

# Sailor



S.P. RADIO A/S · AALBORG · DENMARK

OPERATING INSTRUCTIONS  
FOR SAILOR PROGRAMME  
1000/B

"SAILOR"

The SAILOR short wave programme 1000/B has been designed to withstand the most extreme conditions experienced in boats. Its compact construction ensures a degree of resistance to sea spray. The printed circuits are coated with a special moisture-repellent lacquer.

The SAILOR short wave programme 1000/B is a flexible system consisting of more than 11 different units which can be combined to fit your requirements. It can be a simple telephone station with an output power of 400W or it can be an automatic telex station with an output power of 1250W. All units fits into SAILOR 19" rack system.

In the design of this transmitter, S. P. Radio have taken into account all the circumstances it will be exposed to in day-to-day operating. However, even a product of this high quality requires regular servicing and maintenance, and we recommend a close observance of the directions contained in the instruction book.

S. P. Radio is one of Europe's leading producers of maritime radio communication equipment - a position which has been maintained by means of constant and extensive product development. We have a world-wide network of dealers with general agencies in fifty countries. All our dealers are well-trained and able to service all SAILOR products.

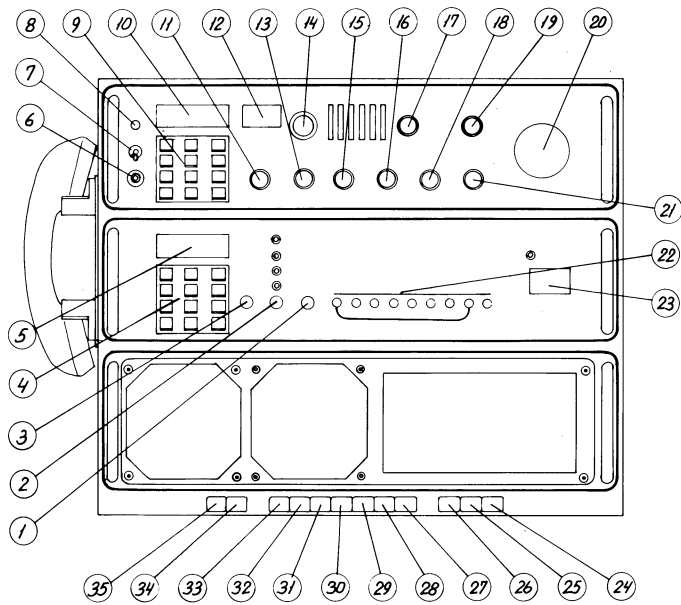
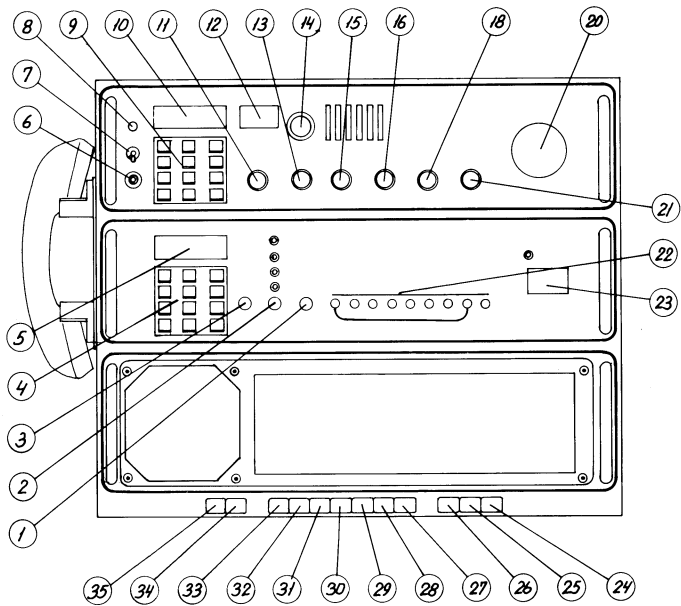
S.P. RADIO A/S

