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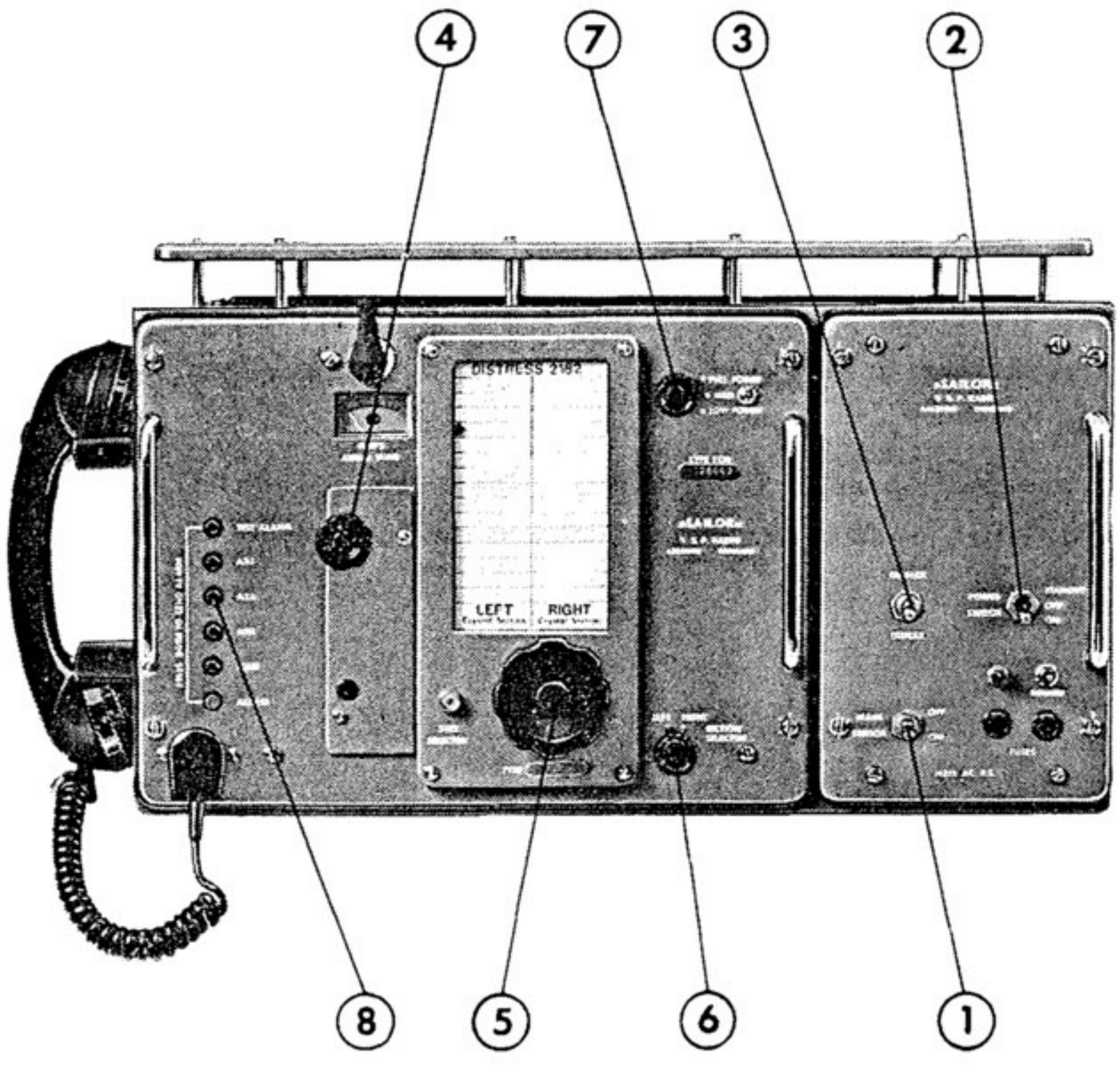
Parts lister

A. Controls

I. Control button locations



1. Main Switch (kun N211) Switch main supply from the equipment
   NB! Must be in position >>ON << , when the receiver is in use

2. Power Switch Switch between functions ON - OFF - STAND-BY.

3. Simplex-Duplex Switch between talk (simplex) and receive (duplex).

4. Aerial Tune Tune to antenna. Knob with push button TUNE impression to the max.
   scale of the instrument to send the front. ?

5. Channel Selector Set to the desired line on the frequency chart.

6. Section Selector Set to the desired vertical column on the frequency chart.

7. Power Reduction Is normally set to FULL.
   Where circumstances warrant it, use the positions MED. or LOW, whereby the transmitter's output power is reduced.

8. Push Button Series to switch between functions
TEST ALARM - AM (SSB) - A3A - A3H (AM) - TUNE - ALARM (distress signal).

II. Telephony

1. Set the POWER SWITCH on STAND-BY (if 110/220V AC, also MAIN SWITCH ON).

2. Using CHANNEL and SECTION SELECTOR select desired frequency.

3. Set the POWER SWITCH ON (but no earlier than 30 sec., after the POWER SWITCH is set to STAND-BY).

4. Check POWER at full

5. Hold down TUNE button and turn the knob AERIAL to max. deflection on the meter.

6. Choose mode by depressing a button A3A, AM or A3H. (AM = SSB**;** A3H = AM).

7. Take the handset out of its bracket. Both of change talk (simplex) and modtale(duplex) started the transmitter when the micro-phone button is pushed.

III. Emergency

1. Set the POWER SWITCH on STAND-BY (if 110/220V AC, also MAIN SWITCH ON).

2. Turn the CHANNEL SELECTOR to the left (pointer on 2182 DISTRESS). 3.

Set the SIMPLEX DUPLEX SWITCH on SIMPLEX

4. Set the POWER SWITCH ON position (but no earlier than 30 sec. , after the POWER SWITCHis set to STAND-BY).

5. Pressing both buttons TEST ALARM and ALARM simultaneously (after 45 sec.interrupted distress signal automatically).

6. Release the buttons TEST ALARM and ALARM by turning TUNE.

7. Take the handset, depress the key on this and make an emergency call (Mayday,mayday, etc.). Auto alarm can be monitored acoustically in micro phone, depress the buttonTEST ALARM (not simultaneously ALARM when the distress signal in such event will be broadcast).

