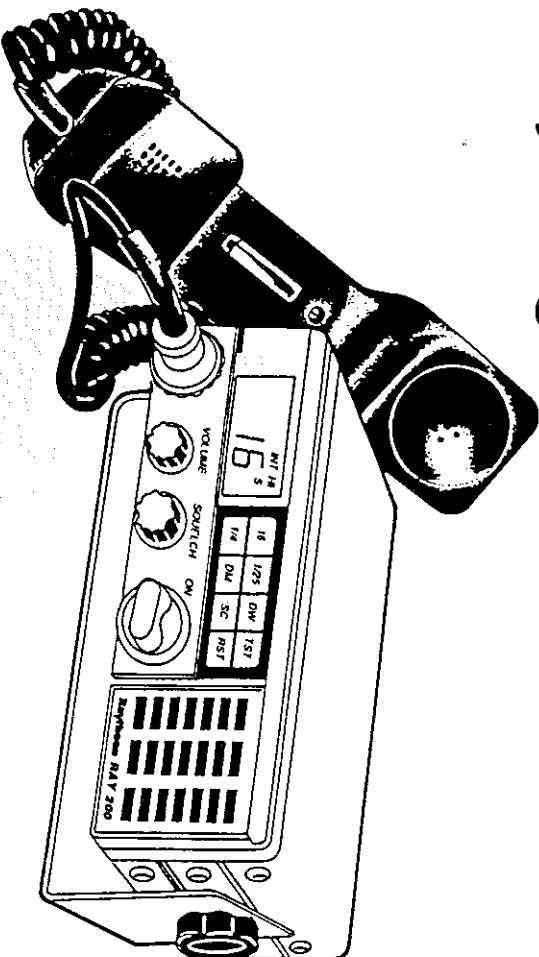


- Båstford:**
 Radioservice AS
 P. Boks 188
 9991 Båstford
 Tlf. (088) 83188
- Honningsvåg:**
 Chr. Tuv
 P. Boks 443
 9751 Honningsvåg
 Tlf. (084) 72999
- Havøysund:**
 Havøysund Skips-
 elektronik
 9690 Havøysund
 Tlf. (084) 23466
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 Teirad Electronic AS
 P. Boks 219
 9601 Hammerfest
 Tlf. (084) 12822
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 Phonic AS
 P. Boks 101
 9190 Skjervøy
 Tlf. (083) 60164
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 P. Boks 83
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 Tlf. (083) 84617
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 Senja Service AS
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 9386 Senjahopen
 Tlf. (089) 58505
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 8470 Bø i Vesterålen
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 Storgata 100
 8300 Svolvær
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 Balisat Radioservice
 8373 Ballstad
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 AS Ramak
 P. Boks 156
 8001 Bodo
 Tlf. (081) 24025
- AS Total Elektronikk**
 P. Boks 88
 8001 Bodo
 Tlf. (081) 22138
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 P. Boks 14,
 8801 Sandnessjøen
 Tlf. (089) 40218/40855
- Ranvik:**
 Arne Waah-Olsen
 7900 Ranvik
 Tlf. (077) 90071
- Tromsheim:**
 AS Argon Elektro
 P. Boks 5066
 7002 Tromsheim
 Tlf. (07) 528533
- Della Elektro**
 P. Boks 5111
 7042 Tromsheim
 Tlf. (07) 512533
- Sveggessundet:**
 Sveggessundet
 6552 Sveggessundet
 Tel. (073) 11355
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 Sandbost
 Storkeia 4
 6500 Kristiansund
 Tlf. (073) 74955
- Oddeval Elektronikk AS**
 Haugdt. 12
 6500 Kristiansund
 Tlf. (073) 79000
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 O. Øverland AS
 P. Boks 128
 6401 Molde
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 Kirkegt. 7
 6004 Alesund
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 Ing. Akenes & Co. AS
 P. Boks 19
 5601 Nordheimssund
 Tlf. (05) 551833
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 Helland & Steinsbu AS
 Søre Almenningen 2
 5035 BergeSandviken
 Tlf. (05) 324310
- Svein Hank AS**
 Øvregt. 31
 5003 Bergen
 Tlf. (05) 314650
- Sinrad Marine AS**
 P. Boks 41
 5031 Lakevåg
 Tlf. (05) 319700
- Haugesund:**
 Biomørande Radio AS
 Haraldsgt. 195
 5500 Haugesund
 Tlf. (04) 711455
- AS Vico**
 Strandgt. 2188
 5500 Haugesund
 Tlf. (04) 724011
- Strangerer:**
 Lander Larsen Elektronikk
 P. Boks 7043
 Jorenholmen
 4004 Strangerer
 Tlf. (04) 55000/520874
- Egersund:**
 Egersund
 Reiserparasjon
 P. Boks 224
 4371 Egersund
 Tlf. (04) 492821/090 72299
- Farsund:**
 Mann Elektro
 P. Boks 58
 4551 Farsund
 Tel. (043) 91920/094 81576
- Mandal:**
 Maritim Elektriske AS
 P. Boks 98
 4501 Mandal
 Tel. (043) 65089/61450
- Kristiansand:**
 AS Elektrisk
 P. Boks 1055, Lundriden
 4602 Kristiansand
 Tlf. (042) 25534
- Risør:**
 Carl Wæler Eriksen
 Strandgt. 19
 4550 Risør
 Tlf. (041) 50680/094 63963
- Sandefjord:**
 Arild Christensen
 Kilgaten 8
 3200 Sandefjord
 Tlf. (034) 61487/65727
- Skien:**
 Basse Gundersen
 P. Boks 1029
 3701 Skien
 Tlf. (035) 23692
- Oslo:**
 Sjøkaptein K. Lein
 Kongen
 Frognerstranda 2
 0271 Oslo 2
 Tlf. (02) 55539/293642
 030 02702
- Fredrikstad:**
 Tel-Rad AS
 P. Boks 544
 1601 Fredrikstad
 Tlf. (09) 315616/313246