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CONTENTS

	PAGE
CONTENTS .....	3
CONTROLS .....	4
OPERATING INSTRUCTIONS FOR DISTRESS CALL ....	6
OPERATING INSTRUCTIONS FOR DISTRESS CALL WITH MANUEL TUNING .....	7
OPERATING INSTRUCTIONS FOR TELEPHONY-TELEGRAPHY- AND TELEX .....	8
TELEPHONY .....	8
TELEGRAPHY .....	9
TELEX .....	9
FUNCTION TEST .....	10
FREQUENCY TABLES .....	12
NOTES .....	15

CONTROLS



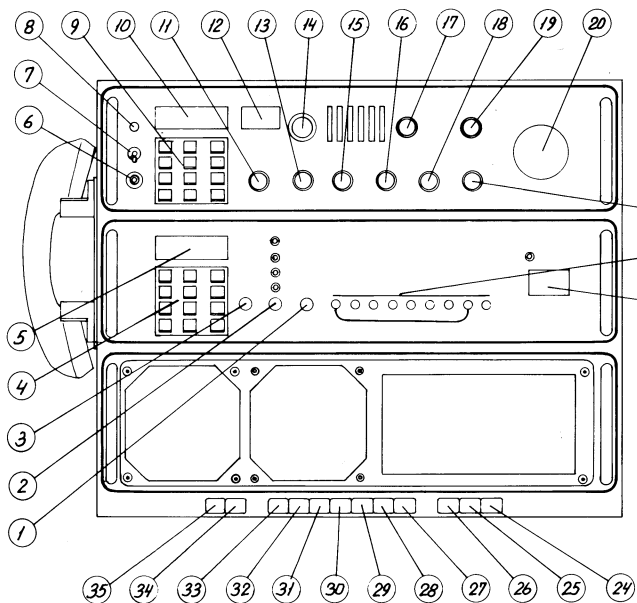
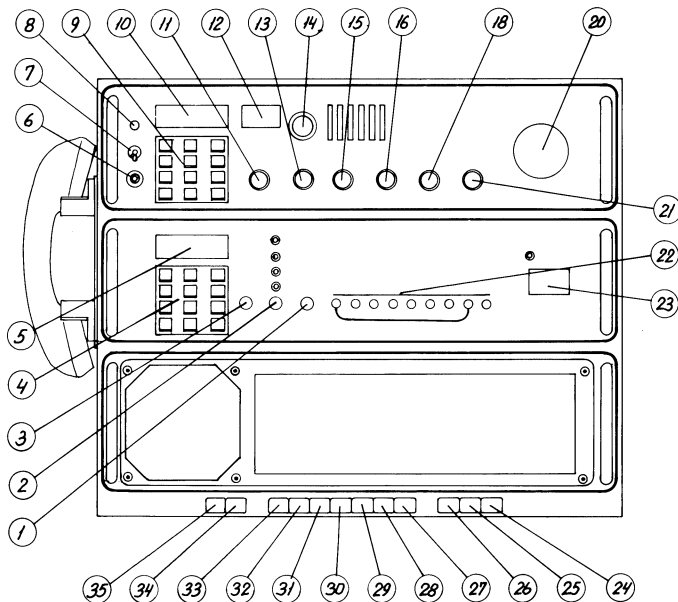
- ① **DIMMER**  
Controls the light intensity from the DISPLAY and the AERIAL CURRENT meter.
- ② **POWER REDUCTION**  
Reduces the output power to less than 60W in four steps.
- ③ **DISTRESS (2182 kHz)**  
Switches between fixed 2182 kHz, external frequency control and frequency control from KEYBOARD ④.
- ④ **KEYBOARD**  
Enters the frequency into the frequency synthesizer. The frequency must be entered in kHz, and only if a fractional kHz is wanted it is necessary to activate the decimal point key. Before a new frequency is entered, and if a wrong figure is keyed, the whole display is cleared by means of the clear key C.
- ⑤ **DISPLAY**  
Displays the keyed figures and finally the actual transmitting frequency.
- ⑥ **HEADPHONES**  
Receptacle for headphones.
- ⑦ **LOUDSPEAKER ON/OFF**  
Switches ON or OFF the loudspeakers.
- ⑧ **NOISE GENERATOR**  
Resets the receiver blocking, disconnects the aerial, and activates the built-in noise generator. To be used together with RF-TUNE ⑭.
- ⑨ **KEYBOARD**  
Enters the frequency into the frequency synthesizer. The frequency must be entered in kHz, and only if a fractional kHz is wanted it is necessary to activate the decimal point key. Before a new frequency is entered and if a wrong figure is keyed the whole display is cleared by means of the clear key C.  
After clearing and keying-in a new frequency, the receiver is blocked. Furthermore the zero key and the decimal point key control the CONTINUOUS TUNING ⑳.
- ⑩ **DISPLAY**  
Displays the keyed figures and finally the actual receiving frequency.
- ⑪ **DIMMER**  
Controls the light intensity from the DISPLAY and the METER.

