



**IDT Communication Technology Ltd.**

萬威通訊科技有限公司

# **LHR-80/82 Marine Radio**

## **Owner's Manual**

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## A. KEY FUNCTION

### A.1 Front Panel Key

Key	Short Press ( < 3 sec )	Long Press ( > 3 sec )
Hi/Lo /	Tx Hi/Lo power control	
16 /9	Jump to Channel 16 or 9	Change the priority channel
3CH	Change to 3CH mode	Add/ Del 3CH
Go/ Mob	Reset the route to WP	Mark current location as MOB
Wx/Nav	Change to weather channel	Save the selection
SQ Up/ Down	Squelch level up/down	
Chan Up/Dn	Change Channel #	Repeat Key function
Distress	Call up Distress Menu	Make Distress Call

#### Soft Key

Watch	DW or Triwatch	All scan
Exit	Cancel selection/ Back 1 level	

### A.2 Top Side Key

Power	Key lock / unlock	Power on/ off the radio
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### A.3 Right Side Key


Vol up/down	Volume up/down	
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### A.4 Left Side Key

Distress	Call up Distress Menu	Make Distress Call
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### A.5 Handmike Key

Key	Function
16	Jump to Channel 16
Hi/Lo	Toggle the Tx power from Hi to Lo or vice versa
Up / Down	Channel UP/DOWN and navigate the menu item selection

 **ATIS Hi**  
**Tri** **16**  
**Tx**  
**Int** **A x**  
**Distress**  
**45°11'1234N**  
**102°23'3121S**  
**12:00pm**  
**Exit** | **Enter**

## B. DIRECT KEY OPERATION

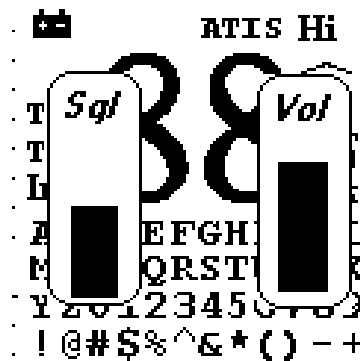
### B.1 Power ON/OFF

Press and hold the Power key for over 3 sec, the unit will power on.

The unit will start with Normal mode.

- display the splash screen info stored at EEPROM for 2sec
- recall the last channel # , TX power settings and operational mode
- Go to Channel 16, Tx Power be Hi
- Display the position and time if GPS data available

### B.2 Volume Control



Press volume up/ down to adjust the volume level. A volume sub-menu will appear when press. And timeout after 5 sec.

### B.3 Squelch

Press Sql up/ down to adjust the squelch level. A sql sub-menu will appear when press. And timeout after 5 sec.

### B.4 Hi/Lo Tx Power

Press the Hi/Lo key will toggle the Tx power from Hi to Lo or vice versa. The corresponding Hi/Lo icon will turn ON on the LCD.

Some of the channel has been limited to be low power only or high power only. Thus, the software need to check against the channel setting stored in the EEPROM

If the operation request is denied, warning beep tone ON for 2 sec.

For some channel is allowed to over-rule the restriction temporary such as CH 13 & 67. Press and hold the PTT key and the Hi/Lo key to switch the Tx power to Hi power temporarily until the either key is released.

### ***B.5 16 Channel***

Jump to either Channel 16 directly by pressing the 16 Key. Toggle between Channel 16 at High Power. Press 16 key again will go back to last channel. (channel before enter 16 mode )

16 key also can use to cancel all mode and switch to CH 16 HI power mode independent the current Hi/Lo setting.

It will quit the menu mode and jump to CH16 directly when pressed.

### ***B.6 BAND***

Switch the operational channel band [USA, International & Canada ] in the setup menu, see C3 for detail.

Please refer to the EEPROM channel table for detail. The corresponding icon will turn on as indication.

### ***B.7 Scan***

In normal mode, long press the right soft key will act as Scan key function.

This is the function to scan for broadcasting channel. When available channel detected, the receiver will stop at that channel and continue to search when that transmission ceased.

There are 2 Scan mode available – ALL Scan; 3 CH Scan.

