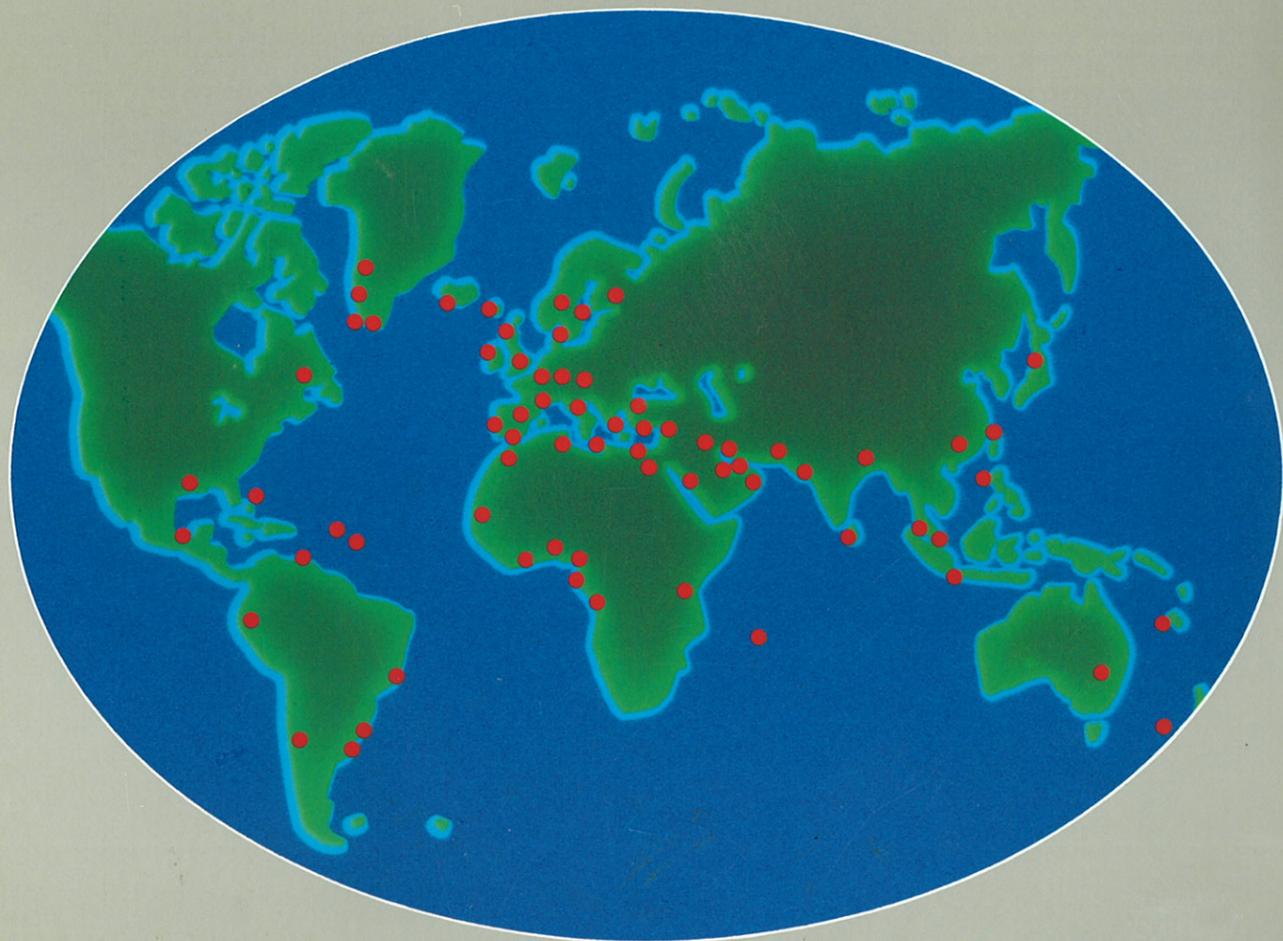


SAILOR - ALL OVER THE WORLD



S.P. RADIO A/S

PORSVEJ 2 • DK-9200 AALBORG SV • DENMARK
TEL. INT. + 45 9818 0999 • TELEX 69 789 SPRAD DK • TELEFAX INT.+ 45 9818 6717

HESTECH & CO



1996.