B. Installation

I. Preparation

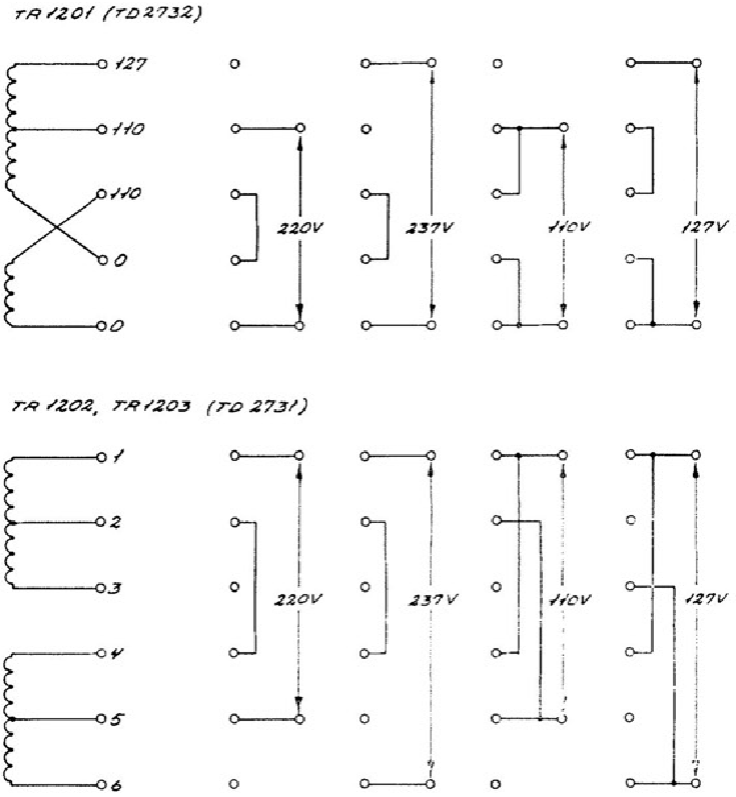
Before installation check that the transmitter supplied with power equivalent to ship AC mains. The power supply is located to the right of the transmitter (transmitter and power supply in the same box). The desired crystals inserted, and the transmitter driver and pi-sect tuned, as described in Section C.

II. Removal of the case.

The transmitter is taken out of the box by removing the 4 clearly marked screws from the transmitter frontplate; then take transmitter out. The connector in the back of the transmitter is removed. The ground wires out of the bottom of the box, and the transmitter out of the box.

III. Transmitter box mounted on the bulkhead
Transmitter box attached to the bulkhead with 4 through bolts through the bottom of the box. Bolt diameter should be at least 1/4" (6mm)

IV. Power Supply
There are available two types of power supplies N210 to 24V DC
N211 to 110/220V AC
N211 can be switched to 110)127/220 or 237V AC.The diagrams below show how



When replacing the power supply, quiescent current in PA stages must be set.
How this is done is described in section G II. PA section.
Electric power supply connected to the transmitter through a single multi cable, which is connected to the power supply at one end, while the other end is provided with a multiple socket, connected to the connector on the transmitter back. The ship's mains connected power at the terminal strip in the power supply.

V. The transmitter assembly with receiver
The transmitter can be grouped with any SAILOR SSB receiver.
Assemble using it to each transmitter associated with building sets.
Manner in which the assembly takes place, seen in Fig. 12 back of the book.
If conditions warrant it, the transmitter and receiver mounted separately. In this case, refer to the recipient's case to the owner's manual for this.
Electrically connected to the receiver and power supply with a multi cable (SAILOR mellemkabel type E181). ATTENTION! The receiver must always be equipped with 24V DC power supply (N164) regardless of voltage.

VI. Antenna

The system should, where circumstances permit, be fitted with separate receive and transmit antennae. For transmit antenna use either a wire antenna with a length of 8-20 m or a whip antenna on the minimum 8.5 m, placed as high and free as possible. Connections should be made by soldering or with sound cable clamp. The antenna should use good insulators at the ends. (Transmit antenna connected to stand-off insulator at the transmitter's front panel). Transmit antenna leading down screens normally, but when conditions warrant it, you can use up to 2 m coaxial cable of good quality (RG213U). (The screen is connected to the screw to the left of the antenna connection on the transmitter's front panel). For receiving antenna applies the same as for the transmitting antenna, except that here allowed antenna lengths whip antenna down to 4 m. Receiving antenna connected to coaxial socket on the back of the receiver. (Remember alignment of this antenna. See manual for benefits). Where the conditions do not allow the installation of two antennas, the receiver can be connected to the transmitting antenna by means of antenna relay AR166 (see Fig. 13).

VII. Ground wire

Ground wire is connected to the terminal in the bottom of the box. As a ground conductor using copper tape with a minimum dimension of 0.5 x 50 mm, as in the iron vessel is fed to the ship's hull and in wooden boats is applied to a least 1 sqm metal plate on the outside of the hull below the waterline. On sailing ships with external ballast keel can ground wire connected to a kelbolt, and the ship's keel may seem like ground. Ground tape must be as short as possible and be taken directly to ground plate, ballast keel or iron hull.

C. Tuning

1. Explanation 1 section terms used Main Channel:

The 16 channel positions on the frequency grid left half (left crystal section) is called the transmitter's main channels. The transmitter's main channels are marked with the letters A-Q inclusive. These letters are printed on the first frequency and the second board at the head of each channel up corresponding tuning equipment (see FIG. 1).

Adjacent Channel:

At the rate the board right half (right crystal section) are an additional 15 channel positions, one for each main channel except channel A (2182).