During the SCAN modes :

Press Up/Down key ( CH knob clockwise/anti-clockwise ) will change the scan direction.

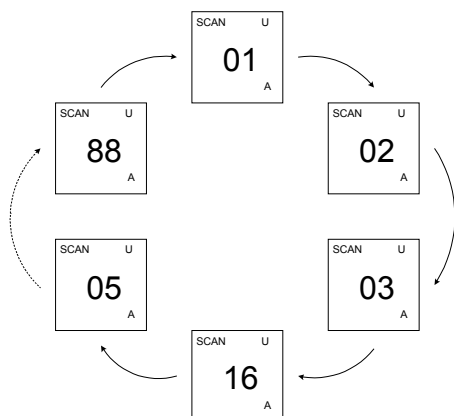
Press SCAN key again will terminate the scan operation and stop at the last used channel.

Press EXIT key will also terminate the scan function and state at the last used channel

WATCH or H/L key will be no function and sound an error beep if pressed.

### All Scan

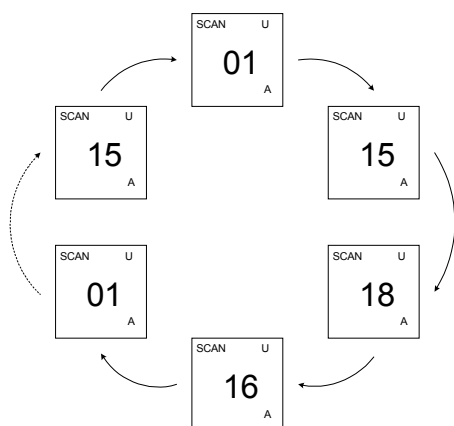
In All Scan mode, all channels in the channel set are scanned in sequences in repeat cycle.



During the all scan, CH 16 will be visit for at least 2s a time.

### 3CH SCAN

In 3CH mode, when long press the SCAN key, it will enter 3 CH mode, only the 3CH and CH16 will be scan.



No function at Menu and DSC mode. Error Beep

Press any other keys will send error Beep

To quit the SCAN mode, press the following keys :

- SCAN key state at the searched channel
- EXIT key to state at last used channel
- PTT go to tuned channel at Tx mode
- DISTRESS go to DISTRESS mode



Press any other keys will send error Beep

## **B.8 Watch**

### *Dual Watch*

Short Press Watch key to activate the DUAL WATCH mode. Monitor the current channel and Ch 16 in cycle. Icon “DUAL” will be turn ON.

Weather Alert is also activate automatically.

Current Channel - CH 16 – Current Channel – CH 16 –Current Channel -...

### *Tri Watch*

When select in the setup Menu. Short Press Watch key to activate the TRI WATCH mode instead. Monitor the current channel, Ch 9 and Ch 16 in cycle. Icon “TRI” will be turn ON.

Weather Alert is also activate automatically.

Current Channel - CH 9 - CH 16 – Current Channel – CH 9 - CH 16 –Current Channel -...

## **B.9 CHANNEL UP/DOWN**

Under non-menu mode, the Channel key knob ( up/down keys ) are used as Channel adjustment. The channel advance to previous or next listed channel # as every key stroke. The channel sequences should follow the band ( U,I, C or Wx ) or memory list.

For UP/DOWN key style, pressing the key over 3sec will advance the channel automatically in 5 channel/sec.

Under menu mode, the key function will be switched to setting up / down function.

## **B.10 Enter**

Under the menu mode, the right soft key will act as the enter key. When enter the menu mode, push the will act as Enter key to confirm the selection and store up the setting.

When in non-menu mode, ( while DIM key option is off ), it will call up the DIMMER control function as describe on B.11

While DIM key option is off, it will be no action when key knob is pushed under normal model.

### **B.11 Setup MENU**

To activate the setup menu, press and hold the Hi/Lo/MENU key over 3 sec. The detail setup menu operation, refer to the MENU operation paragraph.

### **B.12 DISTRESS**

Under jeopardy condition, Distress call should be transmitted. Press the DISTRESS key will activate the DISTRESS menu and enable DISTRESS call to be send out. Detail DISTRESS menu and associated operation refer to the DISTRESS Operation paragraph.