SAILOR
DOUBLE SCRAMBLING

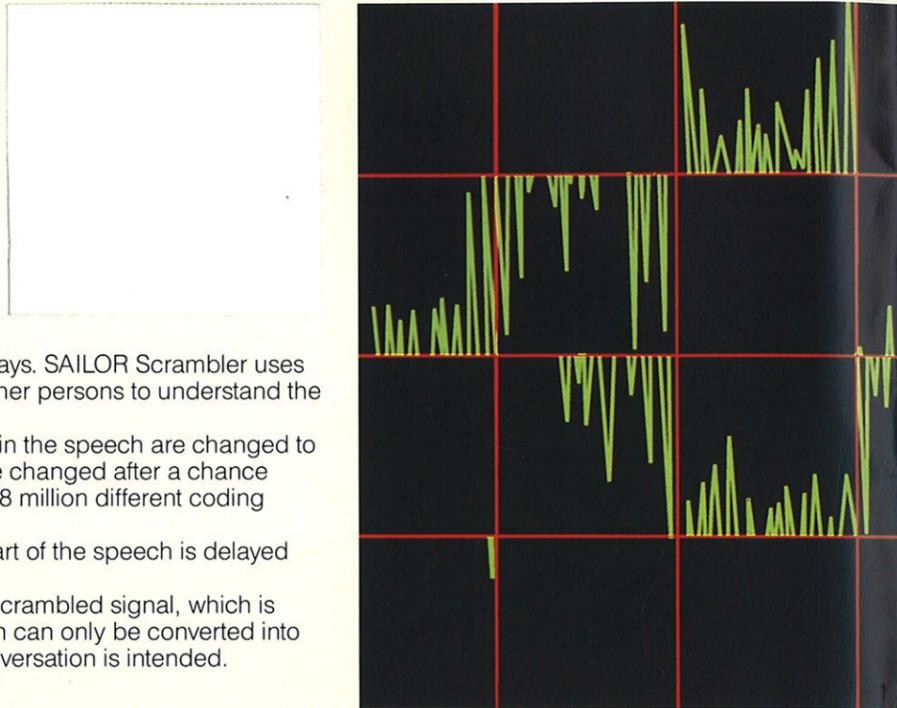
WHAT IS "SAILOR" DOUBLE SCRAMBLING?

Speech can be made unintelligible in several ways. SAILOR Scrambler uses two principles, which makes it impossible for other persons to understand the conversation.

The first principle is frequency rolling. All tones in the speech are changed to other random tones. E.g. a 1000 Hz tone will be changed after a chance pattern, controlled by a code generator with 16.8 million different coding possibilities.

The other principle is time scrambling where part of the speech is delayed some milliseconds.

A combination of these two principles forms a scrambled signal, which is impossible for other people to break, and which can only be converted into intelligible speech by the one for whom the conversation is intended. That is SAILOR double scrambling.



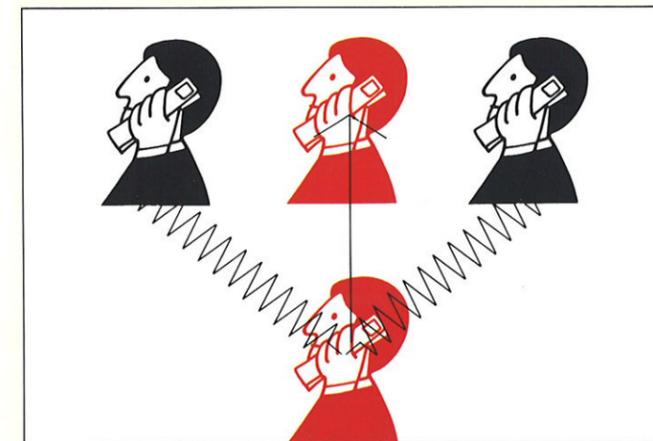
MAKES IT EASY FOR YOU

CONTROLS

-  Soft-key, turns the scrambler on and off.
-  Increases volume for loudspeaker. (Internal/external for CRY2001 and external for CRY2002).
-  Reduces volume for loudspeaker. (Internal/external for CRY2001 and external for CRY2002).
-  Station switch for the 2 stations, which can be connected, e.g. NMT and VHF radiotelephones.
-  Number keys for keying-in the 8-digit code numbers and use of quick select register.
-  Function key for programming in quick select register.
-  Turns the display light on and off, and lighting of keyboard.
-  Function key. E.g. zero position of code generator, end of group call keying, etc.
-  Selection of group call number instead of selective number.