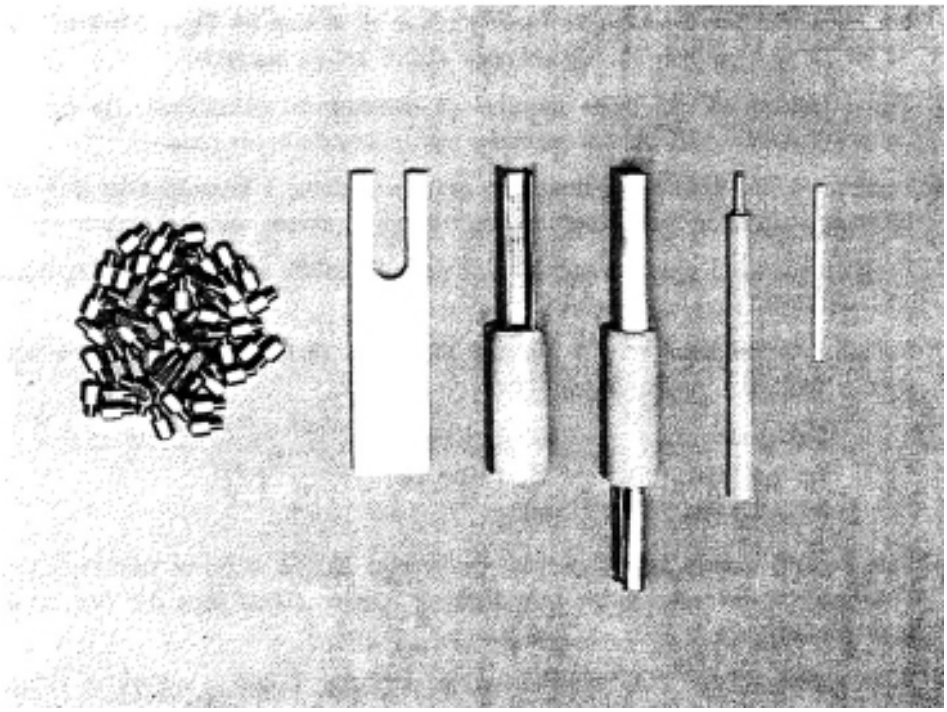
These 15 channels are called adjacent channels. As a main channel and adjacent channel on the same line have shared up tuning facilities, the adjacent channel maximum within ± 15 kHz from the main channel in the area from 1.6 to 2.6 MHz ± 30 kHz in the area from 2.6 to 4.2 MHz.

Insertion of adjacent channels can happen only after the main channel is tuned up, as described in Section C, III. If the main channel is tuned up, install the adjacent channel as described in Section C, V. Since tuning up of adjacent channels is less time consuming than the corresponding procedure for the main channels, it is always an advantage at the insertion of new channels to examine whether there is an available adjacent channel, the main channel is tuned up to a frequency which is max. deviates 15 kHz in the area from 1.6 to 2.6 MHz and 30 kHz in the area from 2.6 to 4.2 MHz (transmission frequency) from the channel that you want inserted.

Transmission Frequency:
Transmission frequency refers to the frequency written on the frequency board.
Crystal frequency:
when the transmitter generator frequency is 600kHz, the crystal frequency is 600kHz higher than transmit frequency

II. Necessary Instruments and tools:

Counter:
Spectrum: Minimum 5 MHz
Sensitivity: Minimum 1 V p.p Accuracy: Better than 1 p.p.m
SAILOR trim set included consists of
Contact screws
1 pcs. Nylon fork for locking button TUNE 3 pcs. trim pin for the contact roller
1 pcs. Combination trim pin and socket for contact screws
1 pcs. Insulated trim key for crystal trimmers and driver tuning
Locking pin (isolated) for SAFETY SWITCH



Ill. Tune up of the main channels

Insertion of crystals and tuning the driver and pi-element may be made on board or in the workshop. If the transmitter is equipped with crystals from the factory, this tuning up is already carried out. In that case go directly to point C, IV.

1. Take the transmitter out of the box, as described in Section B, II.

2. Remove the antenna and set the SAFETY SWITCH, (see fig. 1.) out of action by activating lever and fitting locking pin behind the lever. It is important to remove the antenna.

3. Remove the cover from the crystals on the transmitter right side.

4. Select which literally on the frequency board crystals must have and put the crystal in the holder.
In the oscillator the crystal frequency = transmit frequency plus 600kHz.

5. Write transmit frequency on the frequency board.

6. On the driver board there are 32 jumpers, 2 for each channel.
If the transmit frequency is lower than 2.6MHz these jumpers are considered intact, whereas if the transmit frequency is above 2.6MHz they are removed. Jumper location is shown in Figure 1.

7. Display of the crystals mounted again.

8. Set POWER REDUCTION at FULL POWER.

9. Switch S1002 set to PRE DRIVE (not FINAL DRIVE).

10. The two iron cores in the driver that belongs to the current channel, adjusted with button TUNE, impression to the instrument TEST METER shows maximum reading.
in order to avoid that the transmitter to match the image frequency Fx plus 600 kHz, the iron cores are rotated all the *w*ay down before being rotated slowly to a maximum If there are two maxima, it is the innermost that is correct.
If instrument readings are too high, reduce this with potentiometer, as described in paragraph 11

11. On the transmitter's right side is located 16 pcs. a potentiometer for each channel.
Potentiometer for the current channel adjusted to pointer TEST METER is out of 10 on the right-hand side when TUNE button pressed.

12. Connect the counter to the white terminal on the driver tube chassis socket (see Fig. 1) Depress button A3H and key the transmitter with micro-phone key.

13. Align with the isolated trim stick through the holes in the crystal cover the current crystal trimmer until the counter shows the same frequency as the frequency board.