### **B.13 Navigation Mode**

Short press the NAV key will enter the Navigation Mode, Bearing, Distance and cross track error from the last select Way Point will display on the screen. If no WP is set, it will go to WP select page mode.

During Nav Mode:

Up/Down – It will go to WP select page mode.

PTT – return to normal mode and TX.

EXIT – return to normal mode

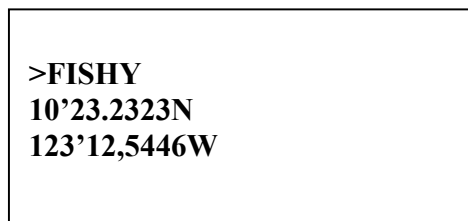
16/9 – return to normal mode and go to 16/9

NAV – go to Plotter mode

GO – Reset the cross track error (XTE)

Other key – error beep

### **B.14 WP Select Mode**



The screenshot shows a rectangular box representing a screen. Inside the box, the text is as follows:  
>FISHY  
10°23.2323N  
123°12,5446W

The screen is divided into two part, the left is the pointed WP information. The right is the selection Menu.

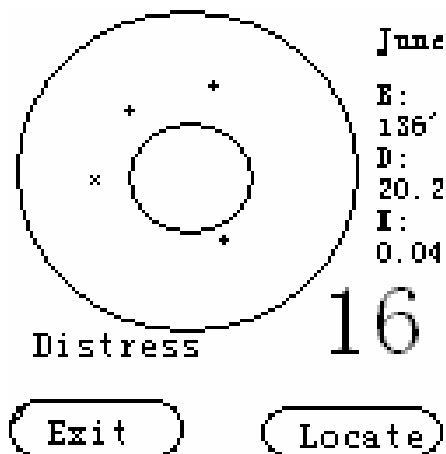
During WP Select Mode:

Up/Down – Select the WP.

Enter – Choose the current WP and return to Navigation Mode.

Other key – Return toe Navigation Mode and act same as Navigation Mode.

## B.15 Plotter Mode



During plotter Mode:

Up/Down – It will cycle and highlight the buddy in the surround .

Left/ right – It will zoom in/out the circle to see more/less area.

PTT – return to normal mode and TX.

EXIT – return to normal mode

Locate – actively transmit self location to other.

16/9 – return to normal mode and go to 16/9

NAV – go to normal mode

Other key – error beep

## B.16 PTT

Press the PTT key will start transmission. It also quit all menu mode when PTT key pressed. Ack beep will be sound before Tx. There is a 5-minute timer that shuts down the transmission in case of a stuck key. Error beep is emitted 10 sec before the time out is triggered. Any PTT release and press again reset the timer over again.

## B.17 Exit

In most cases, the left soft key will act as exit key. The Exit key to cancel last selection or change without saving. It allows step back one level on menu mode. It cancels DSC Distress calls & auto-retransmission of DISTRESS calls.

Press 16 key at menu mode to quit that mode same as EXIT function

## **B.18 3CH Mode**

When short press the 3CH key in normal mode, it will enter 3CH mode and go to CH1. If there is no 3CH is stored, error beep will sound and remain in normal mode.

When short press the 3CH key in 3CH mode, it will go as:  
CH1 -> CH2 -> CH3 -> CH1.

If only 1 3CH is stored, error beep will sound and remain in CH1.  
If CH3 is not stored, the CH3 will be skipped.

When long press the 3CH key, it will bring up a menu for stored/delete the current channel as 3CH. If all 3 3CH is stored, error beep and warning message will be sounded and display.

When in 3CH mode:

- 16CH key will function as normal and leave 3CH mode.
- channel up/down key will function as normal and leave 3CH mode.
- Batt key will function as normal and leave 3CH mode.
- Scan key will function as 3CH Scan.



