

Sailor

Programme 1000

World wide communication



Sailor

SSB
Short-wave
Programme 1000



S.P. RADIO A/S · AALBORG · DENMARK

Sailor short-wave programme 1000

Introduction

SAILOR short wave equipment is manufactured and produced in Europe's leading factory dealing in maritime radiotelephones, the annual output exceeding 20,000 sets. The S.P. RADIO network of dealers and service depots is world wide. Years of experience with radiotelephone equipment, working under the worst conditions imaginable, from the African rivers to the harsh environments of the Arctic etc., have enabled S.P. RADIO to construct a radio set which not only complies with the technical test specifications of the authorities, but equally as important, meets the requirements of the user in every respect.

The set excels in the following fields: -

FLEXIBILITY

SAILOR short wave programme 1000 consists of a large number of receivers, exciters, transmitters and power supplies, which by means of SAILOR 19" rack system can be combined in any number of ways.

This means that radiostations can be built-up from the most simple short wave station to the largest and most demanding main station, which fulfils all national requirements from authorities and IMCO's requirements for SAFETY OF LIFE AT SEA (SOLAS).

LONG RANGE COVERAGE

The transmitter has an output of 800 watts PEP together with a very efficient modulation system. Furthermore, the transmitter aerial can be sited at the best location on the ship. These qualities ensure maximum radiated power and consequently maximum range.

The specially designed front end selectivity system of the receiver, provides not only for exceptionally large signal capability, but also offers the opportunity for matching into the aerial conditions prevalent on board the ship. This front end system, combined with the large dynamic range of the receiver and other features, ensures noiseless reception even in the difficult environment on board ships. In other words, long distance reception is ensured.

KEYBOARD

The receivers R1119 and R1120 are equipped with keyboard for keying in the receiver frequencies which gives a quick and safe operation.

If the required receiver frequency is unknown, manual search over the frequency band is possible.

SIMPLE OPERATION

As both receiver and transmitter have automatic band selection, the operation of the set is very simple.

For both receiver and transmitter this occurs when changing frequency: -

Select frequency, tune aerial. - It couldn't be more simple.

SIMPLE FITTING OF NEW TRANSMIT CHANNELS

Normally the fitting of new transmit channels in a short wave station takes place with the replacement or programming of a so called PROM. This calls for expensive specialist work, requiring advanced electronic equipment available at only a few places. This means the return of the equipment and the waiting time etc.

This problem is solved with SAILOR's new programming system in the S1300 (patented).

Programming can be carried out on board by a person of average skill merely by cutting a code in a programming strip. Extra programming strips, tools for cutting, and details of the programming procedure are in the instruction manual enclosed with every set.

LOW POWER CONSUMPTION

In spite of the very large power output of the set, 800 watts PEP the power consumption is modest.

The power consumption is only 15-20% higher than a normal 400 watt PEP set.

SIMPLE INSTALLATION

The set is provided with a mounting plate. This plate is mounted first, and all connections except transmitter aerial are made to the easily accessible terminal strips on it.

When the connections have been made, the cabinet is suspended on the mounting plate.

The set can be supplied with a built-in battery charger, all switches and meters required by the authorities being on the front panel.

POSITION OF AERIAL

A traditional short wave set is so constructed, that the output stage and aerial tuning circuit are in one unit with the rest of the set.

In order to function satisfactorily, such a set must be placed not further than 2-3 m from the base point of the aerial (the aerial feed-through in the deck). This is often far from practical, so that on installation of a traditional set, one is forced into a compromise solution, which cannot possibly give satisfactory results.

S.P. RADIO has solved these problems in a unique way, as the transmitter T1127 can either be in one unit with the rest of the set (see illustration on front page), or mounted in its own cabinet at the base point of the aerial (see illustration on next page). If this separate mounting method is used, the remote control unit H1200 is placed on top of the set replacing the transmitter T1127, the set then being operated in the normal way by the operator.

This flexibility has made it possible to make either traditional installations, or, when these are impractical, to place the aerial and transmitter up to 200 m away from the operating point.

The SAILOR remote control principle (patent pending) has made »impossible« installations possible.

COMPACT, PROFESSIONAL CONSTRUCTION

By using our newly developed SAILOR 19" rack system, we have succeeded in making the set exceptionally compact in spite of the large power output.