14. First operation in pi-ledets tune-up is to put S1002 in position ‘I k’ and POWER REDUCTION on LOW POWER

15. set the enclosed metal screws in the holes 16, 17 and 18 transmitter right contact drum, as shown in the table below

Send Frequency	Screws in hole No:.
1.6 to 2.6 MHz	16, 17 and 18
2.6 to 4.2 MHz	None

16. Make contact between the contact drum and contact 13 by pushing the trim stick U-shaped metal end between the switch and the drum (U open part should face the drum).

17. Starting transmitter (position SIMPLEX) and lock button TUNE in appearance position by pressing the included nylon fork between the button's chest and the back plate.

18. asset with the other trim pin switches from 1 to 11 one at a time, until the contact that gives at least translates the TEST METER, is found; leave the trim pin in the so found contact.

19. Move the trim pin contact 13 to the contacts 11 through 15, which gives a minimum scale of TEST METER

20. Stop the transmitter and the set screws in the channel selector drum holes. corresponding to the selected channel letters and the above-detected contact numbers.

21. Set POWER REDUCTION in FULL and start the transmitter on the tuned up channel, reading instrument readings at TEST METER and stop the transmitter.
If the values read 50 mA or less (full scale 100 mA), the Pi-led pre-tuned.
If the response is greater than 50 mA, the following process (a) is used. However, if this gives a greater scale reading, continue on to the process (b).
a. Start transmitter (max. 30 sec.) and check with a trim stick.
Instrument readings can be reduced by short-circuiting one of the contacts between the two already found. If so, put a screw in the switch, which gives the smallest instrument reading and trimming is completed.

b. If the screw in contact row 11-15 is in one of the contacts 12, 13, 14 or 15,
it is moved one step down (for example, from 12 to 11).
In contrast, the screw 11, it moves to 15 and the screw in the contact range from 1 to 11 is moved one step up (for example, from 5 to 6). Then, repeat (a). (If it turns out to be difficult to bring Ik within the range 45-50 mA. the tubes quiescent current control. How it is carried out is set out in section G, II).
IV. Setting the antenna vote, LOAD and FINAL DRIVE
(Carry out only the main channels: carried out on board: count is not required.).

1. Place the transmitter so that it hangs in the case, with two hooks at the top rear of the transmitter brought into engagement with the case at the top edge.
Aerial, ground wire and power cable must be installed

2. Set the switch SAFETY SWITCH out of action by activating lever and fitting locking pin (0 2 isolated) behind the arm.

3. Set POWER SWITCH to ON, MAIN SWITCH ON (only in the case of 110-220V AC power supply), S1002 LOAD and POWER REDUCTION in FULL.

4. Remove the plastic cover under the button AERIAL TUNE and set contact screws in position 26 (serial no less than 204,553 27) and 31, if Channel A (2182), to be tuned up, and 29 and 31 for all other channels.

5. Set the transmitter to the desired main channel and eng contact between the contact drum and contact 22 by pushing the trim stick U-shaped metal end between the switch and the drum (U open part should face the drum).

6. Hold down TUNE impression and tune for max. antenna power with slotted screw under
the button AERIAL TUNE, if the channel is 2182, and the button AERIAL TUNE for all other channels. If it is not possible to find the maximum reflected in the variation of AERIAL TUNE (slotted screw), insert a trim stick in contact 30 or trim sticks in both contacts 30 and 32, until max. deflection is achieved,
If it is still not possible to find the maximum scale, is placed in contact screws 30 and 32. and contact screw 29 is moved to the position 28 (not channel A). If it is still not possible to find a maximum, the antenna is either too long or too short. There must be contact screws 30 and 32 when the antenna is switched capacitor (screw 28 and not 29).

If it is not possible to find the maximum scale, place screws 30 and 32 and the screw 29 is removed. If it is still possible to find the maximum scale, also remove the screw 28 (not channel A). If it is still possible to find a maximum, the antenna is either too long or too short. There must be contact screws 30 and 32 when the antenna is switched capacitor. (No screws in 29 or none in 28 and 29).

7. By moving the trim pin contact 22 to one of the switches 19 to 25, both included.
(serial no less than 204,553 19-26), brought the reading of the TEST METER right,
but as close to the 0-line as possible when antenna power is tuned very carefully to the max. and FINAL DRIVE must be checked each time the trim pin in 19-25 both included. (serial no less than 204,55319-26) moved.

8. Set screws in the above-found contact positions, contact the series 19-25, both included.
(Serial No. 204.553 less than 19-26), and none, one or two of the contacts 30 and 32 (always a screw-in contact 31).

9. Set 51002 in position FINAL DRIVE (POWER REDUCTION still on FULL).

10. At the transmitter's right, the 16 potentiometers - one for each main channel.
With button TUNE pressed and antenna power tuned to the max. adjust the potentiometer for the current head channel to pointer TEST METER shows 10 (RHS halt).

11. After the above mentioned points are implemented for all main channels, put S1002 in position TRANSMIT, and transmitter mounted in the box, and all channels tested. Prior to cover the button AERIAL TUNE mounted. adjusted antenna power for channel A2182 faithfully to the max.

V. Refresh mode of adjacent channels
(Can be made in the workshop or on board)
1. Read section C, 1
2. Remove the transmitter from the box, as described in Section C, IV, 1
3. Write the transmit frequency of adjacent channel power on frequency board.
4. Remove the cover of the crystals on the transmitter's right side, insert the crystal
in the current position and replace cover.
5. Set the switch SAFETY SWITCH disengaged by pressing the lever down and insert locking pin (0 2 isolated) down behind the lever.
6. Set S1002 in position PRE DRIVE, depress the button A3H and connect the meter to the white terminal of the driver tube chassis slot (see Figure 1).
7. Key the transmitter with micro-phone button and adjust with the isolated trim stick through the holes in the crystal cover the current crystal trimmer until the counter shows the same frequency as the frequency board.
8. Set S1002 in TRANSMIT, mount the transmitter in the box and test channel D. Test Meter
With the transmitter TEST METER and associated switches TEST SWITCH I (51002) and TEST SWITCH II (S1003) (regarding location see Fig. 2) measured, referring to positions on the S1002. the following.
Position 1:
PRE DRIVE: HF voltage of PA-tubes grid (screen grid voltage is disconnected automatically in that position).
Position 2:
Not used.
Position 3 ‘I k’:
Cathode current in one of the tubes selected PA with 51003. Full scale of 100mA.