**ERROR MESSAGE IF NO FAV. CHANNELS.**

**Notes :****BEEP TONE :**

Error Beep ( Beep 1 for Nav ) : 3-beep error tone with 60ms ON @512Hz, then 20ms OFF for 3 cycles. Sound out for any error operation. The tone freq can be read out from EEPROM

ACK Beep ( Beep 2 for Nav ) : 100ms ON @ 1024Hz then OFF. Sound out when any valid key pressed or new mode / screen page entered. Tone freq can be read out from EEPROM

ALARM Beep ( Beep 3 for Nav ) : 6 beep alarm warning tones followed by a 2 sec pause for DSC Distress or Urgency category received calls or serious alarm warnings. Warnings can never be disabled in the MENU screen and are cancelled by any keypress or after a 2-min. duration. 300ms ON @ 512Hz then 100ms OFF between each tone burst. Read out tone freq from EEPROM.

RINGER Beep ( Beep 4 for Nav ) : Alert the user of an incoming DSC call. 60ms 1024Hz, then 60ms 512Hz then 20ms OFF. Cycle goes on until the timeout cycle is reached or a key is pressed.

## C. SPECIAL FUNCTION OPERATION

### C.1 SETUP MENU

Press the DSC / MENU key to enter radio set-up mode. This allows the following functions to be accessed. Scroll down the list and press ENTER. To exit the Menu mode or sub-mode press 16 or EXIT.

Menu	Buddy List		
	Way Point	List	
		Setting	Bearing
			Distance
	SAME	List	
	Local/Dist	Local	
		Dist	
	Backlight		
	Contrast		
	GPS/Time	POS DISPLAY	
		TIME DISPLAY	
		TIME OFFSET	
		TIME FORMAT	
		COG/SOG	
	Radio Setup	Band	
		CH Name	
		Ring Volume	
		Beep Volume	
		Watch Mode	
	Reset		
	Exit		

- **BUDDY LIST** - Selects the Buddy List Entry routine to enter Names and MMSID's for frequently called DSC stations. Up to 20 names could be stored.
- **WP List** - Select the WP List Entry can enter names and LL position for a WP. Up to 500 WP can be stored.
- **SAME List** – Select the SAME List can enter/activated the SAME code, up to 10 SAME code can be stored.
- **LOCAL/DST** – “OFF” allows normal receive sensitivity. “ON” eliminates receiver noise, but degrades receiver sensitivity. The LOCAL icon is displayed in LCD.
- **BACKLIGHT** - Set the backlight level, total 8 level be available.
- **CONTRAST** - Selects display contrast setting: 1-4 levels.
- **GPS/TIME** - define the display POS and Time format, Offset and COG/SOG display..
- **RADIO SETUP**- There are 6 items could be user customized – Band, CH Name, Ring Tone Volume, Beep Volume , Internal Speaker on/off and NMEA.
- **RESET** - recall ex-factory setting
- **EXIT** - quit the menu