The drawers of the rack system are so designed that service operations are possible without the requirement of extension cables or the like.

TELEX

S.P. Radio has realized the possibilities in telex connection to ships and therefore all units in SAILOR short wave programme 1000 are constructed so that it is possible to have a telex connection on one frequency in ARQ-mode.

All units are designed for easy connection to SIMPLEX TOR and MARITEX.

... optimum positioning of aerial always possible

Remote control of transmitter T1127

T1127



Transmitter T1127 mounted at the base point of the aerial.

H1200

S1301

R1120

N1400



Short wave station placed at the operator.

The short wave programme consists of the following units:

Receivers: R1119 - R1120

Transmitters: T1127 - T1127L - T1127P - T1127PL

Exciters: S1300 - S1300TT - S1301 - S1301L - S1301P - S1301PL

Power Supplies: N1400 - N1401 - N1405

Battery Charger: N1404

Remote Control Unit: H1200

500 kHz Tuner: H1201

Transmitter Aerial Switch: H1202

Power Supply Change-over Unit: H1203

Automatic Keying Device: H1218

Pre-Selector: H1219

TELEPHONY RECEIVER R1119

SAILOR R1119 is a marine communication receiver intended for reception of A2 - A2H - A3 - A3A - A3H - A3J - F1 - 2.4F4. SAILOR R1119 covers the frequency range 10 kHz - 30 MHz. SAILOR R1119 has keyboard for quick and easy set-up of the receiving frequency.

SAILOR R1119 has manual searching over the entire frequency range by means of a spinning wheel.

SAILOR R1119 has a high contrast LCD display for the frequency read-out.

SAILOR R1119 uses a digital synthesizer for frequency generating with 100 Hz resolution.

SAILOR R1119 is provided with high order tunable RF-filters to ensure good duplex performance.

SAILOR R1119 can be used in conjunction with telex equipment.

SAILOR R1119 has the following frequency stability:

Temperature range 0-40°C: less than ± 25 Hz.

Long time stability: less than ± 25 Hz.

Short time stability: less than ± 5 Hz.

SAILOR R1119 can operate in the temperature range -15°C to +55°C.

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MAIN RECEIVER R1120

SAILOR R1120 has the same data as SAILOR R1119 except for the following points:

SAILOR R1120 is a main receiver which complies with the most strong specification as MPT 1201.

SAILOR R1120 has telegraphy- telex facilities where all special requirements to narrow filters can be fulfilled.

TRANSMITTER T1127

SAILOR T1127 is an SSB transmitter for use in conjunction with the exciters S1300 and S1301.

SAILOR T1127 can over a distance up to 200 metres be remote controlled by H1200. This means that the location for the radio station and aerial can be chosen independently for maximum performance.

SAILOR T1127 has the following output effects:

1,6-4,0 MHz : 400 W PEP

Maritime HF bands: 800 W PEP

SAILOR T1127 can operate in the temperature range -15°C to +55°C.

SAILOR T1127 can be supplied from N1400 (24V DC) or N1401 (AC).

TRANSMITTER T1127L

SAILOR T1127L has same data as SAILOR T1127 except that it is programmed to work together with SAILOR S1301L and 500 hHz tuner H1201.

TRANSMITTER T1127P

SAILOR T1127P has same data as SAILOR T1127 and can in conjunction with SAILOR S1301P and SAILOR H1219 work as an automatic tuned transmitter for at least 15 pretuned frequencies.

TRANSMITTER T1127PL

SAILOR T1127PL has the same facilities as T1127L and T1127P.

TELEPHONY EXCITER S1300

SAILOR S1300 is a telephony exciter for use in conjunction with the transmitter T1127.

SAILOR S1300 can be programmed for 240 channels free selected in the frequency range 1,6-4,0 MHz and in the maritime HF bands 4, 6, 8, 12, 16, 22 and 25 MHz.

SAILOR S1300 channel programming is extremely easy and can be carried out with normal handtools, no instruments are required.

SAILOR S1300 uses a digital synthesizer for frequency generation.

SAILOR S1300 has possibility for the following transmission modes A3J, A3A and A3H.

SAILOR S1300 has the following frequency stability:

Temperature range 0°-40°C: less than ±25 Hz.

Long time stability: less than ±25 Hz.