TECHNICAL DATA

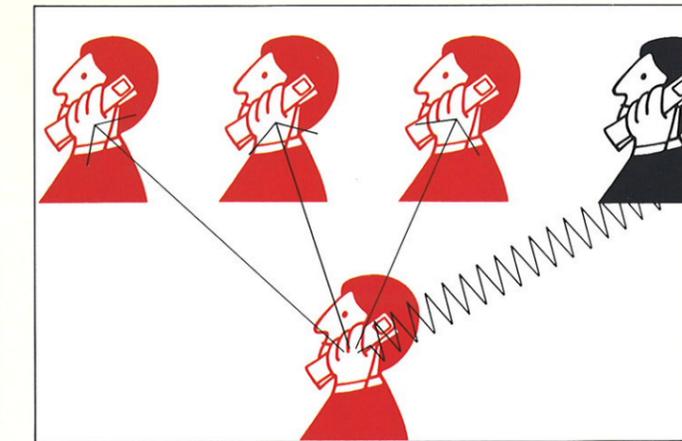
- Principle:** Rolling frequency domain scrambling combined with time delay sub-band signal processing. Ensures high security and negligible residual intelligibility. Rolling frequency = 10 Hz. Time delay process = 177 mS.
- Code Capacity:** 16.8 mill. (2²⁴) combinations in each of the 65,536 structures, which can be coded from the factory.
- Automatic. Aux. Key:** 32 Auxkeys, which are automatically generated after each start and change of transmission direction.
- Synchronisation:** Group call; start synch. time = 1.12 sec. Selective call; start synch. time = 3.01 secs. Start of transmission; synch. time = 1.19 sec. End of transmission; synch. time = 0.56 sec.
- Aut. Resynchron:** Every 70 secs. with a resynch. time = 0.28 sec.
- Mode of Operation:** Selective call with public selcall number. Group call with secret group call number. Semi-duplex/Simplex.
- Number Register:** 8 quick select selcall numbers. 8 quick select group call numbers.
- Pre-key of Transmitter:** From 10 msec. to 2.5 secs. is programmed in a service PROM.
- Bandwidth:** 400-2600 Hz, clear and scrambled signal.
- Line Input/Output:** Front panel selectable between two radiotelephones/telephones. 600 ohm balanced or unbalanced. Transmit level = +4 dBm. Receive level = 0 to -30 dBm.
- Connections:** Two keying relays with break or make contacts. Two optocoupled distress inputs: 6-30 V or 3-15 mA.
- Temperature:** -10°C to +55°C.
- Power:** DC power supply 10V to 32V DC, 15 W.
- Loudspeaker:** 3 Watt/4 ohm.



SELECTIVE CALLING

Every SAILOR Scrambler is from the factory provided with an 8-digit selcall number, which operates like an ordinary telephone number. It is used to establish a secret conversation between 2 scramblers.

This selcall number can be communicated openly to anyone.

