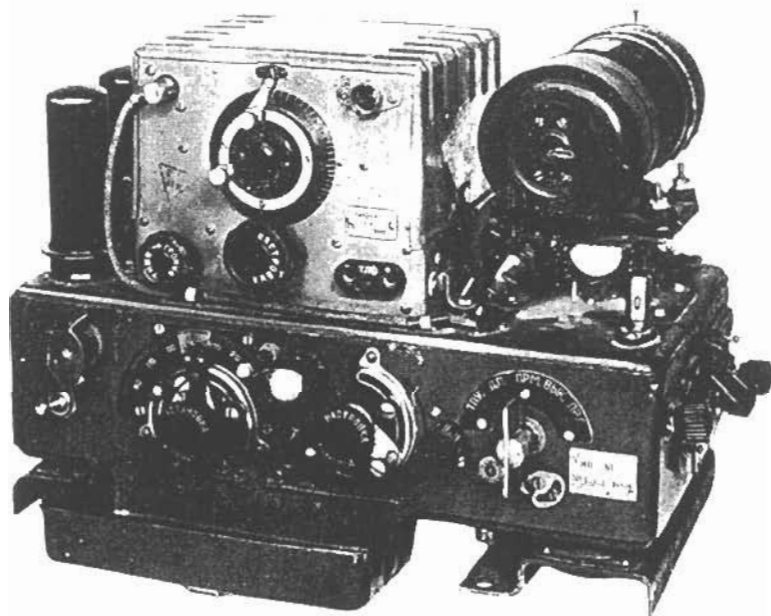
TANK HEADSET



AMPLIFIER

RECEIVER

ROTARY TRANSFORMER



TRANSMITTER RECEIVER 9-RS (with covers removed)