Position 4 Load:
HF voltage at the respective PA tube anodes and the control bars are compared in such a way that the tubes loaded correctly when the pointer of the instrument shows 0

Position 5 Final Drive:
HF voltage on the PA tube lattice. The meter shows 10 when the drive is properly adjusted. (TUNE button is pressed).

Position 6 Vg2:
PA tube screen grid voltage and anode voltage to the driver tube. Full scale 500 volts.

Position 7 Va:
PA tube anode voltage. Full scale 1000 Volt.

Position 8 Vg1:
Neg. grid voltage. Full scale 100 volts.

Position 9 + 18V:
Power to Small Signal circuits. Full scale of 20 Volts.

Position 10 Transmit:
The instrument is disconnected, S1002 must always be kept in this position before the transmitter is placed in the box.

E. Aerial meters:
The instrument to send the front. With this meter measured antenna power.

F. Specifications:
Output power to the antenna for all send types is 400 watts PEP.
Permitted supply voltage variations:
24V DC + 20% - 10%
110V AC ± 10%
127VAC ± 10%220V AC ± 10%
237V AC ± 10%

Modulation: 350-2700 Hz with modulation limit.
Channel Number: 31 crystal controlled channels in the range of 1.6 to 4.2 MHz.
Frequency Stability: Short term ± 20 Hz
Long term ± 100 Hz
Emergency tone: 1300 and 2200 Hz. Automatically shut off after 45 seconds.

Power consumption - 24V DC:	Listening (standby) 2.7 A	Speaking 15-20 A
Power consumption - 220V AC:	Listening (standby) 0.4 A	Speaking 2 to 2.5 A
Power consumption - 110V AC:	Listening (standby) 0.8 A	Speaking 4-5 A 11

G. Service

Sending SAILOR T126 is structured in such a way that it is possible to reach virtually all circuits without separating the transmitter.In order to further facilitate the maintenance work the transmitter is made up of modules.

1. Small signal section (Fig. 4)

This part of the transmitter is placed on the transmitter's left side: This section is built up of the following units:

Base PCB:

Section base PCB is mounted directly on the transmitter's left side chassis. Transmitter switch circuit (switching circuitry) are printed on the base board. On the base PCB is mounted transmitter pushbutton switch (S1102) and plug connection see to the bottom PCB placed interchangeable modules.

SSB generator

AF Amplifier

Alarm signal generator:

These three units may each be easily disassembled by removing the (X) labeled screws in Figure 4 When the three modules, which sit on the bottom PCB are dismantled, the lower PCB de-installed in the following way:

1. Fralod? wires on the SAFETY SWITCH (see Fig. 2). (Remove ???)
2. Loosen the screws on the bottom PCB, which are not marked with paint.
3. Gently rock the base PCB out.

II. PA-SECTION

This part is accessible from the rear forward. Where the individual parts are placed from Fig. 6

Replacing the PA tubes:

After replacing the PA tubes and for replacing the power supply, quiescent current in PA tubes always be adjusted as follows: The adjustment must always be made with the full voltage of the ship's power (generator started) or if the adjustment takes place in the workshop, at the nominal supply voltage (26.5V DC or AC 110/127/220/237V). Adjustment procedure is as follows:

1. Turn the 6 potentiometers P601-P606 (see Fig. 1) fully counterclockwise.
2. Set transmitter on a channel without a crystal (if not available, take a crystal out).
3. Set POWER SWITCH ON (and if 110/220V AC power supply MAIN SWITCH ON).
4. Set S1002 on Ik, set S1003 on Ik1 and depress button A3J.

5. Key the transmitter using key on the handset and adjust the cathode flow in tube nr. 1 through potentiometer P601 until TEST METER shows 30 mA (full scale 100 mA).

6. Turn S1003 to Ik2 and adjust Ik2 by means of P602 to 30mA.

7. Repeat the procedure for Ik3, Ik4, Ik5, and Ik6,.

8th If there are new tubes, leave the transmitter with a micro-phone button pressed for 15-30 min. After which readjust the cathode currents as described in items 5, 6 and 7

II. OSCILLATOR, MIXER and CRYSTAL UNIT

Transmitter crystal PCB with associated switches (S201, S202 and S203), crystal oscillator and mixer PCB and switch deck S1001 are combined into one unit. This device, which is arranged at the bottom row to send the right side can be removed as follows:

1. Remove knob SECTION SELECTOR.
2. Remove the crystal cover and remove the 6 screws marked X in Fig. 5.
3. Pull the device so far back that the shaft to the switch SECTION SELECTOR clears the front panel.Then the unit can be swung out without removing wires.

IV. DRIVER UNIT

Transmitter operates PCB and the driver associated switches (S501 and S502) are combined into one unit.This device, which is located at the top on the left on the transmitter side. removed in the following manner:

1. Remove the shaft stopper marked XXX) in Fig. 6 and pull the switch shaft, which has a rectangular cross section, so far back that it clears driver PCB switches.
2. Loosen the 4 screws marked XX) in Fig. 5th Then the device can gently pulled out without loosening any wires.

V. DRIVE LEVEL UNIT

Drive level print and the associated switches (S503 and S504) are combined into one unit.This device is dismantled in the following way:

1. Remove the operating unit, as described in IV.
2. Remove the two screws marked XXX in Fig. 5.
3. Drag the right angle until it snaps free of the two long stays, then back to the long, round switch shaft (S502) clears the front panel.

VI. COIL SECTION

For coil section is the component that sits in the space bounded by the left and right side of the chassis and PA chassis and the intermediate plate (the plate behind the front panel).