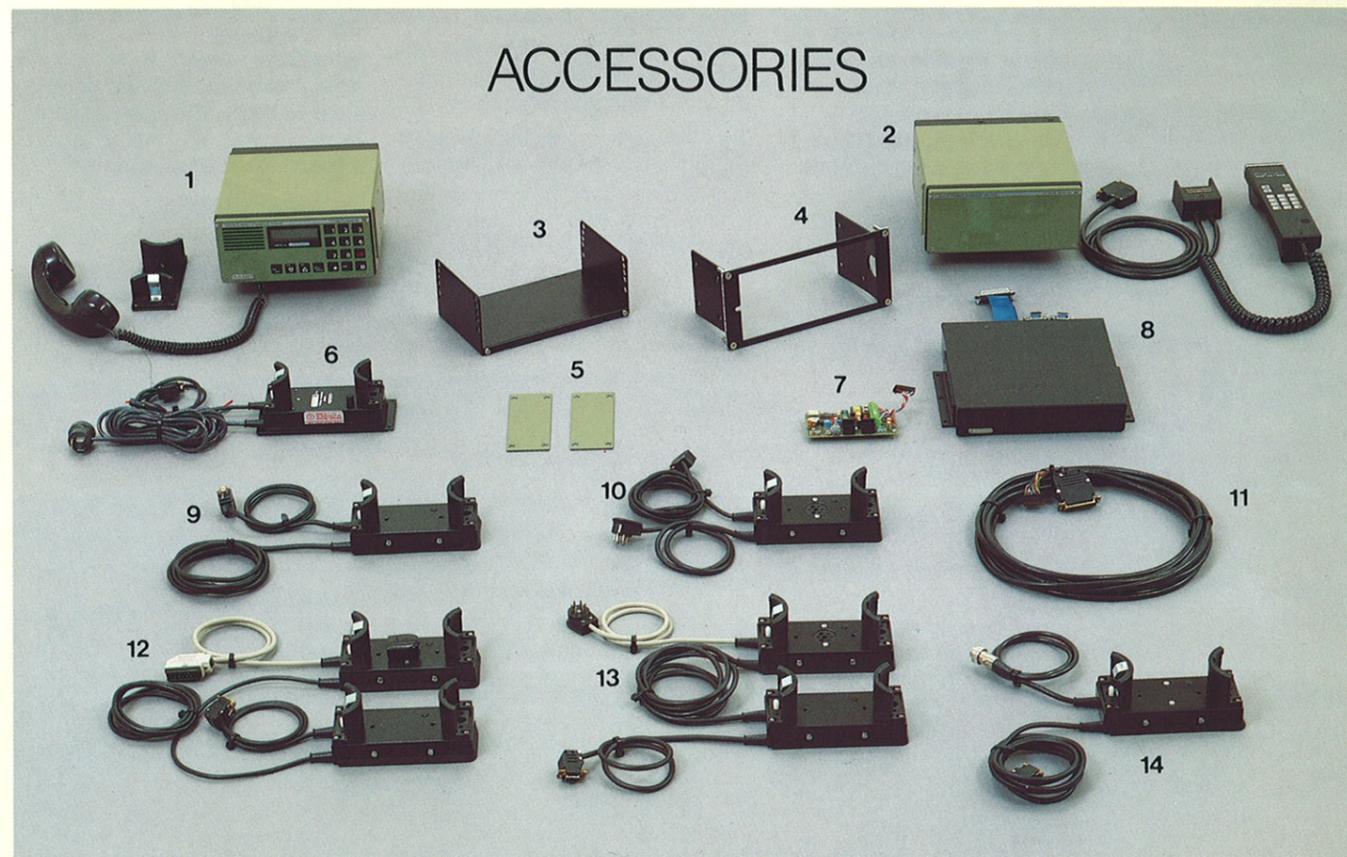


GROUP CALLING

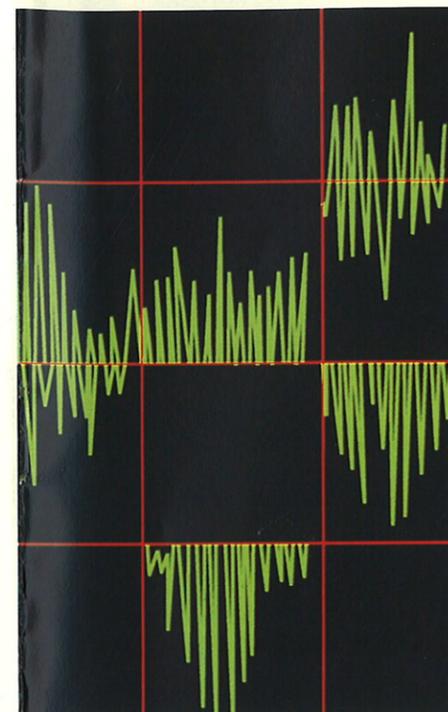
Two or more stations can establish a secret conversation – a telephone conference – where all the parties involved can listen and send. Such a meeting can be established when the parties select the same secret group call number.