RAY200

VHF - MARINE RADIO

Betjening



Robertson®
 et selskap i BIRD GRUPPEN

Postboks 55, 4371 Egersund
 Telefon (04) 49 17 77
 Telefax (04) 49 24 43 - Telex 33139

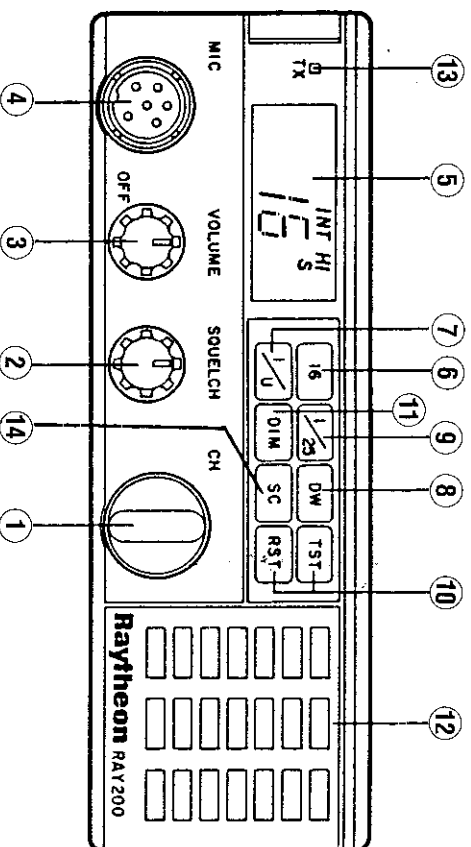
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 Tlf. (04) 491777 - Fax (04) 492443 - Tlx. 33139

RAY200

VHF - FM RADIOTELEFON

BETJENING



- 1 «CH» - KANALVELGER
Velg ønsket kanal ved å vri på kanalvelgerknappen.
- 2 SQUELCH - STØYSPERRE
Når denne kontrollknappen blir dreid mot venstre, kommer en kraftig støy fra høyttaleren. Dreii kontrollen sakte mot høyre inntil støyen akkurat forsvinner. Dette er riktig innstilling for best mottakerfølsomhet.
- 3 «OFF/VOLUME - AV/PÅ KNAPP
Styrkek kontroll - regulerer lydnivået i høyttaleren.
- 4 «MIC»
Her kobles mikrofonledningen.

5 LCD DISPLAY PANEL

Displayet viser:

- a) Valgt kanal
- b) «16» - når du trykker kanal-16 knappen.
- c) «HI» eller «LO» for høy eller lav sendereffekt.
Velges på 1/25 knappen.
- d) «DW» (dobbel lyttevakt) vises i displayet når DW knappen trykkes.

6 «CH 16» - for direktevalg av NØDKANAL 16

Tidligere valgt kanal forsvinner i displayet og blir erstattet av 16. For å gå tilbake til tidligere valgt kanal trykkes 16 en gang til.

7 «1/U» - INTERNASJONAL/US - KANALVELGER

Ikke i bruk i Norge. (Gjelder kun USA).

8 «DW» (Dual Watch) - DOBBEL LYTTEVAKT

Valgt kanal i tillegg til kanal 16 kan avlyttes samtidig. Valgt kanal vises i displayet.