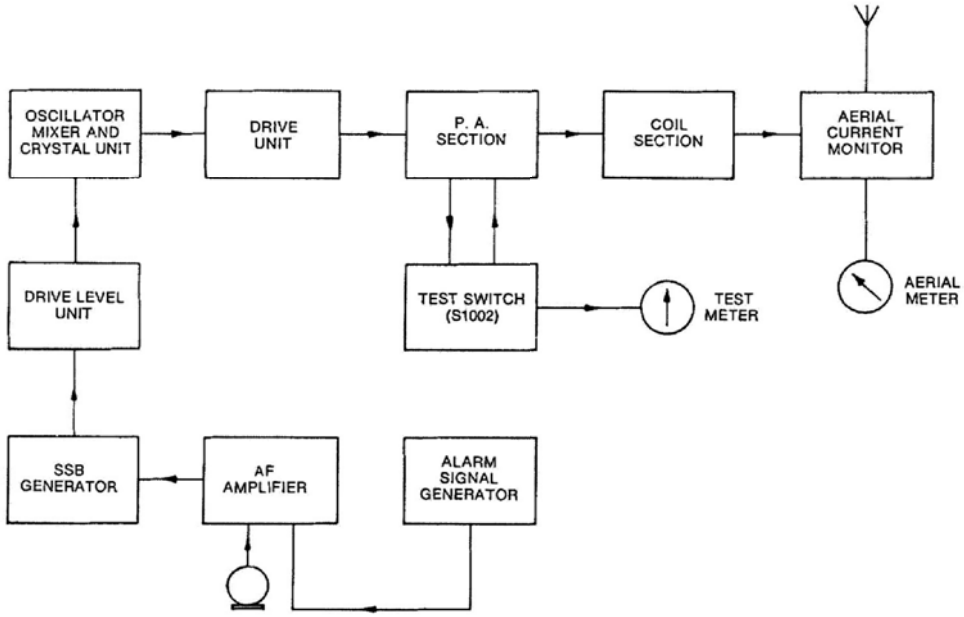
The main components of this section are PA-coils (L701 and L702), antenna coil (L703), capacitors C701-C714, both included. (grouped in a stacked capacitor), antenna capacitor C715 and antenna upstream meter with associated transformer. Also sitting in this section contact drums with the associated patch panels. All components are screwed on the intermediate plate.

Component location shown in Fig. 2 and 3

H. Description of the transmitter circuit

General

SAILOR T126 is fully transistorized in all small-signal circuits. PA-stage and drive stage are equipped with tubes. SAILOR T126 is largely divided into interchangeable functional units, and this feature division will be followed in the description of each circuit. The voltage schedules specified typical voltages on the active elements. All voltages are measured with tube voltmeter with a resistance in the tip of the probe of 47 K ohms. (tube voltmeters are often designed for 1 M ohm in the tip of the probe).



SSB Generator

In this mode the device generates all of the signal types SAILOR T126 is capable of outputting.The unit contains 600 kHz crystal oscillator 600 kHz amplifier, balanced modulator sideband filter (LSB) first SSB amplifier, circuit reintroduction of the carrier wave, the second SSB amplifier and SSB output amplifier.

T305 works with X301 as 600 kHz generator of the type Pierce Colpitts.

T306 amplifies and filters the signal which is fed to the balanced modulator via C327.

The balanced modulator is built around an integrated circuit IC301, which contains 4 diodes. The integrated circuit is also fed from the amplified microphone signal, thereby forming a double-sideband signal. Increasing the carrier suppression, i.e., suppression of the incoming signal 600 kHz, is extremely large and temperature independent because of the uniformity of the 4 diodes in the integrated circuit. The output signal consists only of an upper and a lower sideband of which only the lower side band passes through the crystal filter FL301.

After sideband filter placed SSB signal via FIRST SSB amplifier, equipped with T307, the amplitude control P305 via R352. At the same time placed in position and A3A A3H and to allow emergency calls to a certain carrier wave signal (600 kHz) by the amplitude control R354 P305.

The combined signal is amplified further by SECOND SSB AMPLIFIER T309 and SSB OUTPUT AMPLIFIER T310.

Carrier re-composition is controlled by means of switching diodes, which in turn are placed in-conductive or blocked state by means of DC control voltages.The carrier signal is taken from the 600 kHz crystal oscillator and is passed through the amplitude control voltage to the P301 portion; comprising of R310 and R309. In position A3H leader diode D304, and carrier signal lined with C309 and C310 to the emitter T302. In position A3A leader D305, and carrier signal, which is now taken over R309, fed via C308 and C310 to T302.

In position A3J leader D306 and puts T302's input to ground via C311 and C310 to achieve high carrier suppression.

Operation of the T301 will be described in the section> AUTOMATIC 2182 kHz <.

Audio amplifier - Compressor - Test tone generator

This functional unit processes and generates all of the IAV frequent signals used in the normal operation. Microphone signal is transformed into the TR401 and fed via R410 to the FET transistor, which acts as an electronically controlled resistor (attenuator). How much attenuation is achieved with R410 and T401 are determined by the voltage on the gate of FET transistor T401. T401 is biased to the closed position with 5.1 V of zener diode D401 without control voltage applied to the gate. Under these conditions, there is no attenuation. With a control voltage of 5.1 V applied to the gate maximum attenuation is achieved.

The electronically controlled attenuator is used to keep the voltage of FET transistor constant independent of speech strength and thus a compressor.The previously mentioned control voltage is formed from the signal of the FET transistor T401 after amplification of T403 and T404. The signal out of R418 and fed to the level of the detector system, consisting of T411, D403 and D404.