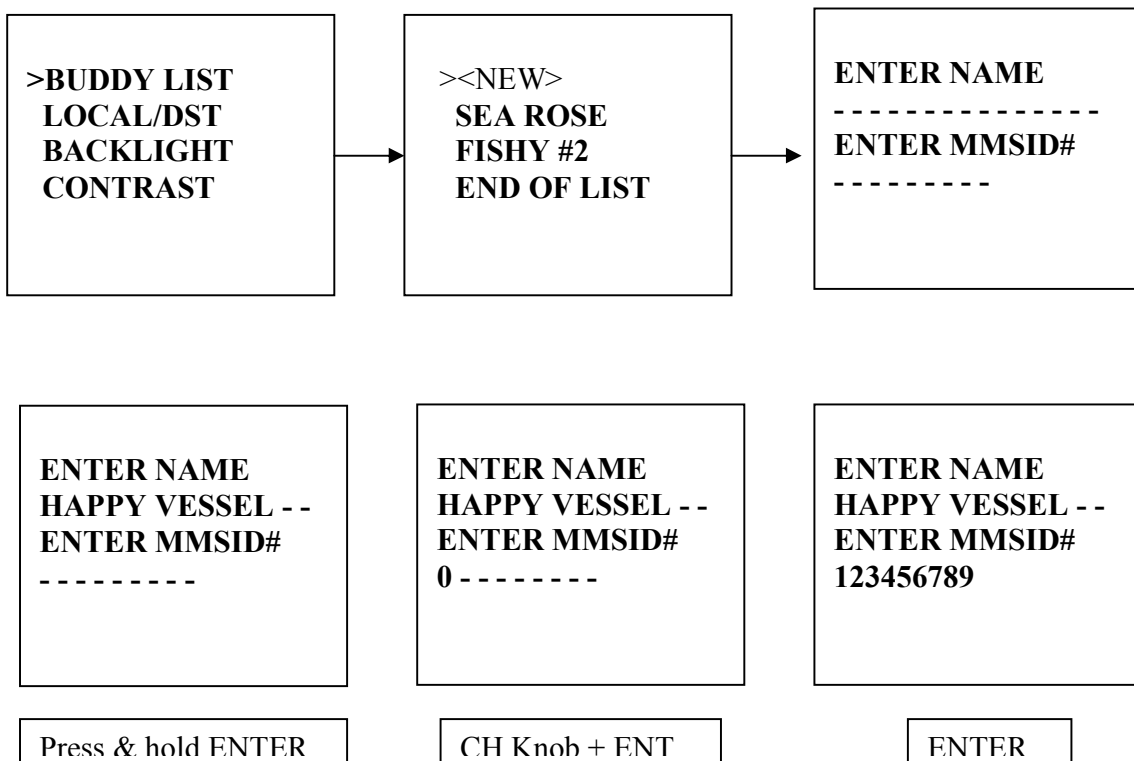


## BUDDY LIST

The Buddy List can store up to 20 entries with Name and MMSID#. User can add, edit or delete the record from the list through this submenu.

### Adding an Entry

- Select Buddy List from the MENU
- Select first line <NEW> for adding entry
- Entry page prompt up to allow enter Name and MMSID. 1<sup>st</sup> digit of NAME be underscored
- Use CH Knob to pick up the desired character and push ENT to confirm. Then shift right to 2<sup>nd</sup> digit
- Push and hold the ENT over 3sec. to finish the NAME entry or fill up to max. 16 character. Then the MMSID# 1<sup>st</sup> digit will be underscored.
- Same as Name entry using CH Knob to key in the digit ( only 0 –9 will be chosen at this stage ). All 9 digits should be entered to finish the entry, push and hold CH knob will no effect to terminate the entry
- Prefix 00 will treat as Coast Station
- Once 9 digit be entered, a new page prompt in to ask for confirmation to save.
- Then go back to Buddy List page no matter Save or Cancel
- Press EXIT will terminate the process without saving go back to Buddy list page





**16**

**HAPPY VESSEL**  
**123456789**  
**>SAVE**  
**CANCEL**

**16**

**><NEW>**  
**SEA ROSE**  
**FISHY #2**  
**HAPPY VESSEL**

**Edit Existing Entry**

- Pick up the one from Buddy List for edit
- Page prompt up for Edit or Delete. Choose EDIT
- Full record screen shown up with 1<sup>st</sup> character of NAME be underscored for edit
- Use CH Knob to alter the character or ENT to shift to next or skip.
- To edit the ID# should shift the cursor to end of NAME Entry and push ENT to 1<sup>st</sup> digit of ID
- Press and hold ENT to terminate the edit back to Buddy list

**<NEW>**  
**SEA ROSE**  
**>FISHY #2**  
**HAPPY VESSEL**

**FISHY#2**  
**>EDIT**  
**DELETE**

**NAME**  
**FISHY#2 - - - - -**  
**MMSID**  
**123456789**

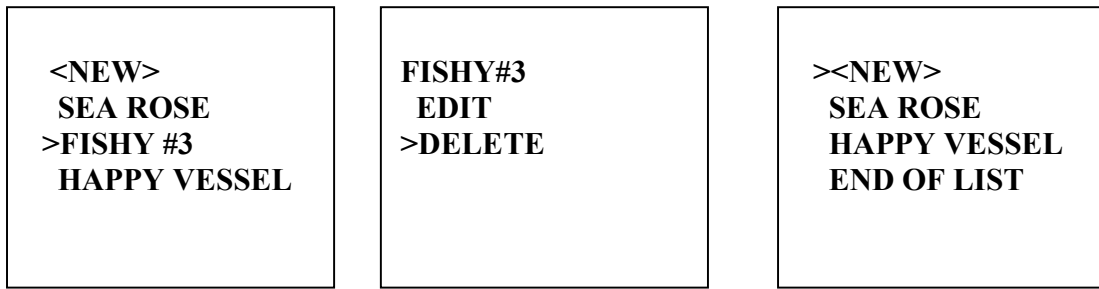
**NAME**  
**FISHY#3- - - - -**  
**MMSID**  
**123657894**