- ⑫ **METER**  
Shows the field strength of the incoming signal.
- ⑬ **CLARIFIER**  
Provides incremental tuning over a  $\pm 150$  Hz frequency range.
- ⑭ **RF-TUNE**  
Tunes the band filter to the chosen frequency.
- ⑮ **AGC**  
Changes between ON - reception of SSB-AM, TELEX - reception of telex/SSB or OFF - switches off the AGC.
- ⑯ **RF-GAIN**  
Controls the overall RF amplification in the receiver.
- ⑰ **BFO**  
Adjusts the beat note in A1 mode.
- ⑱ **AF-GAIN**  
Controls the AF output and turns the mains on/off.
- ⑲ **FILTER**  
Chooses the wanted bandwidth in A1 and A2 mode and disables the BFO in the AUX. position.
- ⑳ **CONTINUOUS TUNING**  
Is activated by pressing the decimal point key on the KEYBOARD ⑨, and tunes over the full frequency range. The tuning wheel can be disabled by pressing the zero key on the KEYBOARD ⑨.
- ㉑ **MODE SWITCH**  
Switches between reception of fixed 2182 kHz (Distress), A3J - (A3J and A3A), A3H - (A3H and A3), A2 (A2 and A2H) and A1 signals.
- ㉒ **MODE SWITCH EXCITER**  
  
**TEST ALARM**  
Starts the two tone alarm signal generator. The signal can be heard in the microtelephone.  
  
**A3J - SSB**  
**A3A - AM** with reduced carrier  
**A3H - AM** with full carrier  
**A1** unmodulated telegraphy  
**A2H** modulated telegraphy  
**TELEX**  
  
**SEND ALARM**  
Keys the transmitter and transmits the two tone alarm signal when TEST ALARM is activated simultaneously.  
  
**TUNE**  
Starts the automatic tuning system of the transmitter and aerial coupler.

- ㉓ **AERIAL CURRENT**  
Shows the current at the aerial insulator of aerial coupler.
- ㉔ **ON**  
Switches on the complete set.
- ㉕ **RX ONLY**  
Switches on the receiver.
- ㉖ **OFF**  
Switches off the complete set.
- ㉗ **DUMMY LOAD/HEAT**  
When the set is in position ON ㉔ the aerial coupler will be set up as a dummy load and no power will be transmitted from the aerial. The dummy load will only work from 1800 kHz to 1999 kHz and from 2200 kHz to 2399 kHz. The transmitter will be blocked when a frequency between 2000 kHz and 2199 kHz is selected, e.g. 2182 kHz.  
  