Ved trafikk på kanal 16 vil mottakeren låses til denne, og «16» fremkommer i displayet. Når signalet opphører, velger mottakeren automatisk dobbel lyttevakt igjen.

Ved trafikk på valgt kanal vil mottakeren fortsatt avlytte kanal 16, slik at signalet blir avbrutt et kort øyeblikk hvert sekund.

Mottaking uten avbrudd: Trykk «DW» for dobbel lyttevakt «AV».

NB! Dersom senderen benyttes, må «DW» velges på nytt.

9 «1/25» - 1 ELLER 25 WATT SENDEREFFEKT

Hurtigvalg av 1 eller 25 watt sendereffekt. «HI» eller «LO» indikeres i displayet (høy eller lav effekt).

10 «TST» og «RST»

Disse knappene blir brukt når selcall er montert i VHF-en. Trykk TST for selvest av selcall og RST for å nullstille/slå av alarmen.

11 «DIM» - DAG-/NATTLYS I DISPLAYET

NB! Denne skal stå «AV» om dagen og trykkes «PÅ» om natten for bedre å se kanalnummeret.

12 INNEBYGGET HØYTALER

13 «TX» - LAMPE

Denne lyser når sending pågår.

14 «SC» - SCANNING AV/PÅ

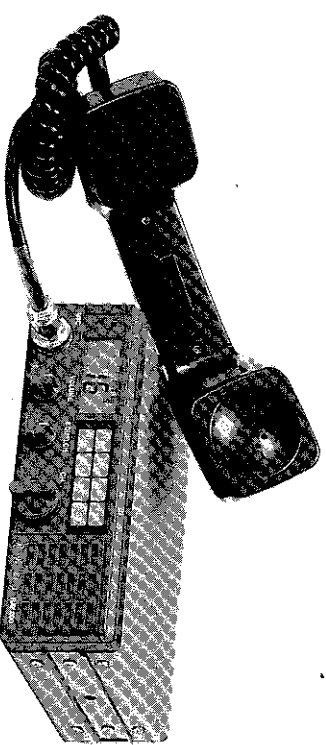
Automatisk søk over samtlige kanaler, samtidig som kanal 16 avlyttes. Dersom scanning stopper opp (f.eks. ved trafikk på en kanal) benyttes kanalvelgerknappen for å fortsette scanning.

Raytheon

RAY200

VHF
MARINE RADIO

OPERATION MANUAL



Raytheon Marine
Sales & Service Company

Siliangade 6
DK-2300 Copenhagen S
Denmark
Telephone: (4531) 57 06 11

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INSTALLATION	4
OPERATING CONTROLS AND FUNCTIONS	6
OPERATING RADIOTELEPHONE	9
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INSTALLED CHANNELS AND FREQUENCIES	11

INTRODUCTION

The Raytheon RAY200 VHF-FM marine radiotelephone provides reliable simplex and (two-frequency) mode communications between ships and from ships at sea to port and shore stations.

The semi-duplex mode is referred to as duplex mode in this manual. A PLL frequency synthesizer is used to generate the channel frequencies and a micro-processor controls the channel functions.

Installation requires attaching the mounting bracket, and connection to a 12V DC power source and a proper antenna.

FEATURES

The RAY200 is designed and manufactured to provide ease of installation and excellent reliability. The important built-in features of the radio are listed below:

- * All solid state circuitry for low current drain, minimum heat dissipation and maximum reliability.
- * High performance receiver with optimum selectivity for operation in "noisy" or "noisy" environments.
- * 55 International VHF-FM Maritime channels are included.
- * Four watts audio output to both an external and an internal speaker provides adequate audio even in a noisy environment.
- * Automatic selection of Channel 16 and 25 watts output when the radio is turned on.
- * Dual Watch (DW) circuit that automatically monitors Channel 16 and a selected channel. Push button is activated.
- * Multi-channel scanning is permitted in some countries. This function may only be used by our factory or by the authorized Raytheon service agent.
- * Phase locked loop (PLL) frequency synthesizer generates channel frequencies that meet the need for conventional crystals for each frequency.
- * Microprocessor-controlled channel frequencies and characteristics.
- * "16" push button for instant access to calling and safety channel 16 or selected port and star channels.
- * Optional 5 tone built-in Selcall.

Important Warning

It is illegal to operate this VHF-radio without a proper license. The application form is available from your local PTT. If you are in doubt please contact your local RAYTHEON dealer for more information.