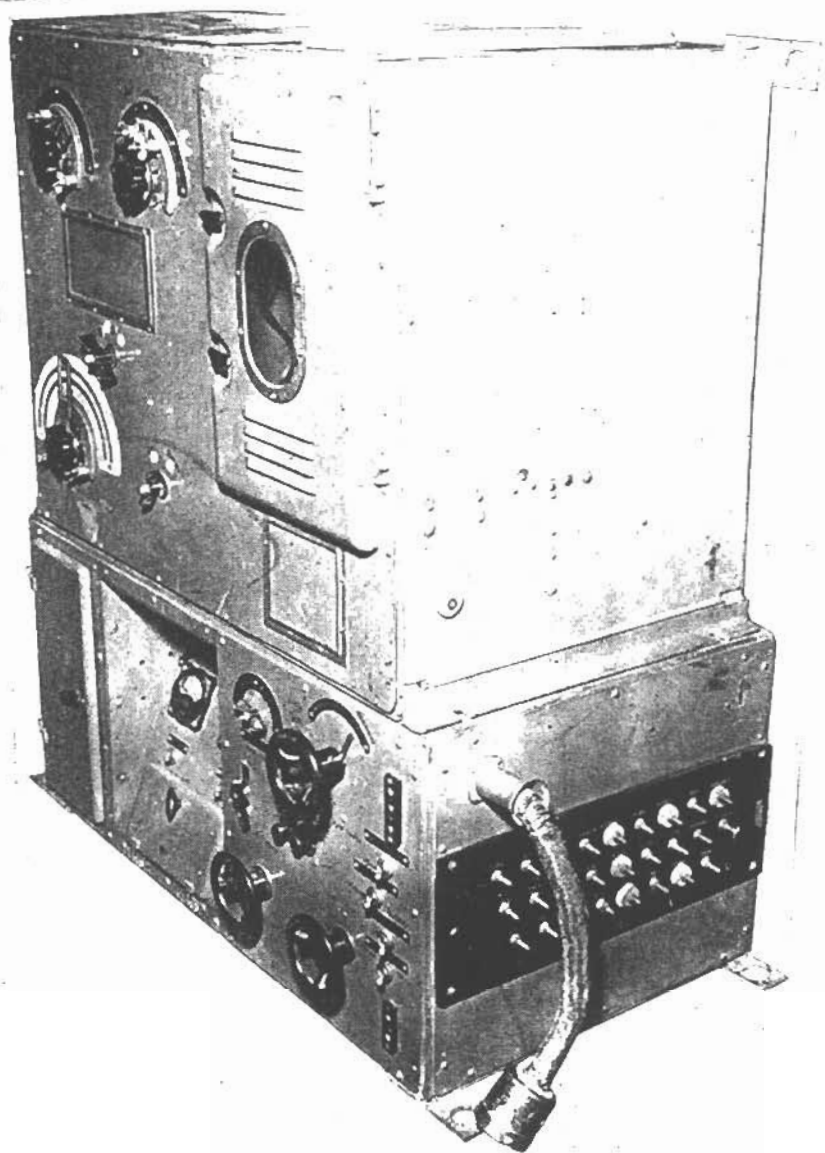
WIRELESS SET TYPE RAF-KV, RAF-KV-3

This wireless set is used at Front and Army and is operated by a crew of nine men. It is installed in a ZIS wireless vehicle. The set comprises transmitter type 500-K-3 and receiver type US.

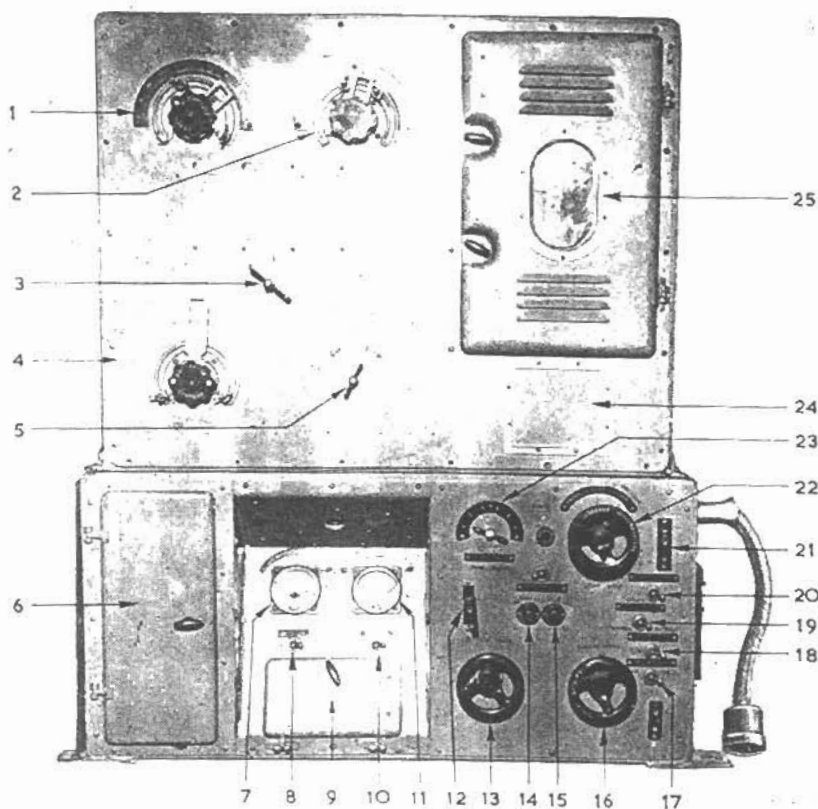
Points for identification :—

1. Door to power amplifier valve compartment—top right.
2. Second door at bottom left to relay compartment.
3. Recessed portion at bottom centre, including hinged cover to fuze compartment.
4. Aerial mast mounted on ZIS vehicle—telescopic, 33 ft high.
5. Receiver type US with slant tuning dial.