When the set is in position RX ONLY ㉕ or ON ㉔ and unkeyed, the aerial coupler will be heated up to get it dried out.
- ㉘ **D.F.**  
Disconnects transmitter aerial from aerial coupler and disables the transmitter.
- ㉙ **GROUND AERIAL**  
Connects transmitter aerial to ground and disables the transmitter.
- ㉚ **ONE AERIAL SIMPLEX NARROW**  
TX keyed: Transmitter connected to transmitter aerial, receiver blocked.  
TX unkeyed: Receiver unblocked and connected to transmitter aerial via aerial coupler. This position gives better sensitivity and better front end selectivity of the receiver. Can only be used when RX and TX frequencies are the same.
- ㉛ **ONE AERIAL SIMPLEX NORMAL**  
TX keyed: Transmitter connected to transmitter aerial, receiver blocked.  
TX unkeyed: Receiver unblocked and connected to transmitter aerial.
- ㉜ **TWO AERIALS SIMPLEX**  
TX keyed: Transmitter connected to transmitter aerial, receiver blocked.  
TX unkeyed: Receiver unblocked and connected to receiver aerial.

continued





## CONTROLS CONT.

### 33 TWO AERIALS DUPLEX

TX keyed: Transmitter connected to transmitter aerial, receiver unblocked and connected to receiver aerial.

TX unkeyed: Receiver unblocked and connected to receiver aerial.

### 34 AUX

Facilitates a make or brake contact for special purposes. Connection terminals are located in the connection box.

### 35 EXT. LOUDSPEAKER

Switches on or off the external loudspeaker(s).

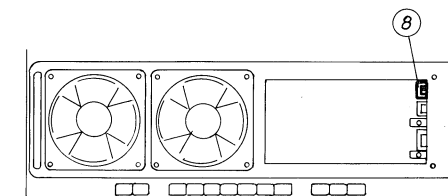
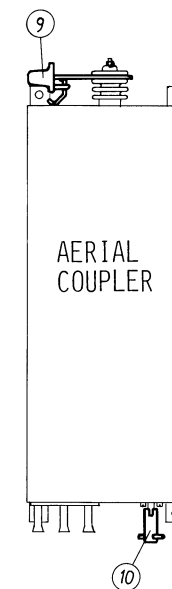
## OPERATING INSTRUCTIONS FOR DISTRESS CALL