**FISHY#3**  
**123657894**  
**>SAVE**  
**CANCEL**

**><NEW>**  
**SEA ROSE**  
**FISHY #3**  
**HAPPY VESSEL**

**To Delete the Entry**

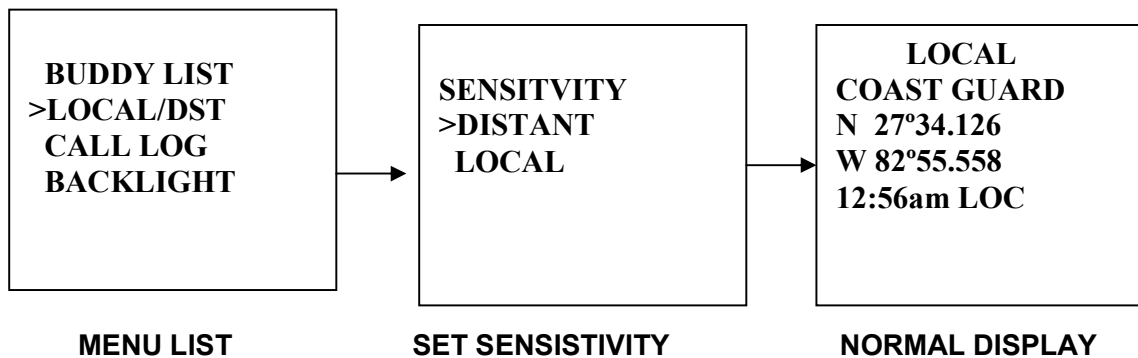
- select the one want to be deleted from the list
- select the Delete option
- press and hold the ENT to confirm the delete action
- the record will be removed and go back to Buddy List page



Press & hold ENTER

*LOCAL/DISTANT*

To set the Receiver to LOCAL to eliminate noise & use the radio locally, select the LOCAL/DST from the MENU list and press ENTER. The value is stored when screen is exited. The LOCAL icon turns ON in the LCD. Default is DISTANT



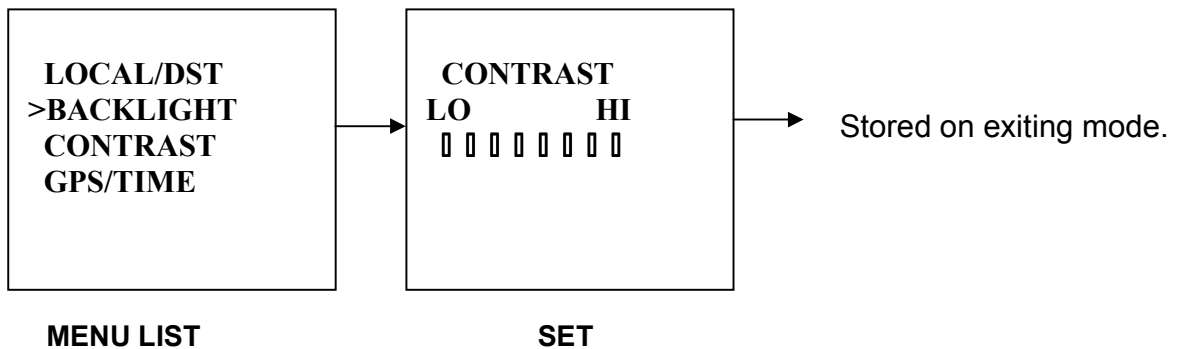
MENU LIST

SET SENSISTIVITY

NORMAL DISPLAY

*BACKLIGHT Adjustment*

Select BACKLIGHT and press ENTER. The BACKLIGHT has 8 levels for the LCD. The higher numbers produce a brighter backlight. The value is stored when screen is exited.