Model name: RAY-200

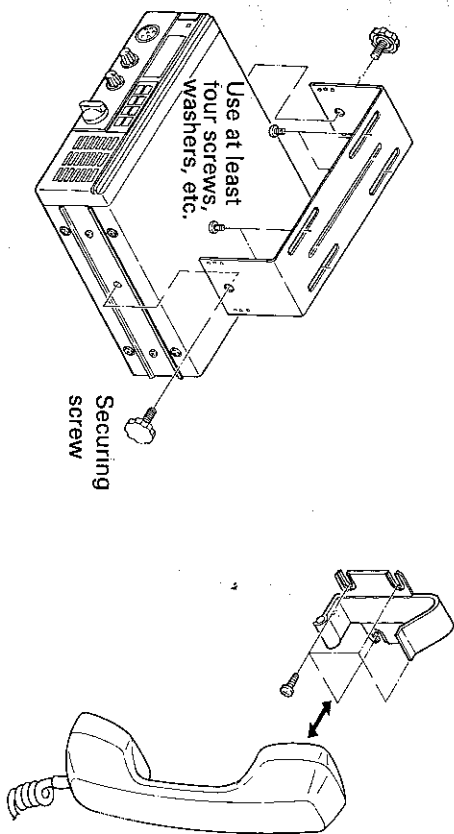
Serial no: _____

INSTALLATION

Before installing the radiotelephone, choose a proper location which is free from moisture and excessive heat. Although the unit is designed for marine service, the unit must be protected from direct exposure to water splashes. Also make sure the location chosen may not disturb operation of your boat.

1. Mounting Bracket

The mounting bracket may be used for base type or gimble type overhead mounting. Secure the bracket to the mounting surface by using at least four screws. Depending on the mounting location, you can use self-tapping screws supplied, or wood screws, washers and nuts. Refer to an example shown below.



Part numbers for accessories	
Description	Q'ty
Handset	1
Holder for handset	1
Holder for radio	1
Securing screws	2
Handset for Germany and Greece	1
Holder for Germany and Greece	1

Description	Part No.
Handset	R200055
Holder for handset	R200056
Holder for radio	R200052
Securing screws	R200054
Handset for Germany and Greece	R200050
Holder for Germany and Greece	R200051

2. Antenna Connection

Use a VHF marine antenna which meets the 50 ohm termination requirements. It should be mounted as high as possible for maximum range. Connect it to the antenna connector on the rear panel of the radiotelephone, using 50 ohm coaxial cable with a PL-259 connector.

Since there are a large number of VHF marine antenna available, you should consult the dealer from whom you purchased the unit for further information on marine antennas that meet your specific needs.

IMPORTANT: Do not attempt to transmit without antenna (or with an improper antenna connected. This may cause damage to the RF power transistors.

3. Power Connection

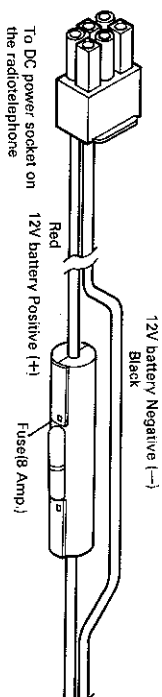
IMPORTANT: This unit is designed for operation from 12-volt negative ground tem. Do not attempt to use it in a positive ground system.

The DC power cable supplied is used to make the necessary DC voltage connection to the battery line. Choose a point which is capable of handling at least 6 amps (never circuit, for example). The "switched" side of the ignition switch is usually a suitable positive (+) 12 volt connection. Neatly run the power cable leads to this location and must extend the power leads, keep the wiring as short as possible, since long leads will degrade the performance.

Use 6 mm² wire for extension up to 3 m and 10 mm² wire for longer extensions.

Connect the red (fused) lead to the positive (+) battery line, and black wire to the battery (-), usually the same as the engine ground. In transceiver installation system is very important and has a great effect on communication range. Reverse connections (reversing battery polarity) will automatically actuate the protective unit and cause the fuse to blow, thus protecting the unit from damage. If the fuse blows, the power switch off and check reverse battery connection. Replace the fuse with the same rating, since any fuse higher than this value may cause damage to the phone.

The other end of the DC power cable is terminated with a 6 pin female connector. Do not attempt to force the connector, when properly lined up, the connector will slide up the keyway properly before pushing the power cable connector into the transceiver. Do not attempt to force the connector, when properly lined up, the connector will slide easily.



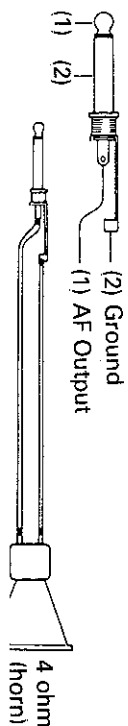
Parts numbers for accessories		
Description	Q'ty	Part No.
Power Cable	1	R200053

4. Handset Connection

Connect the handset supplied with the unit to the MIC jack on the front panel.