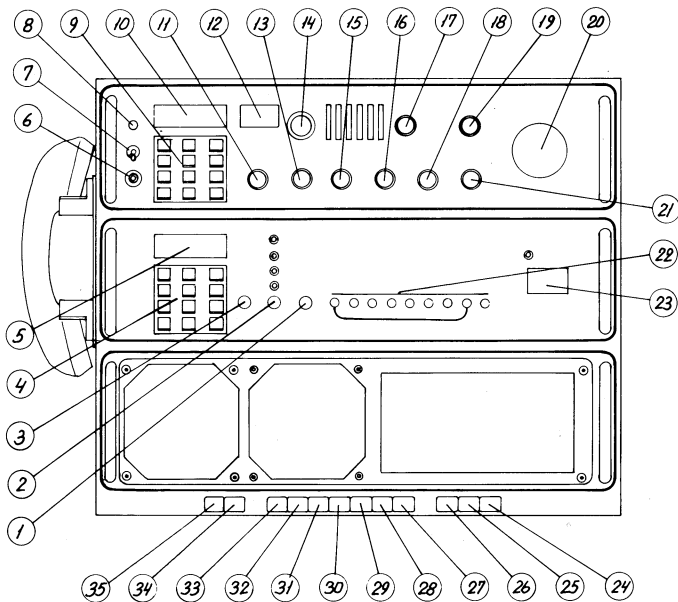
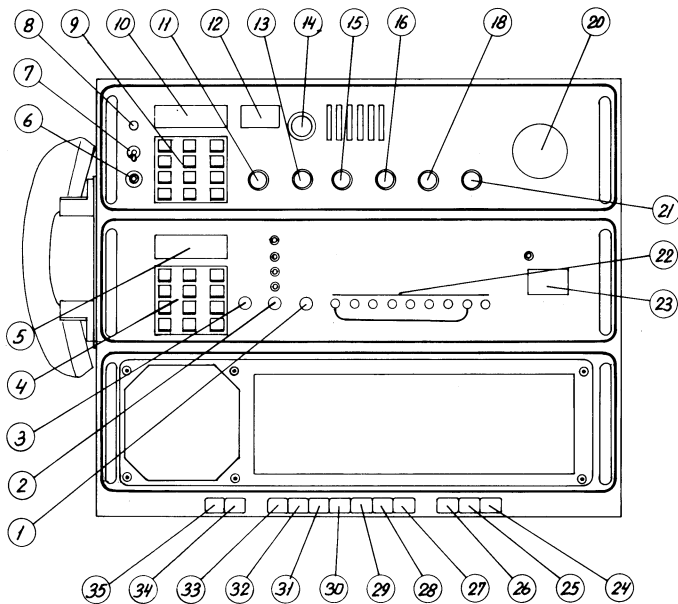
1. Activate the ON 24 button and the one aerial SIMPLEX NARROW 30 button.
2. Turn the RF-GAIN 16 fully clockwise.
3. Turn the MODE SWITCH 21 to pos. Distress 2182 kHz.
4. Turn the AGC SWITCH 15 to pos. ON.
5. Turn the LOUDSPEAKER ON/OFF 7 to pos. ON.
6. Turn the AF-GAIN 18 to suitable volume.
7. Turn the DISTRESS SELECTOR 3 to pos. DISTRESS 2182 kHz.
8. Activate the TUNE 22 button.
9. Activate simultaneously the buttons TEST ALARM and SEND ALARM 22.
10. Take the handset, wait until the alarm signal disappears in the earphone (after 45 secs), then press the key and make your distress call (MAY-DAY - name of ship position etc.).  
If you want to interrupt the transmission of the alarm signal to make a distress call, then press the A3H 22 button, press the key and make your distress call.
11. Release the handset key and listen for an answer.

## OPERATING INSTRUCTIONS FOR DISTRESS CALL WITH MANUAL TUNING

When failure of automatic tuning use the following procedure!

1. Activate the ON 24 button and the one aerial SIMPLEX NARROW 30 button.
2. Turn the RF-GAIN 16 fully clockwise.
3. Turn the MODE SWITCH 21 to pos. DISTRESS 2182 kHz.
4. Turn the AGC SWITCH 15 to pos. ON.
5. Turn the LOUDSPEAKER ON/OFF 7 to pos. ON.
6. Turn the AF-GAIN 18 to suitable volume.
7. Turn the DISTRESS SELECTOR 3 to pos. DISTRESS 2182 kHz.
8. Remove air filter on transmitter.
9. Set the switch on the transmitter (placed in the top right corner) to pos. MAN.
10. Place the TUNING INDICATOR (the fork) on the aerial insulator on the aerial coupler.
11. By means of the tuning wrench tune for max. light in the TUNING INDICATOR.
12. Set the switch on the transmitter (placed in the top right corner) to pos. AUTO.
13. Activate simultaneously the buttons TEST ALARM and SEND ALARM 22.
14. Take the handset, wait until the alarm signal disappears in the earphone, then press the key and make your distress call (MAY-DAY - name of ship position etc.).  
If you want to interrupt the transmission of the alarm signal to make a distress call, then press the A3H 22 button, press the key and make your distress call.
15. Release the handset key and listen for an answer.





## OPERATING INSTRUCTIONS FOR TELEPHONY - TELEGRAPHY - AND TELEX

SAILOR R1120 can receive in the frequency range 10 kHz - 30 MHz.

SAILOR S1303 can be set for any frequency in the ranges 1.6 - 4.299 MHz and the 6-8-12-16-22-25 MHz maritime HF bands.