Short time stability: less than ± 2 Hz.

SAILOR S1300 can operate in the temperature range — 15°C to +55°C.

TELEPHONY EXCITER S1300TT

SAILOR S1300TT has the same data as SAILOR S1300 except for the following points.

SAILOR S1300TT has built-in telex and telegraphy facilities A1 and A2H.

MAIN EXCITER S1301

SAILOR S1301 has the same data as SAILOR S1300 except for the following points:

SAILOR S1301 can by the operator be set for any frequency in the maritime bands from 1,6 to 27,5 MHz.

SAILOR S1301 has built in telex and telegraphy facilities A1 and A2H.

MAIN EXCITER S1301L

SAILOR S1301L has same data as SAILOR S1301 except that it is also programmed to generate frequencies from 400-535 kHz.

MAIN EXCITER S1301P

SAILOR S1301P has same data as SAILOR S1301 and can only work together with T1127P and H1219.

MAIN EXCITER S1301PL

SAILOR S1301PL has the same facilities as S1301P and S1301L.

DC POWER SUPPLY N1400

SAILOR N1400 is for supply from 24V DC.

SAILOR N1400 supplies all the voltages to T1127, S1300/01 and R1119/20.

SAILOR N1400 has built-in loudspeaker.

SAILOR N1400 has on the frontplate a voltmeter to control supply voltage and the output voltages.

Input current (26,5V DC)	MF	HF
	1,6 - 4,0 MHz	4,0 - 27,5 MHz
Receiver only	2,3A	2,3A
Stand by	8,8A	8,8A
On	9,9A	9,9A
Tune (full PEP 2-tone)	45A	60A
SSB Normal Speech	36A	45A
A3H Normal Speech	42A	56A

AC POWER SUPPLY N1401

SAILOR N1401 is for supply from AC mains 110/127/220/237V AC.

SAILOR N1401 supplies all the voltages to T1127, S1300/01 and R1119/20.

SAILOR N1401 has built-in loudspeaker.

SAILOR N1401 has on the frontplate a voltmeter to control supply voltage and the output voltages.

Input current (220V AC)	MF	HF
	1,6 - 4,0 MHz	4,0 - 27,5 MHz
Receiver only	0,25A	0,25A
Stand by	1,2A	1,2A
On	1,4A	1,4A
Tune (full PEP 2-tone)	5,0A	6,5A
SSB Normal Speech	4,2A	5,2A
A3H Normal Speech	4,5A	5,8A

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40 AMP. BATTERY CHARGER N1404

SAILOR N1404 gives automatic charging facilities which ensures that the batteries remain fully charged with a minimum of supervision.

SAILOR N1404 is built-up in SAILOR 19" rack system and mounted under DC power supply N1400.

SAILOR N1404 has on the frontplate a meter for battery voltage and a meter for charge or discharge of the battery.

SAILOR N1404 is in two versions. One for supply from 105-140V AC, 50-60 Hz and one for supply from 205-265 V AC, 50-60 Hz.

AC/DC POWER SUPPLY N1405

SAILOR N1405 is a combined AC and DC power supply for the receivers R1117, R1119 and R1120.

When both AC and DC are present, it takes the supply from AC, if AC disappears it takes with no break the supply from DC (24V battery).

SAILOR N1405 is in two versions, one for supply from AC 110/127V AC 50 - 60 Hz and 24V DC and one for supply from AC 220/237V AC 50 - 60 Hz and 24V DC.

REMOTE CONTROL UNIT H1200

SAILOR H1200 can over a distance up to 200 metres control the transmitter unit T1127.

SAILOR H1200 is mounted on top of SAILOR 19" rack system instead of T1127.

500 kHz TUNER H1201

SAILOR H1201 is an antenna matching circuit for use in conjunction with the transmitter T1127L and T1127PL.

SAILOR H1201 is for use in the frequency range from 400 kHz to 535 kHz.

SAILOR H1201 can in an emergency situation be tuned to any antenna just by setting the controls on the front.

SAILOR H1201 has no influence on the frequency range 1.6-26 MHz.

SAILOR H1201 has built-in dummy load for test of the station in the 400-535 kHz band and the 2 MHz band.

SAILOR H1201 complies with SOLAS and national requirements.