WIRELESS SET TYPE RAF-KV, RAF-KV-3



WIRELESS SET TYPE RAF-KV, RAF-KV-3

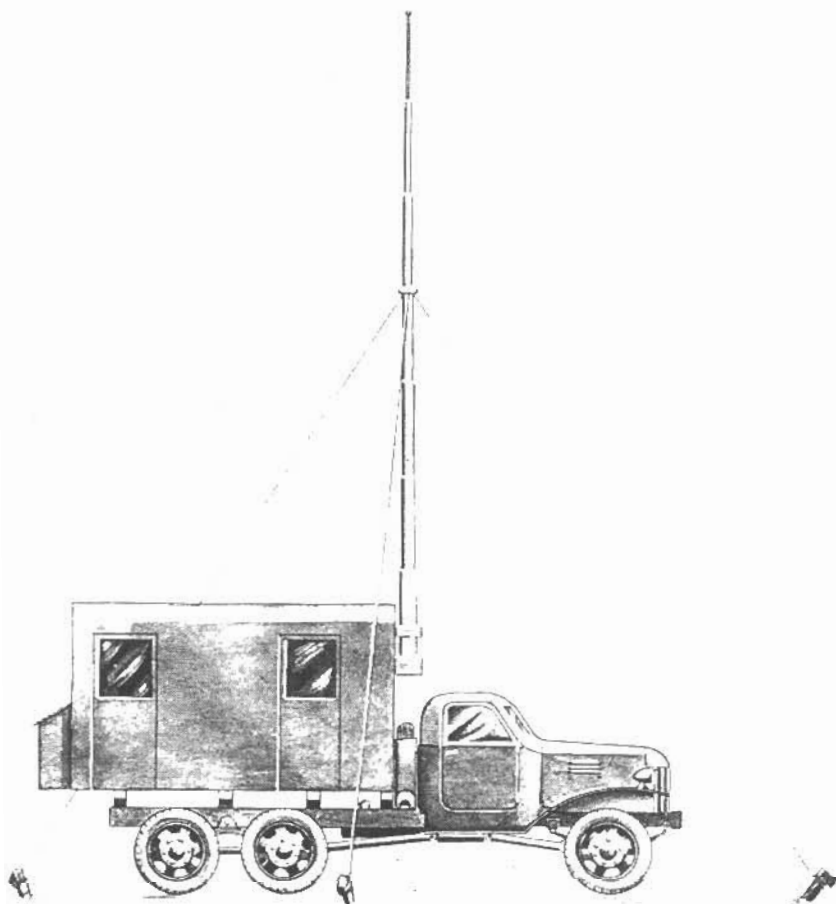


LEGEND

- | | |
|---|---|
| 1. Aerial Coupling. | 13. LT Rheostat. |
| 2. Aerial Tuning. | 14. Generator " On " |
| 3. Waveband Switch (1, 2, 3, 4). | 15. Generator " Off " |
| 4. Power Amplifier Tuning. | 16. HT Rheostat. |
| 5. System Switch (CW-R/T). | 17. Fuze. |
| 6. Door to compartment containing relays. | 18. Control-Transmit Switch. |
| 7. LT Meter. | 19. Generator-Battery Switch. |
| 8. LT Meter Switch. | 20. Power Switch. |
| 9. Door to compartment containing fuzes. | 21. Telegraph Key. |
| 10. HT meter Switch. | 22. Main Switch Send/Receive. |
| 11. HT meter. | 23. Main Shift. |
| 12. Microphone Socket. | 24. Panel with table of power correct |
| | 25. Door to PA valve compart (GKE-500). |

WIRELESS SET TYPE RAF-KV, RAF-KV-3

(Installed in Zis-151)



WIRELESS RECEIVER TYPE KV-M

This is a communications receiver which is sometimes used for monitoring and intercept purposes. Its frequency range is 1,500-27,000 Kc/s in 5 bands. It is a superhet with 5 RF and 4 IF stages, AGC and crystal calibration oscillator.