### TELEPHONY

1. Switch on the station by activating the ON (24) button.
2. Switch loudspeaker ON/OFF (7) to pos. on.
3. Turn the RF-GAIN (16) fully clockwise.
4. Turn the MODE SWITCH (21) to wanted reception mode.
5. Turn AGC SWITCH (15) to pos. ON.
6. Key-in the wanted frequency on the KEYBOARD (9).
7. Set the CLARIFIER (13) to center pos.
8. Press NOISE GENERATOR (8) and tune RF-TUNE (14) for max. METER (12) deflection.
9. Turn the AF-GAIN (18) to suitable volume.
10. If the received signal is an SSB (A3J) signal the CLARIFIER (13) is to be set for max. clearness.
11. If necessary the RF-TUNE (14) can be fine adjusted on the received signal.
12. If the reception of SSB (A3J) signals is disturbed by noise from rigging etc., turn the AGC SWITCH (15) to pos. TELEX and turn the RF-GAIN (16) counter clockwise until the volume just decreases.
13. Turn DISTRESS SWITCH (3) fully counter clockwise.
14. Key-in the wanted frequency on the KEYBOARD (4).
15. Turn POWER SWITCH (2) fully clockwise.
16. Activate the TUNE (22) button and wait until the TUNE lamp switches off.
17. Select transmission mode by activating the MODE (22) button in question.
18. Select simplex or duplex by activating one of the buttons (30) (31) (32) or (33).
19. Key the transmitter by means of the handset key.

### TELEGRAPHY

1. Execute points 1. - 17. incl. as described in section TELEPHONY, except for:
4. Turn the MODE SWITCH (21) to either A2 or A1 mode and select bandwidth by means of the FILTER SWITCH (19).
10. Adjust beat note in A1 mode by means of the BFO (17).
17. Select A1 or A2H by means of the MODE (22) button.
18. Select the desired simplex mode by activating one of the buttons (30) (31) or (32).
19. Key the transmitter by means of the telegraphy key.

### TELEX

1. Execute points 1. - 16. incl. as described in section TELEPHONY, except for:  
 IMPORTANT: The working frequency for Simplex TOR communication is given as assigned frequency (center frequency for the modulation).  
 Set the FREQUENCY SELECTOR on the receiver and exciter to the assigned frequency minus the modulation center frequency. Depending on your Simplex TOR equipment, the modulation center frequency is 1.5 kHz - 1.7 kHz or 1.9 kHz.
- 4a. Telex filter fitted:  
 R1120: Turn the MODE SWITCH (21) to pos. A1 and the FILTER SWITCH (19) to pos. AUX.  
 R1119: Turn the MODE SWITCH (21) to pos. TELEX.
- 4b. Without telex filter:  
 Turn the MODE SWITCH (21) to pos. SSB (A3J).
17. Select telex mode by means of the TELEX (22) button.
18. Select the desired simplex mode by activating one of the buttons (30) (31) and (32).
19. The transmitter and the receiver is now controlled by the Simplex TOR equipment.

FUNCTION TEST

INITIAL SETTINGS

1. Remove the air filter at the front of the transmitter.
2. Set the METER SWITCH in position S (center position) see fig. 1.
3. Set POWER (2) to Full.
4. Press TWO AERIALS DUPLEX (33) push button.
5. Press A3J push button (22) .
6. Set loudspeaker ON/OFF (7) to ON.
7. Set MODE SWITCH (21) to A3J.
8. Turn RF-GAIN (16) fully clockwise.
9. Turn AF-GAIN (18) fully counter clockwise.
10. Set the AGC SWITCH (15) to ON.
11. Make sure that the aerials are connected to the aerial coupler and the receiver.
12. Set MAIN SWITCH to ON (24) .
13. Select the first frequency indicated in the frequency table or use table 1.