As soon as the voltage applied to the base of T411 becomes sufficiently low (approximately 4.7 V), there is no collector current in transistor T411 due to the fact that it is normally biased in the forward direction of diode D403 is blocked. This means that the transistor T410, which is normally in saturation due to the collector current in T411, is closed, which leads to the saturation of the T405, with the result that the capacitor C424 is charged very quickly. C424 slowly discharge through R437 and filter circuit R412 and C410 and applied gate of the previously mentioned FET transistor T401 via R413. Because of the attenuation control voltage will rise until there begins to flow in the collector, T411, and an equilibrium state is reached. The amplified and compressed microphone signal is then transmitted via the T412 and T413 to low-frequency filter that removes signals that are irrelevant for understanding. LF signal

fed to the fixed voltage divider R424, R425 and R426. LF tensions of this voltage divider adapted to the different signal types. Engagement of the desired level is carried out by means of switching diodes D406, D407 and D408, which is controlled by the same switching voltages as described in the SSB generator.
Test tone generator has a two-tone generator, which contains the frequencies 2400 Hz and 1200 Hz. The multivibrator, comprising of T408 and T409, oscillates at 2400 Hz, and in the integrated circuit IC401 share this frequency to 1200 Hz, which can be observed at pin 8. T407 acts as emitter follower, and 2400 Hz signal is fed from there via the R430 to the output transistor T406.
1200 Hz signal is also fed to T406 via the R429 and mixed hereby with 2400 Hz signal.
This mixed signal is fed to the microphone transformer during the tune-in of the transmitter, and because of the LF filter's presence ensures sinusoidal tones, two-tone generator itself delivers square wave voltages.

ALARM SIGNAL GENERATOR

This function unit aims to be able to modulate the transmitter with the standardized >>Distress << signal. This signal consists of two tones 1300 Hz and 2200 Hz, switching between the time interval at 0.25 sec. The transmission of this signal is stopped automatically after 45 seconds. or manually within this period of time.
Transistor T902 works as a 2200 Hz oscillator and T903 as 1300 Hz oscillator. Switching time between the two tones is determined by T901, which is a unijunction transistor, which sends a switch pulse to the integrated circuit IC901, which works as a FLIP FLOP, so that the output signals at pin 6 and pin 8 change from +6 V to 0V and vice versa each time T901 delivers a switching impulse. In addition is the voltage at pin 6 +6 V when the voltage on pin 8 is 0V, and vice versa. In this manner, switching diode D902 to lead when pin 6 assumes the value 0V, causing the D901 inhibited and only 2200 Hz signal is sent to T904. On the next shift pulse is 1300 Hz signal that is fed to T904. T904 works as a power amplifier and delivers the signal to both MICRO PHONE and AF amplifier.
Start and stop the emergency generator is using of the controlled diode D904 and transistors T905 and T906. After installation is supplied +24 V via the function will T905 in series with R919 and R926 lead, and emergency tone generator starts. T906 works as 45 seconds. the generator, that is to say that, after approx. 45 sec. T906 delivers one trigger impulse to R904, hereby start looking and shorting the base of T905 to ground, and this transistor thereby interrupting the power to the emergency tone generator. This condition persists until the connection to the function is interrupted.
Controlled rectifiers having the property that a short trigger impulse, input gate, will have an anode-cathode distance to search continuously, if the current in the anode-cathode distance is beyond a certain level, the so-called holding current. Interruption of the conduction state can only be made when the current decreases to a value below the holding current.

POWER REDUCTION - DRIVE LEVEL

SAILOR T126's POWER REDUCTION switch has three positions by 4 dB increments. performed as attenuators of L type. This part is completed with DRIVE LEVEL potentiometers P501 to P516. These potentiometers switched in with the switch S504, which is a deck in the CHANNEL SELECTOR.

Power reduction and drive level are deposits between SSB generator and SSB entrance into the console. Power reduction is ineffective in position 2182 DISTRESS.

POWER AMPLIFIER

Power amplifier consists of 6 parallel coupled tetrodes, working in class AB1.
Anode load consists of a balanced pi-coupler. As this tuned pi-part must operate at frequencies from 1.6 MHz-4, 2 MHz, changed voting capabilities and, coils with programmed contacts coupled with CHANNEL SELECTOR. Output capacity in this pi-coupler are sectioned in order to obtain impedance matching with the antenna adjusted to resonance with variometer L703 and possibly C715. Switchimg of the variometer-outlets and the sectional output capacity is controlled also by the programmed contacts.
The replacement of PA tubes and when switching from one power supply to another, PA tubes standing current must be adjusted. How this is done is set out in section G, II.

CRYSTAL. SECTION

Connection of the individual crystal and associated trimmers and capacitor along with the switches S201 and S202, which are mechanically coupled with the CHANNEL SELECTOR.
Switching between main and adjacent channel is carried out by switch S203 SECTION SELECTOR.
In position 2182 DISTRESS, S203 is incapacitated, so that 2182 is broadcast, whatever S203 made.

CRYSTAL OSCILLATOR AND MIXER

This device has two purposes: to generate crystal frequency and partly to mix this with 600 kHz signal to the transmitter frequency. Crystal frequencies are higher in frequency than the signal frequency, in order to output the upper sideband (USB), with 600 kHz signal is a lower sideband (LSB) signal. Transistor T101 acts as PIERCE COLPITTS oscillator. The signal from the base of T101 is shared with output amplifier T103 (emitter) and partly to the base of T102, which changes the DC operating point of T101, the oscillator signal is rectified in the base emitter line of T102. The rectified voltage is amplified in T102 and the operating point of the oscillator is affected by RI05, so as to obtain a constant amplitude of the oscillator signal. The mixer is equipped with an integrated circuit IC101. This integrated circuit is a balanced modulator at the output through the transformer TR102 only emit the sum and difference frequencies of the two input signals. That is to say, 600 kHz, the SSB signal and the signal from the crystal section is suppressed on the end. Since the signal from the crystal section is in the range 2.2 MHz-4, 8 MHz, it is a great suppression desirable. and fine-tuning with P101 allows this.The range of output aligned with the oscillation circuits that are common with the driver circuit.

SWITCHES AND RELAY CIRCUIT

Channel selector

This switch is operated by the operator when switching from one line to another on the frequency board. In a mechanical coupling (chain drive) is the switch in the coil section, oscillator, mixer and crystal unit, operating unit and operating unit level interconnected, such that when switching from one channel to another is the following:

S201 and S202 switches to two new crystal positions.