The set can be identified by the following :—

1. Swivel dial light fitted at top centre of panel.
2. Two clamp handles on either side of panel.
3. Inlaid tuning dial.
4. The set uses 17 valves, type 2K2M.
5. Physical data. Metal case with carrying handles on each end :—

Size	..	..	18" × 15" × 10½".
Weight	..	..	59¼ lbs.

WIRELESS RECEIVER TYPE KV-M



RADIO DIRECTION FINDER TYPE PKV-45

This is a transportable HF direction finder using "Adcock" type aerial. Voice and C.W. reception are provided in the frequency range 1.5 to 16.8 Mc/s in four bands.

Points for recognition are :—

1. Unusual shape of goniometer unit.
2. Swivel dial light fitted at top left of main panel.
3. Reversed tuning dial.
4. Two clamp handles on either side of front panel.

5. Physical data :—

Housing : Receiver and goniometer in a metal case.

Dimensions :—

Receiver and goniometer	.. ..	17 $\frac{1}{4}$ "	×	23 $\frac{3}{4}$ "	×	17 $\frac{3}{4}$ "
Wooden transit case	.. ..	34 $\frac{1}{2}$ "	×	23 $\frac{3}{4}$ "	×	20 $\frac{1}{2}$ "

Weight :—

Receiver and goniometer	.. ..	800 lbs.
Complete station	.. ..	800 lbs.

6. Aerial terminals on top of set.
7. Aerial. 4 Vertical dipoles 29' 7" in length. The active elements are 26' and supported on insulators 2' 6" above ground level.
8. Aerial feeders are connected to the centre points of the masts unlike stations, where the feeders are buried, or covered by earth mats, and connected to the bottom of the masts immediately above the base insulators.

RADIO RELAY STATION TYPE RDS-1 (MODELS A TO E)

This is a mobile radio beam relay station made in Eastern Germany. The principal items forming the station are :—

Decimetric wireless station RVG-902 (Models A-E).

Carrier telephony equipment ME-8.

Carrier telegraphy equipment FT-36.

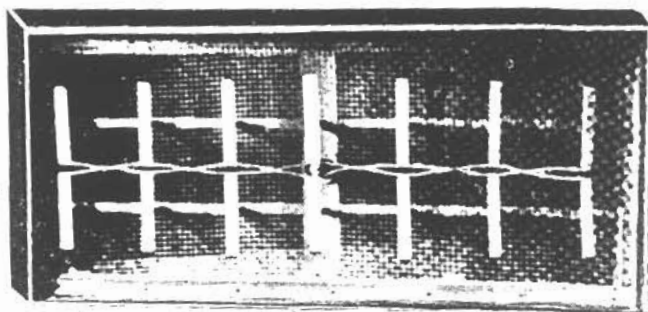
Teleprinters ST-35 (*see* page 35).

Decimetric telephone DT-920 (*see* page 31).

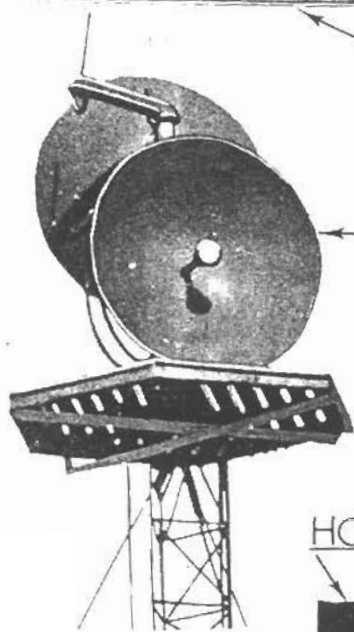
The station can be recognized :—

1. when on the move by the towed aerial trailer, with telescopic mast, and when working by the aerial arrays. (A terminal station will probably have one array, and a relay station two or three.)
2. by the command vehicle, which has box body on Studebaker or ZIS chassis.