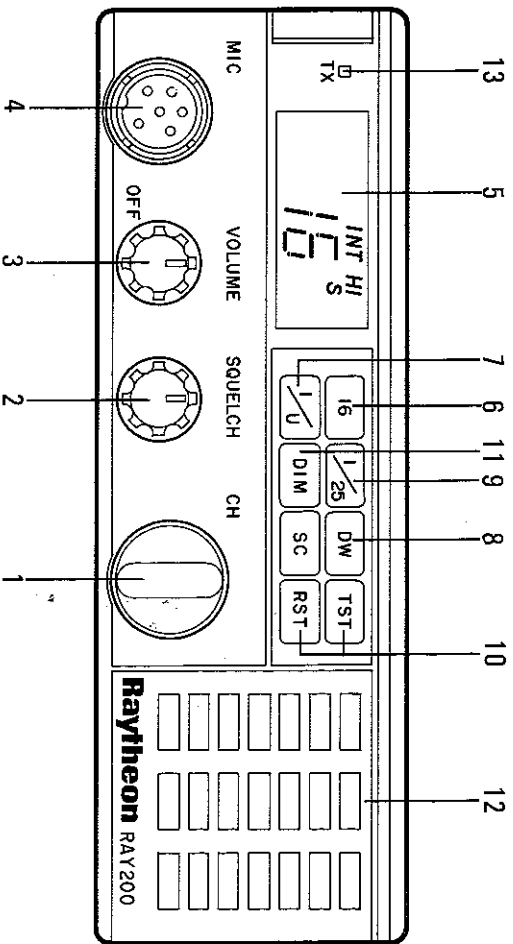
5. External Speaker Connection

The unit can be used with an external speaker system by making use of the EXT rear panel. Connect the external speaker designed for this purpose, 4 Watt, 4 2-conductor plug (subminiature type).



OPERATING CONTROLS AND FUNCTIONS

— Front Panel —



1. Channel Selector

This control selects one of the channels tabulated in the table "INSTALLED CHANNELS AND FREQUENCIES".

2. Squelch Control

Used to eliminate annoying background noise when no signals are present. To adjust the Squelch control properly during reception, proceed as follows:

- 1) Turn knob counterclockwise until background noise is heard.
- 2) Rotate control slowly clockwise until background noise disappears. At this point, the radiotelephone will be relatively quiet under no signal conditions but an incoming signal will overcome the squelch action and be heard.

3. Off/Volume Control

Rotate knob clockwise to turn power on. Further rotation will increase the sound output from the speaker.

4. MIC Jack

This jack accepts the handset supplied with the unit.

5. LCD Display Panel

This display indicates:

- A) "A" channel number" you have selected.
- B) "16" when CH-16 priority button is depressed.
- C) "HI" and "LO" when 1/25 button is depressed.

6. CH 16 Priority Switch

- a) By pushing this switch in RX mode Channel 16 is instantly selected, overriding normal channel or memory channel.
- b) LCD display show "16" in the center.
- c) To release the Channel 16 priority simply push this switch for the second time. LCD display goes out and the channel which was used before this switch was actored.

7. USA-International Switch

This switch has been incorporated to help to prevent illegal operation on certain channels in the USA or International frequencies (for example). Refer to VHF FM Radiotelephone channels and functions in this manual. The US channel selection is blocked in most European countries due to domestic regulations.

8. Dual Watch (Non-Lock)

- 1) When this switch is first pushed the radiotelephone starts picking up the signals in the normal channel and 1/10 seconds for Channel 16. The LCD display shows "DUAL WATCH".
- 2) When a signal of Channel 16 is received the radiotelephone is locked in Channel 16.
- 3) When Channel 16 signal thus received as above is finished and yet Dual Watch is released, Dual Watch starts again after 5 seconds.
- 4) To release Dual Watch simply push the switch for the second time.
- 5) When Channel 16 signal is received and the microphone is keyed in for transmit the Dual Watch switch the previous normal channel which has been in memory is released and yet the radiotelephone remains locked in Channel 16 after transmit is released. Dual Watch switch the previous normal channel which has been in memory is released and yet the radiotelephone remains locked in Channel 16 after transmit is released. Dual Watch switch the previous normal channel which has been in memory is released and yet the radiotelephone starts listening the normal channel and Channel 16 once again.

9) 1/25 Power Button

This button selects either 25 watts or 1 watt transmit power. With this button in the normal channel the radiotelephone will produce the full rated transmit power (25W) for a longer range, while in "LO" position it will produce 1 watt transmit power for local communication.

10. TST and RST Buttons

These buttons are used in connection with an optional built-in 5-tone selcall. Pressing these buttons initiate a selftest of the selcall and RST will reset the alarms.