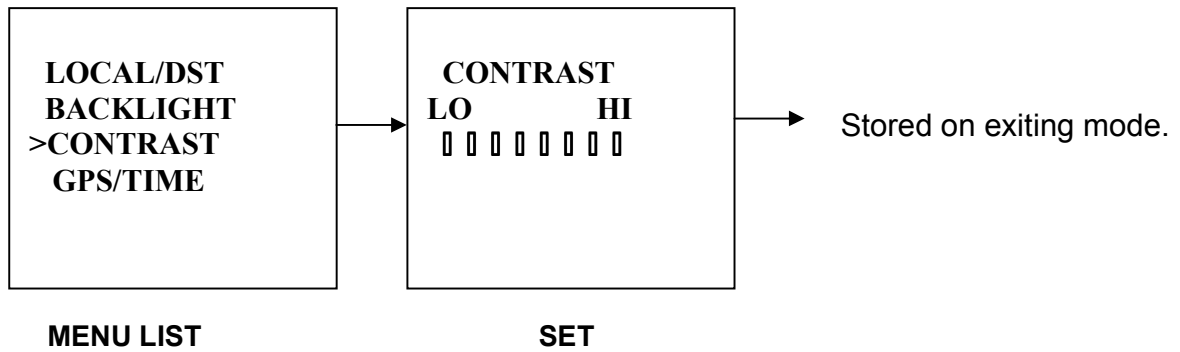


MENU LIST

SET

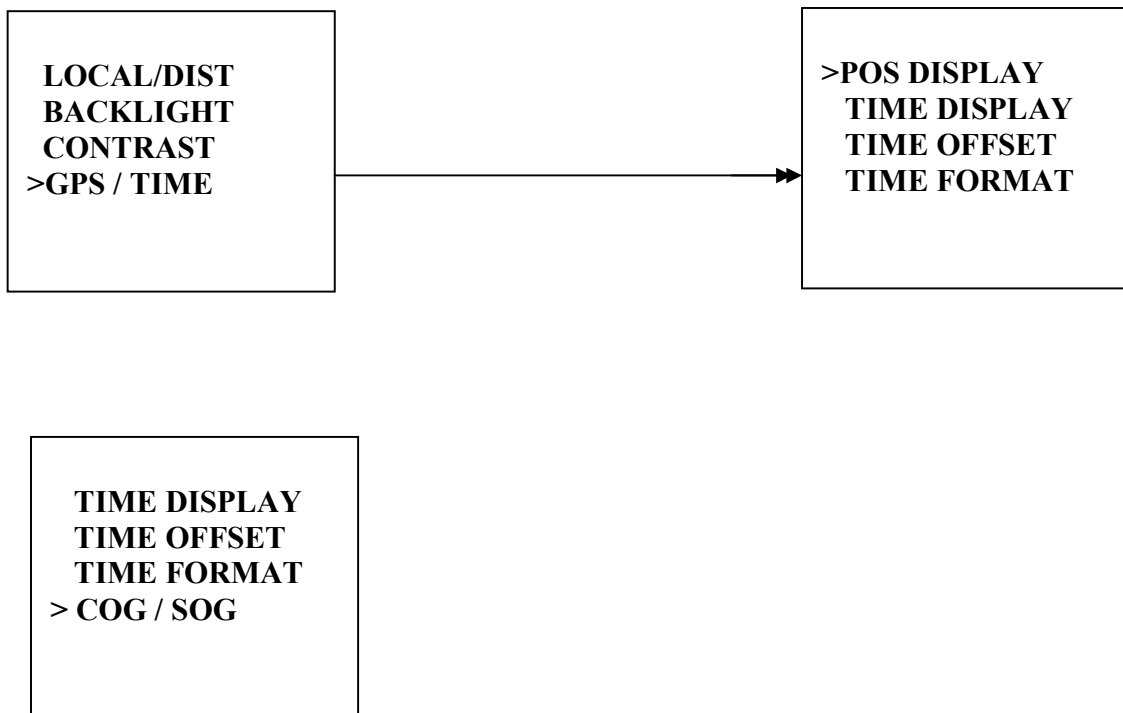
### CONTRAST Adjustment

Select CONTRAST and press ENTER. The Contrast has 4 levels for the LCD. The higher numbers produce a darker LCD. The contrast value is stored when screen is exited.