RADIO RELAY STATION TYPE RDS-1 (MODELS A TO E)

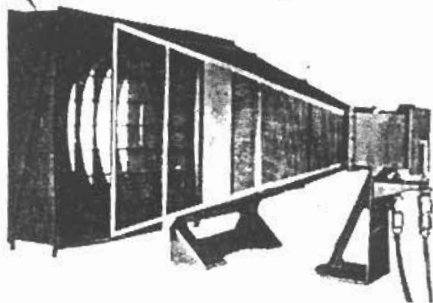


← WIDE BAND DECIMETRIC
DIPOLE ARRAY
(models A to D inclusive)

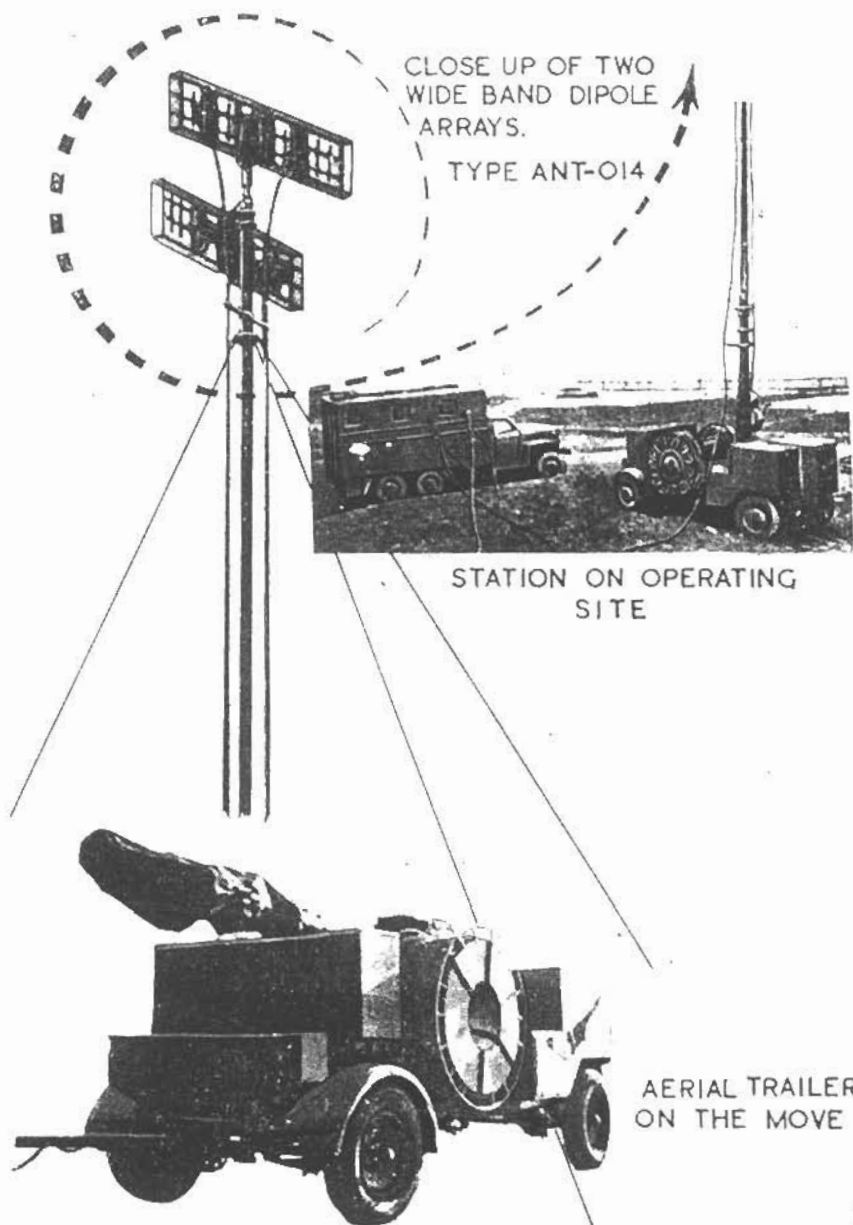


← PARABOLIC
REFLECTORS
(model E)