11. DIM Switch

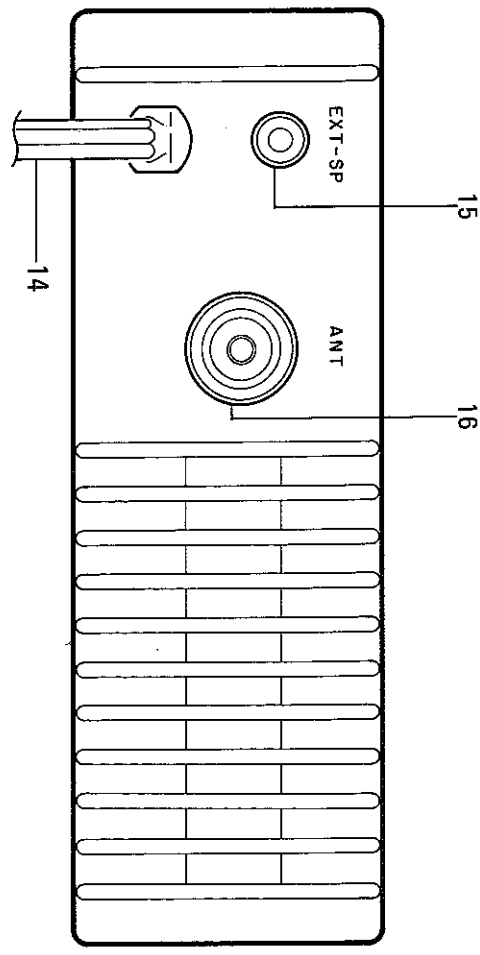
Used to turn on or off the rear illumination of the LCD panel. The current illumination is approx. 100mA.

IMPORTANT: Keep this switch in the depressed position (OFF) during the day time. This switch does not require the illumination of LCD panel. Use this switch only at night to briefly to confirm the channel number selected or the function menu.

12. Built-in Speaker

OPERATING RADIOTELEPHONE

— Rear Panel —



14. Power Connector (13.6V DC)
DC power to operate the unit is fed through this connector using the DC power cable supplied.

15. External Speaker Jack
This jack is used for connection to an external speaker or horn. Insertion of the speaker plug (standard 1/8" phone plug) in this jack automatically silences the built-in speaker.

16. Antenna Connector
This accepts a PL-259 antenna connector. The cable from the VHF Marine antenna (50 ohm) should be terminated with this type of connector.

IMPORTANT: Do not attempt to transmit without an antenna or with an improper antenna needed. This may have a damaging effect to RF power transistor.

*** Transmit and Receive Operation**
Before operating the radiotelephone transmitter, you must meet all the requirements of the local government agency in charge of communications in your country. In most countries this includes obtaining a proper licence and having access to the regulations governing this type of equipment.

- * Operating the radiotelephone**
1. Turn the radiotelephone on and raise the Volume control until background noise. Be sure to turn the Squelch control to its fullest counterclockwise position initially.
 2. Place the US/IN switch in a desired mode.
 3. Enter the channel number by which you want to communicate.
 4. Place the HI/LO power switch in the HI position initially until your communication is finished.
 5. To transmit, press the push-to-talk switch on the center side of the handset and speak clearly in your normal tone with the microphone about two inches from your mouth. The TX LED indicator will light, indicating that the transmitter is operating.
 6. To receive, simply release the push-to-talk switch.

NOTE:

- a. During periods of transmission, the receiver is silenced and reception is therefore interrupted. In the same way your signal cannot be heard by another station when he is transmitting on the radio in the same way as just described above.
- b. When using the Channel 16 (Distress and Calling), simply place the CH16 switch above the radio in the same way as just described above.
- c. In certain European countries, the channels 15 and 17 are automatically set to 1W due to domestic regulations.
- d. Normal voice transmission is blocked on channel 70, as this channel is assigned for DSC (Digital Selective Calling) by IMO and CEPT.

SPECIFICATIONS

ADDENDUM 1

UK Channels version

Receiver Section		
Frequency range	156.00 — 163.00 MHz	
Channels installed	Refer to "Installed Channels and Frequencies" chart in this manual	Channel
Sensitivity	Better than 0.3µV SINAD	UK channel Installed channels and channel 37, M2 (MARINA)
Hum and noise	Better than 40 dB at 1mV RF input	channel 37
Image and spurious rejection	Better than 70 dB	TX Freq. 157.85 MHz
Intermodulation rejection	70 dB	RX Freq. 157.85 MHz
Adjacent channel rejection	70 dB	
Squelch sensitivity	Threshold: less than 0.25µV Tight: less than 2.00µV	channel M2
		TX Freq. 161.425 MHz
		RX Freq. 161.425 MHz
Audio power output	2W to 4 ohm, 10% distortion	
	4W to 4 ohm, 10% distortion — External speaker	
	10mW to 8 ohm, 10% distortion-Handset speaker	
Audio frequency response	300 — 3000 Hz, +1, —3 dB of 6 dB/OCT de-emphasis curve	
Current drain	1.5A at 13.2V (Max.)	