Table 1

1	1600.0	2	1911.1	3	2022.2	4	2233.3	5	2444.4
6	2655.5	7	2866.6	8	3177.7	9	3488.8	10	3799.9
11	4100.0	12	6200.0	13	8200.0	14	12300.0	15	16500.0

CHECKS

1. Choose 1611.1 kHz on the FREQUENCY SELECTOR (9) on R1119/20. Press the NOISE GENERATOR (8) and adjust RF-TUNE (14) for max. reading on the METER (12) .
2. Turn AF-GAIN (18) to suitable volume.
3. Check that noise is heard in the loudspeakers.
4. Check that LOUDSPEAKER ON/OFF (7) is functional.
5. Turn RF-GAIN (16) fully counter clockwise.
6. Check that the noise disappears and the METER (12) pointer is turned extremely right.
7. Turn RF-GAIN (16) fully clockwise.

8. Set FREQUENCY SELECTOR (9) to 152.2 - 528.8 - 543.3 - 1577.7 - 1611.1 - 3999.9 - 4464.6 - 6888.8 - 7777.7 - 13666.6 - 15325.5 - 29200.0 - 1111.1 - 2222.2 8888.8 kHz in turn and repeat point 9.
9. Press NOISE GENERATOR (8) and adjust RF-TUNE (24) for max. METER (12) reading. Check meter reading to be approx. 2.
10. **Technical staff only:** Set MODE SWITCH (21) to pos. 2182 kHz and adjust AERIAL TUNE 2182 kHz for max. noise or signal in the loudspeaker or max. METER (12) deflection (the location of the AERIAL TUNE 2182 is shown in the instruction book for R1119/R1120).
11. Press TUNE push button (22) and read meter deflection at the end of tuning sequence. Check that the reading on meter (23) is more than 3. If not, **only technical staff**, perform tuning-up procedure for the transmitter.
12. Select the next frequency (4) indicated in the frequency table or use table 1 and repeat point 11-12.
13. At the highest frequency, select TWO AERIAL SIMPLEX (32) and repeat point 11.
14. Select ONE AERIAL SIMPLEX NORMAL (31) and repeat point 11.
15. Select ONE AERIAL SIMPLEX NARROW (30) and repeat point 11.
16. Select DUMMY LOAD/HEAT (27) and select a frequency (4) between 2200 kHz and 2400 kHz.
17. Press TUNE push button (22) and check meter (23) reading approx. 2.5.
18. Select the same frequency on the receiver and the transmitter.
19. Select TWO AERIALS DUPLEX (33) .
20. Select A3J on mode switches (21) and (22) .
21. Set POWER REDUCTION (2) to low.
22. Press the TUNE push button (22) .
23. Press NOISE GENERATOR (8) and adjust RF-TUNE (14) for max. METER (12) deflection.
24. Key the transmitter and execute a modulation test by listening to your own speech.
25. Press A3A push button (22) .
26. Set FREQUENCY SELECTORS (9) to the frequency 1 kHz below transmitter frequency.

27. Press NOISE GENERATOR (8) and adjust RF-TUNE (14) for max. METER (12) reading.
28. Key the transmitter and check that a 1 kHz beat note is heard in the earphone.
29. Turn the CLARIFIER (13) and check that the beat note frequency varies.
30. Select ONE AERIAL SIMPLEX NORMAL (31) .
31. Key the transmitter and check that the receiver is blocked.
32. Press the TEST ALARM push button (22) and check that the alarm signal appears in the earphone.
33. Set DISTRESS (3) to 2182 kHz.
34. Press TUNE push button (22) BEWARE OF SILENT PERIOD ON DISTRESS FREQUENCY.
35. Repeat point (11).
36. Set METER SWITCH to position I<sub>A</sub> see fig. 1.
37. Mount the air filter at the front of the transmitter.

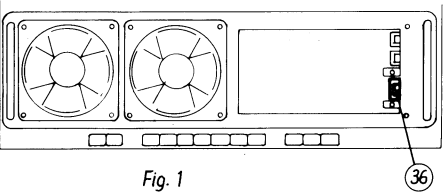


Fig. 1

FREQUENCY TABLE

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

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	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.

STATION	TRANSMITTER		RECEIVER	
	Frq.	No.	Frq.	No.





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