HORN AND LENS ARRAY
(very rarely used)



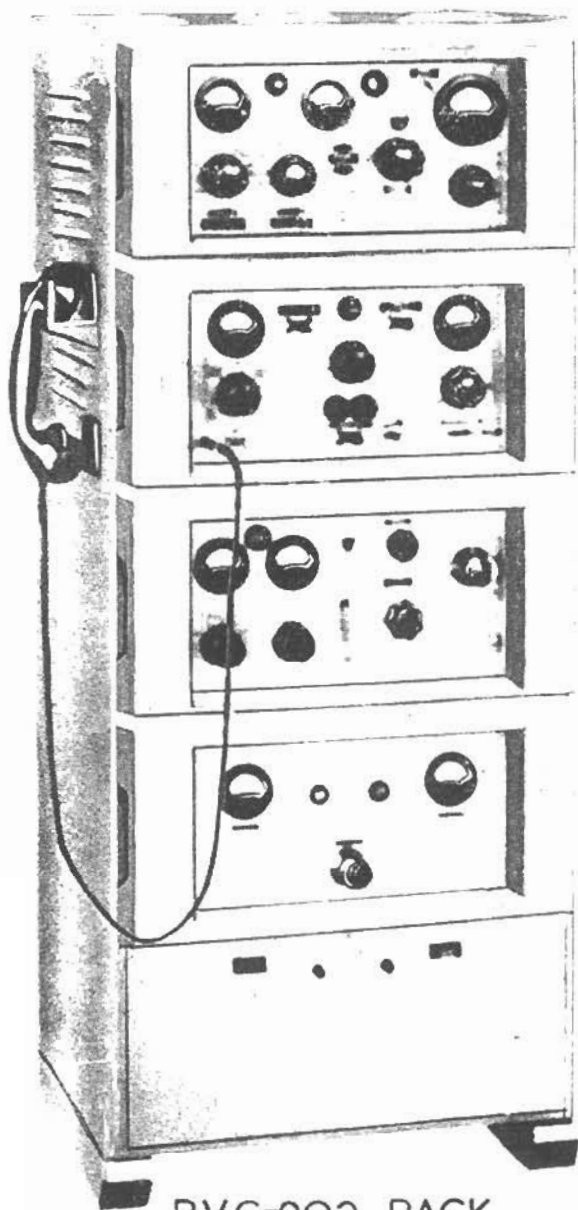
RADIO RELAY STATION TYPE RDS-1 (MODELS A TO E)



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Wireless and Line

RADIO RELAY STATION TYPE RDS-1 (MODELS A TO E)



RVG-902 RACK

DECIMETRIC TELEPHONE TYPE DT-920

This is a small transportable decimetre set manufactured in Eastern Germany. It provides duplex telephony over quasi-optical ranges. There are two models since different frequency bands are used for transmitting and receiving.

	<i>Model A</i>	<i>Model B</i>
Transmitter	488-512 Mc/s.	549-573 Mc/s.
Receiver	549-573 Mc/s.	488-512 Mc/s.

Points for recognition are :—

- Aerial. This is either :—
 - directly connected dipole using front and back hinged door of the set to form a reflector.
 - dipole array connected to the set by cable up to, approx, 200 ft long. This aerial can be mounted on a building tower or mast to obtain maximum height.
- Telephone handset connected to set.
- Physical data :—

Metal waterproof case	13 $\frac{3}{4}$ " \times 14 $\frac{1}{2}$ " \times 8 $\frac{1}{4}$ "
Weight	44 lbs.

DECIMETRIC TELEPHONE TYPE DT-920