Transmitter Section

Frequency range	156.00 — 157.50 MHz
Channels installed	Refer to "Installed Channels and Frequencies" chart in this manual
RF output power	25W and 1W switchable
Modulation	16F3
Maximum modulation	5 kHz
Frequency stability	Within 0.001%
Hum and noise	Better than 40 dB
Spurious and harmonic emission	Less than —70 dB
Audio frequency response	300 — 2500 Hz referred to +1, —3 dB of 6 dB/OCT pre-emphasis curve
Microphone	Dynamic type
Antenna impedance	50 ohms, unbalanced
Current drain	High power: Less than 6A Low power: Less than 2.5A

Handset Section

Microphone	
Impedance	500ohm 30% at 1KHz
Directivity	Omni-directional
Sensitivity	—73 ± 4dB at 1KHz (0dB = 1V/microbar)
Frequency response	200-5000Hz

Speaker

Impedance	8ohm 20% at 1KHz
Sensitivity	90 ± 3dB, 0.5W at 30cm from standard microphone at 1KHz in free field
Resonance (Fo)	600 ± 100Hz
Rated input	0.5W

INSTALLED CHANNELS AND FREQUENCIES

CHANNEL DESIGN	TRANSMITTER	RECEIVER FREQUENCY	
		USA	INT'L
1	156.050(MHz)	156.050(MHz)	160.600(MHz)
2	156.100(MHz)	156.100(MHz)	160.700(MHz)
3	156.150(MHz)	156.150(MHz)	160.750(MHz)
4	156.200(MHz)	156.200(MHz)	160.800(MHz)
5	156.250(MHz)	156.250(MHz)	160.850(MHz)
6	156.300(MHz)	156.300(MHz)	156.300(MHz)
7	156.350(MHz)	156.350(MHz)	160.950(MHz)
8	156.400(MHz)	156.400(MHz)	156.400(MHz)
9	156.450(MHz)	156.450(MHz)	156.450(MHz)
10	156.500(MHz)	156.500(MHz)	156.500(MHz)
11	156.550(MHz)	156.550(MHz)	156.550(MHz)
12	156.600(MHz)	156.600(MHz)	156.600(MHz)
13	156.650(MHz)	156.650(MHz)	156.650(MHz)
14	156.700(MHz)	156.700(MHz)	156.700(MHz)
15	156.750(MHz)	156.750(MHz)	156.750(MHz)
16	156.800(MHz)	156.800(MHz)	156.800(MHz)
17	156.850(MHz)	156.850(MHz)	156.850(MHz)
18	156.900(MHz)	156.900(MHz)	161.500(MHz)
19	156.950(MHz)	156.950(MHz)	161.550(MHz)
20	157.000(MHz)	157.000(MHz)	161.600(MHz)
21	157.050(MHz)	157.050(MHz)	161.650(MHz)
22	157.100(MHz)	157.100(MHz)	161.700(MHz)
23	157.150(MHz)	157.150(MHz)	161.750(MHz)
24	157.200(MHz)	161.800(MHz)	161.800(MHz)
25	157.250(MHz)	161.850(MHz)	161.850(MHz)
26	157.300(MHz)	161.900(MHz)	161.900(MHz)
27	157.350(MHz)	161.950(MHz)	161.950(MHz)
28	157.400(MHz)	162.000(MHz)	162.000(MHz)
60	156.025(MHz)	156.025(MHz)	160.625(MHz)
61	156.075(MHz)	156.075(MHz)	160.675(MHz)
62	156.125(MHz)	156.125(MHz)	160.725(MHz)
63	156.175(MHz)	156.175(MHz)	160.775(MHz)
64	156.225(MHz)	156.225(MHz)	160.825(MHz)
65	156.275(MHz)	156.275(MHz)	160.875(MHz)
66	156.325(MHz)	156.325(MHz)	160.925(MHz)
67	156.375(MHz)	156.375(MHz)	156.375(MHz)
68	156.425(MHz)	156.425(MHz)	156.425(MHz)
69	156.475(MHz)	156.475(MHz)	156.475(MHz)
70	156.525(MHz)	156.525(MHz)	156.525(MHz)
71	156.575(MHz)	156.575(MHz)	156.575(MHz)
72	156.625(MHz)	156.625(MHz)	156.625(MHz)
73	156.675(MHz)	156.675(MHz)	156.675(MHz)
74	156.725(MHz)	156.725(MHz)	156.725(MHz)
77	156.875(MHz)	156.875(MHz)	156.875(MHz)
78	156.925(MHz)	156.925(MHz)	156.925(MHz)
79	156.975(MHz)	156.975(MHz)	161.975(MHz)
80	157.025(MHz)	157.025(MHz)	161.925(MHz)
81	157.075(MHz)	157.075(MHz)	161.975(MHz)
82	157.125(MHz)	157.125(MHz)	161.925(MHz)
83	157.175(MHz)	157.175(MHz)	161.775(MHz)
84	157.225(MHz)	161.825(MHz)	161.825(MHz)
85	157.275(MHz)	161.875(MHz)	161.875(MHz)
86	157.325(MHz)	161.925(MHz)	161.925(MHz)
87	157.375(MHz)	161.975(MHz)	161.975(MHz)
88	157.425(MHz)	162.025(MHz)	162.025(MHz)