S1001 and S1102 switches the set to DISTRESS in a such a manner that the transmitter is always ready to send A3H, whatever pushbuttons A3J, MA and A3H operated.

S504 switch operating level potentiometer and blocking POWER REDUCTION in the position of the 2182 kHz.

S501 and S502 switches to a new set of coils in the driver section. Right contact drum tune pi-led to the new frequency. Left contact drum adjusts the transmitter to the new Antenna Impedance and changes in position 2182 kHz to the fixed part of the antenna coil.

SECTION SELECTOR (S203)

Switches between main and adjacent channel.

POWER REDUCTION (S503)

See section H.

S1002 and 1003

See Section D: TEST METER.

MAIN SWITCH (S1204)

Only at 110/220V AC power supply. Switch to the ship's power.

When the receiver is used alone, it must be set to ON (AC power supply provides 24V DC to the receiver).

POWER SWITCH

(In the 24V DC power supply S1302 and in the AC power supply S1202).

The switch has the following features:

1. ON position supplies the transmitter with full filament voltage, on STAND-BY reduced filament voltage and OFF no filament voltage.
2. Prevents the transmitter from being entered in positions STAND-BY and OFF.
3. Provides voltage for Small Signal circuits (24V DC) to STAND-BY and ON.

SIMPLEX DUPLEX

(1 24V DC power supply S1303 and 110/220V AC power supply S1203).

The switch has the following features:

1. Switches the connection to the speaker, so this is interrupted in position DUPLEX, while in the other positions are connected, except when the transmitter is keyed.
2. Switch the power to the receiver using RE1203 in AC supply and RE1303 in DC power when the switch is in position SIMPLEX, and the transmitter keyed.

Button row TEST ALARM, A3J, A3A, A3H, TUNE ALARM

This switch is divided into four sections, referred to as A, B, C and D (see general diagram).

Section A:
Protects against unwanted deployment of emergency tone signal.

Section B:
Ensures that the transmitter can not be typed with micro-phone key or button TUNE when TEST ALARM is activated. Switches the LF input to the AF amplifier, so that, when the TEST alarm and ALARM are pressed at the same time, make the LF from emergency tone generator when TUNE button is depressed will send LF from two-tone generator, and when the AM, A3A or A3H depressed is given LF from the micro-phone.

Section C:
Furthest switch to the left in the diagram switch with corresponding contacts in the section D, the telephone handset, so that the receive audio from emergency tone generator. when the button TEST ALARM is activated.
Switch the control voltage for the SSB generator in such a way that the transmitter sends A3J when one of the buttons or TUNE A3J activated A3A when the button is activated, and A3H when one of the buttons A3H or alarm is activated.
For automatic selection of A3H in position DISTRESS on the frequency board see auto 2182 DISTRESS end of this section.

Section D:
Set a start criterion for the transmitter so that when one of the buttons A3J, A3A or A3H impression is typed with micro-phone key while when either button TUNE or both buttons TEST ALARM and ALARM is pressed dialed automatically. In post 2182 shorted the two wires, labeled 'fashion interlock over-ride "of S1001, and the transmitter can be entered with micro-phone key when no buttons are pressed.
For switch the far left of the chart, please refer to Section C.
Automatic 2182 kHz distress (see main diagram):
When CHANNEL SELECTOR is set to DISTRESS 2182 kHz. going internal transitions, which means that the transmitter can be operated without any settings.

Transistor T301 in SSB GENERATOR is in normal operation, constantly leading and sends +18 V out for the control voltages for switching diodes in the SSB GENERATOR and AUDIO AMPLIFIER.When CHANNEL SELECTOR is set to the 2182nd supplied from T301 + I8V through diode D303 and T301 block. Through the diode D302 is supplied SSB GENERATOR and AUDIO AMPLIFIER control voltage, so that they are in the position A3H. regardless of how the push-button panel is operated.The programmed contacts activates a fixed variometer, so that the antenna voting button is inactive. In position 2182 is POWER REDUCTION (5503) incapacitated. so that the transmitter always sends full power, also switch SECTION SELECTOR (S203) put out of action.

Power Supplies for T126

For 24V DC operation N210

For 110/220V AC operation N211

Plug for receiver and external relay is located behind the unit.

N210, 24V DC converter:

N210 provides SAILOR T126 with anode voltage, screen grid voltage, negative grid voltage and +18 V for Small Signal circuits.

N210 is constructed of two identical DC converters, each of which supplies half the anodes voltage, screen grid voltage and negative grid voltage , but full voltage to + 18V regulator.

The advantage of this form of coupling is that the transmitter will be able to work even if one converter stops (with reduced power output).

Description of the converter circuit:

When the transmitter keyed, the relays RE1303, RE1302 and RE1301 immediately connect, while relay RE1304 will conclude with a lag. In this interval converter transistors will be provided with basic power and converters will start working. Feedback from The output will be provided via a resistor and driver transformer TR1303, TR1304. Limiting against voltage between the base and emitter of the converter is provided by means of diodes D1304. D1305, D1306 and D1307. Tensions are built up in parallel and series connection of rectifier circuits. RE1303 relay and switch S1303 provides connection to the receiver, depending on whether selected SIMPLEX or DUPLEX.

N211, AC power supply:

N211 provides SAILOR T126 with anode voltage, screen grid voltage, negative grid voltage, +18 V to small signal circuits and 24V DC for electric voltage for the tubes in the T126 and 24V DC to the receiver.

Circuit Description of N211:

TR1201 with D1208 and filter components make 24V DC to the receiver and for the filaments of the tubes in T126. With S1202 in the ON position TR1202 and TR1203 are connected to the ship's power, and the different voltages are present.When the transmitter is keyed, relay RE1203, RE1202 and RE1201 operate. RE1201 and RE1202 sending screen grid voltage and +18 V for T126. RE1203 relay and switch S1203 provides connection to the receiver, depending on whether selected SIMPLEX or DUPLEX.