TRANSMITTER AERIAL SWITCH H1202

SAILOR H1202 can be used in conjunction with a main- and reserve transmitter. It is possible to switch the two transmitters between the main- and reserve aerial.

SAILOR H1202 has built-in clock.

POWER SUPPLY CHANGE-OVER UNIT H1203

SAILOR H1203 has to be used when the station is provided with two power supplies N1400 and N1401.

SAILOR H1203 cuts in the AC or DC power supply, whichever is in ON position. If both the AC and the DC power supply are in ON position, H1203 cuts in the AC power supply.

AUTOMATIC KEYING DEVICE H1218

SAILOR H1218 is a microprocessor controlled automatic radiotelegraph alarm keying device.

SAILOR H1218 is programmed to send the radiotelegraph alarm signal and the distress signal followed by e.g. the ship's call signal.

SAILOR H1218 can easily be programmed with the ship's call signal (up to 8 letters or figures).

SAILOR H1218 can test the auto alarm receiver.

PRE-SELECTOR H1219

SAILOR H1219, T1127P and S1301P will together form an automatic tuned transmitter for at least 15 pre-selected frequencies.

SAILOR H1219 can be used together with a scanning receiver and tune the transmitter automatically.

SAILOR H1219 fits into the MARITEX system.

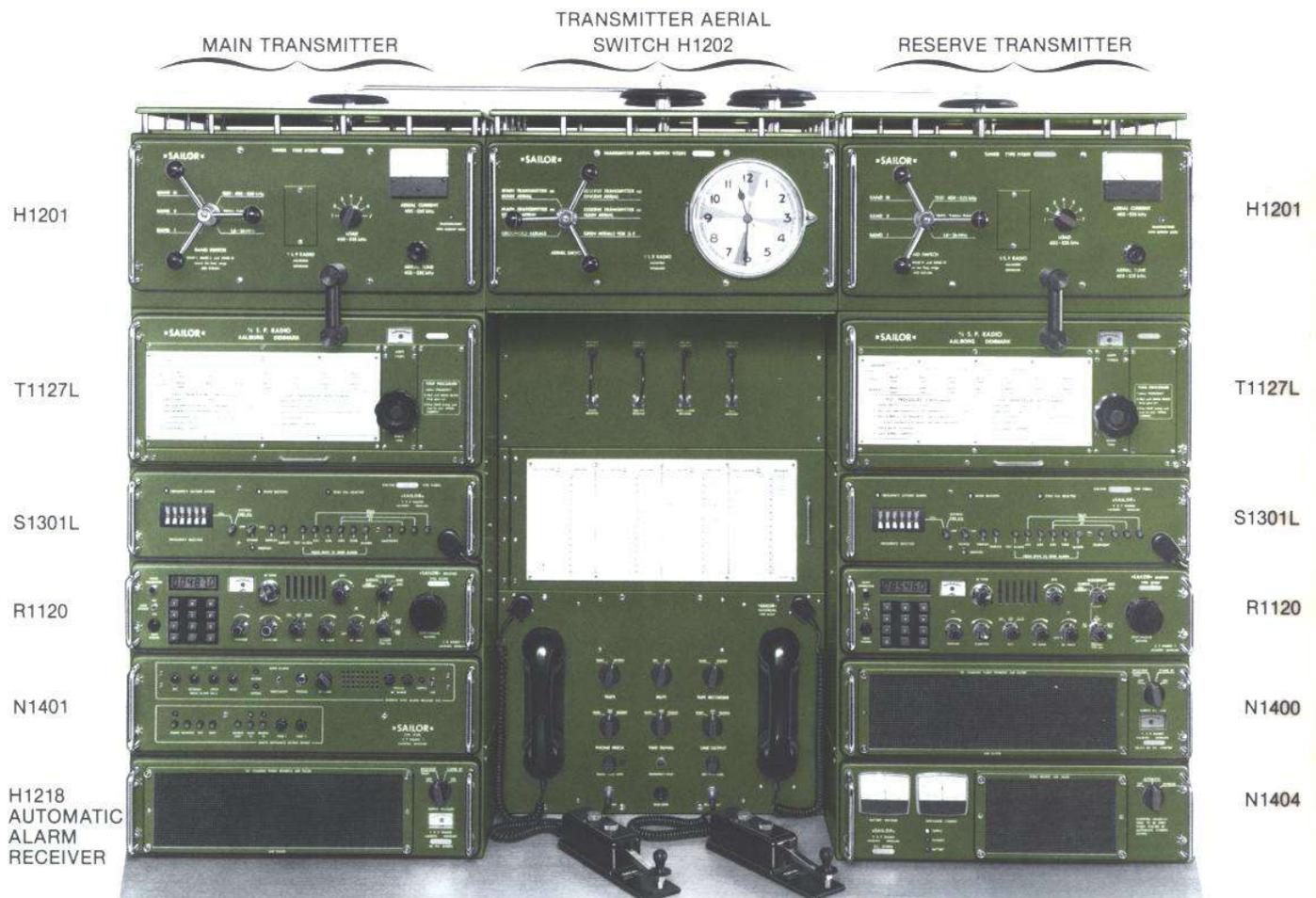
MECHANICAL DIMENSIONS

SAILOR short wave programme gives many combination possibilities. Below is a table of the mechanical dimensions.

Combination possibilities	Height	Depth	Width
T1127 - S1300/01 - R1117/19/20-N1400/01	615 mm	498 mm	495 mm
T1127 - S1300/01 - R1117/19/20 - N1400 - N1404	759 mm	498 mm	495 mm
T1127 - S1300/01 - R1117/19/20 - N1400 - N1401 - H1203	793 mm	498 mm	495 mm
T1127 - S1300/01 - R1117/19/20 - N1400 - N1401 - N1404 - H1203	937 mm	498 mm	495 mm
H1200 - S1300/01 - R1117/19/20 - N1400/01	541 mm	498 mm	495 mm
H1200 - S1300/01 - R1117/19/20 - N1400 - N1404	685 mm	498 mm	495 mm
H1200 - S1300/01 - R1117/19/20 - N1400 - N1401 - H1203	719 mm	498 mm	495 mm
H1200 - S1300/01 - R1117/19/20 - N1400 - N1401 - N1404 - H1203	863 mm	498 mm	495 mm
T1127L - S1301L - R1117/19/20 - N1400/01 - H1201	935 mm	498 mm	495 mm