Weather Channels Installed

CHANNEL 01 (182.560MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 02 (182.400 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 03 (182.475 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 04 (182.495 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 05 (182.450 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 06 (182.500 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 07 (182.525 MHz) NOAA	Weather (Weather SW On) RECEIVE ONLY
CHANNEL 08 (181.650 MHz) CANADA	Weather (Weather SW On) RECEIVE ONLY

COMPREHENSIVE VHF-FM MARINE RADIO TELEPHONE CHANNEL Designator

OPERATING CHANNEL DESIGNATIONS	FREQUENCY (MHz)		TYPE OF TRAFFIC	FU
	ORIGINAL	ADDITIONAL		
1	156.05	160.65	International Only	..
2	156.1	160.7	International Only	..
3	156.15	160.75	International Only	..
4	156.2	160.8	International Only	..
5	156.25	160.85	International Only	..
6	156.3	156.3	SAFETY	..
7	156.35	160.95	International Only	..
8	156.4	156.4	Commercial	..
9	156.45	156.45	Commercial	..
10	156.5	156.5	Non-Commercial	..
11	156.55	156.55	Commercial	..
12	156.6	156.6	Part Operations, USCG	..
13	156.65	156.65	Locks, Canals, Pilots	..
14	156.7	156.7	Part Operations, USCG	..
15	156.75	156.75	Environ, Hydrographic	..
16	156.8	156.8	DISTRESS CALLING	..
17	156.85	156.85	Sate Control Restricted	..
18	156.9	161.5	International Only	..
19	156.95	161.55	Commercial	..
20	157.0	161.6	International Only	..
21	157.05	161.65	Port Operations	..
22	157.1	161.7	International Only	..
23	157.15	161.75	USCG Restricted	..
24	157.2	161.8	International Only	..
25	157.25	161.85	Public Corresp.	..
26	157.3	161.9	Public Corresp.	..
27	157.35	161.95	Public Corresp.	..
28	157.4	162.0	Public Corresp.	..
60	156.025	160.625	International Only	..
61	156.075	160.675	International Only	..
62	156.125	160.725	International Only	..
63	156.175	160.775	International Only	..
64	156.225	160.825	International Only	..
65	156.275	160.875	International Only	..
66	156.325	156.325	Port Operations	..
67	156.375	156.375	Port Operations	..
68	156.425	156.425	Port Operations	..
69	156.475	156.475	Port Operations	..
70	156.525	156.525	Port Operations	..
71	156.575	156.575	Non-Commercial	..
72	156.625	156.625	Non-Commercial	..
73	156.675	156.675	Port Operations	..
74	156.725	156.725	Port Operations	..
75	156.775	156.775	Port Operations	..
76	156.825	156.825	Port Operations	..
77	156.875	156.875	GUARD CHANNEL	..
78	156.925	156.925	GUARD CHANNEL	..
79	156.975	161.975	Commercial	..
80	157.025	161.925	Commercial	..
81	157.075	161.975	Commercial	..
82	157.125	161.925	Commercial	..
83	157.175	161.775	International Only	..
84	157.225	161.825	International Only	..
85	157.275	161.875	International Only	..
86	157.325	161.925	International Only	..
87	157.375	161.975	International Only	..
88	157.425	162.025	International Only	..
WE	162.55	162.55	Commercial	..
WE	162.4	162.4	NOAA Weather	..
WE	162.475	162.475	NOAA Weather	..
WE	162.425	162.425	NOAA Weather	..
WE	162.46	162.46	NOAA Weather	..
WE	162.225	162.225	NOAA Weather	..
WE	161.775	161.775	NOAA Weather	..
WE	162.275	162.275	NOAA Weather	..