"SAILOR" SCRAMBLER

"SAILOR"
SCRAMBLER
OBTAINABLE
IN 2 VERSIONS:



- | | | |
|--|--|---|
| 1. SAILOR Scrambler CRY2001 | 8. Universal connection box H2080 for CRY2002 | 11. Extension cable to microtelephone CRY2002 |
| 2. SAILOR Scrambler CRY2002 | 9. Connection kit H421 between RT146 and CRY2001
Connection kit H425 between RT146 and CRY2002 | 12. Connection kit H239 between RT143 and SAILOR Scrambler |
| 3. Mounting bracket H2055 for table, wall or ceiling | 10. Connection kit H240 between T121, T124, T126, T128 and SAILOR Scrambler
Connection kit H242 between T122 and SAILOR Scrambler | 13. Connection kit H238 between RT144C and SAILOR Scrambler |
| 4. Mounting kit H2063 | 7. Telephone line adaptor 702090 for H2080 | 14. Connection kit H2082 between RT2047 or T2031 and SAILOR Scrambler |
| 5. Lashing kit H2068 | | |
| 6. Telephone line adaptor H2090 for CRY2001 | | |



PROTECTED SPEECH

In our communication society there has long been a distinct need for protected speech. S. P. Radio have now fulfilled a growing wish from the consumer with the development of SAILOR double scrambling.

SAILOR double scrambling makes a telephone conversation unintelligible to everybody except the person for whom the conversation was intended. It is nonsense to anyone else, who may be listening.

SAILOR double scrambling contains two systems:

SELECTIVE CALLING between two stations, where one of the parties keys an 8-digit number – exactly as on a telephone and the conversation is scrambled.

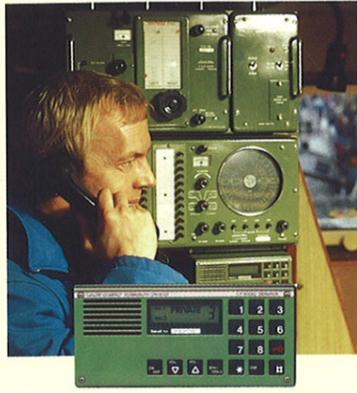
GROUP CALLING, where two or more persons can establish a protected conversation, if they agree upon the same group call number beforehand.

Everybody else – also other SAILOR scramblers – listening, will receive signals. However, only the scramblers, which have the code agreed upon, will be able to receive intelligible speech.

SAILOR double scrambling leads the development with the unique voice recognition. An important element in the security of protected speech.




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With SAILOR Scrambler, business conversations can now be effectively protected from unwanted listening. A security which makes investment worth while. Also of course, conversations from the company to a salesman in the field having a mobile telephone and a SAILOR Scrambler can be protected. SAILOR Scrambler supplements the existing station.

Just as easy to operate as an ordinary telephone.

Also at sea, there is a need for security against listening in to the conversations.

It is easy to install a SAILOR Scrambler. An excellent supplement to the existing VHF radio-telephone.

SAILOR Scrambler has been designed to operate under extreme conditions in small, semi-open boats.

SAILOR Scrambler has been tested for a number of years ensuring the highest degree of dependability.

Everybody who wants protected speech, needs a SAILOR Scrambler. It is easier than you think to listen in to a telephone conversation. With SAILOR Scrambler you can feel safe. It is that simple: Insert the scrambler plug in the telephone plug and there it is ready for scrambling.

Also calls to mobile telephones are thus protected from listening in.

Within fishing circles all over the world there has for many years been a wish for protected speech, so making it possible for fishermen to make private telephone conversations, without other people listening in.

It is not unusual for ship/ship or ship/home conversations to be listened to.

S. P. Radio have made use of many years' experience within the maritime communication industry when developing SAILOR double scrambling, designing it to work effectively during day-to-day operation – even under difficult conditions.

From the authorities there has long been a distinct demand for protected speech, which has now been covered with SAILOR double scrambling. This especially applies to the police and customs service. In their day's work it is almost a necessity in order to accomplish the task effectively.

Also security transport companies have need of protection. Here SAILOR Scrambler is a natural part of the security.

The development of SAILOR double scrambling with the unique voice recognition has solved a large problem for embassies and intelligence services.

The Army, the Navy, and the Air Force make extreme demands for protected speech: protection against deciphering, perfect voice recognition, and the highest degree of dependability.

Only SAILOR Scrambler is able to meet these demands completely. SAILOR double scrambling has become a concept within protected speech. With SAILOR Scrambler a very high security level has been obtained. It could be that this is the most essential reason why so many people choose SAILOR Scrambler.

For safety's sake.

WHAT CAN "SAILOR" SCRAMBLING DO FOR YOU?



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