T1127L - S1301L - R1117/19/20 - N1400 - N1404 - H1201	1075 mm	498 mm	495 mm
T1127L - S1301L - R1117/19/20 - N1400 - N1401 - H1203 - H1201	1110 mm	498 mm	495 mm
T1127L - S1301L - R1117/19/20 - N1400 - N1401 - N1404 - H1203 - H1201	1250 mm	498 mm	495 mm
T1127 (remote controlled)	243 mm	530 mm	560 mm

On request you can have the mounting instruction for SAILOR short wave programme.

Sailor short-wave program 1000 - MAIN STATION



SOLAS MAIN RADIO STATION

MAIN TRANSMITTER

Due to the large flexibility of SAILOR short wave programme 1000 it is possible to extend a standard short wave transmitter with a 500 kHz tuner H1201 to a main transmitter covering all maritime frequencies from 400 kHz to 26 MHz with all telegraphy - telephony - and telex facilities.

RESERVE TRANSMITTER

The reserve transmitter is completely identical to main transmitter except from the power supply which consists of a DC power supply and a battery charger.

MAIN RECEIVER, RESERVE RECEIVER

The same receiver SAILOR R1120 is used.

SOLAS MAIN RADIO STATION

S.P. Radio has with the tandem construction, shown on the above photo, made it possible to build-up a SOLAS main radio station which as far as safety and price is concerned is completely unsurpassed. Main transmitter and reserve

transmitter are equal powerful and have the same facilities, and it is therefore without importance which transmitter or receiver is used. Furthermore it makes it possible in an emergency situation, where several units may have become inoperative to interchange the units so that you will have a functional station.

SOLAS SATELLITE BACK-UP STATION

When changing to satellite communication the requirements from the authorities will be fulfilled by an enlarged SAILOR reserve station consisting of the units H1201 - T1127L - S1301L - R1120 - N1400 - N1401 - H1203 - N1404 - H1218 and 500 kHz automatic alarm receiver, securing full telegraphy- telephony- and telex communication on alle maritime frequencies from 400 kHz-26 MHz. The power supply is here based on either supply from the ship's AC network or from batteries.