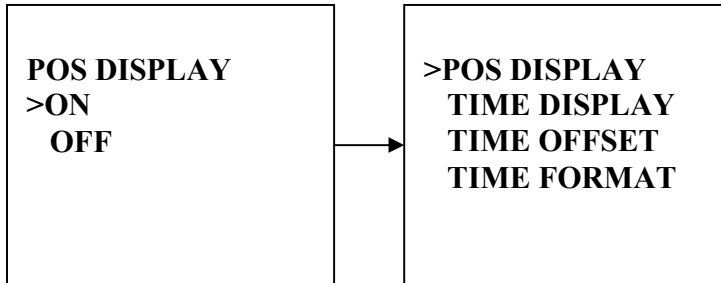


### GPS / TIME

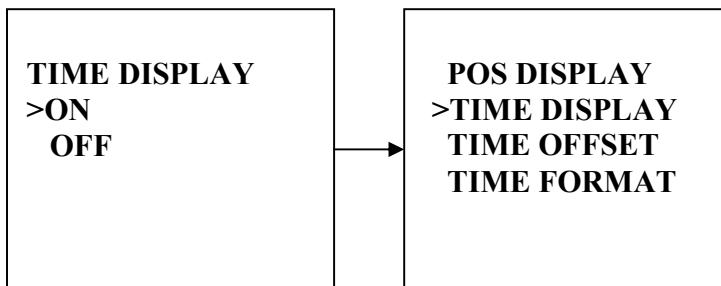
Enable POSition Display



POSITION DISPLAY to determine the position data displayed on the normal mode or not

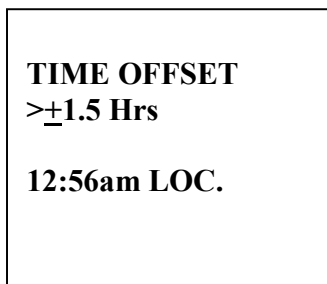


TIME DISPLAY to turn on / off the time display at normal mode

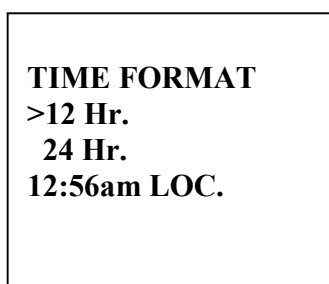


TIME OFFSET to set the add/subtract value from UTC time to equal to local time.  
When offset value is added, the time will be displayed as LOC instead of UTC

First to set the offset direction + or – then value in ½ hr. step. The update result will be displayed immediately to assist adjustment

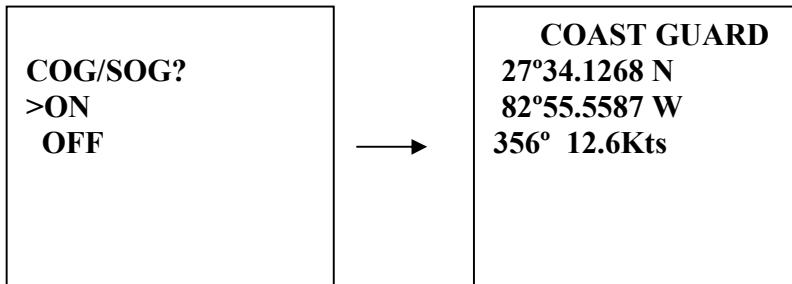


TIME FORMAT setting indicate whether the time is displayed in 12 hr or 24 hr format.



COG/SOG to enable COG (Course over Ground ) and SOG ( Speed over Ground ) displayed on normal mode.

If the TIME DISPLAY is turn ON, COG/SOG will be turn off automatically irrespective this setting due to it share the same bottom line for display.

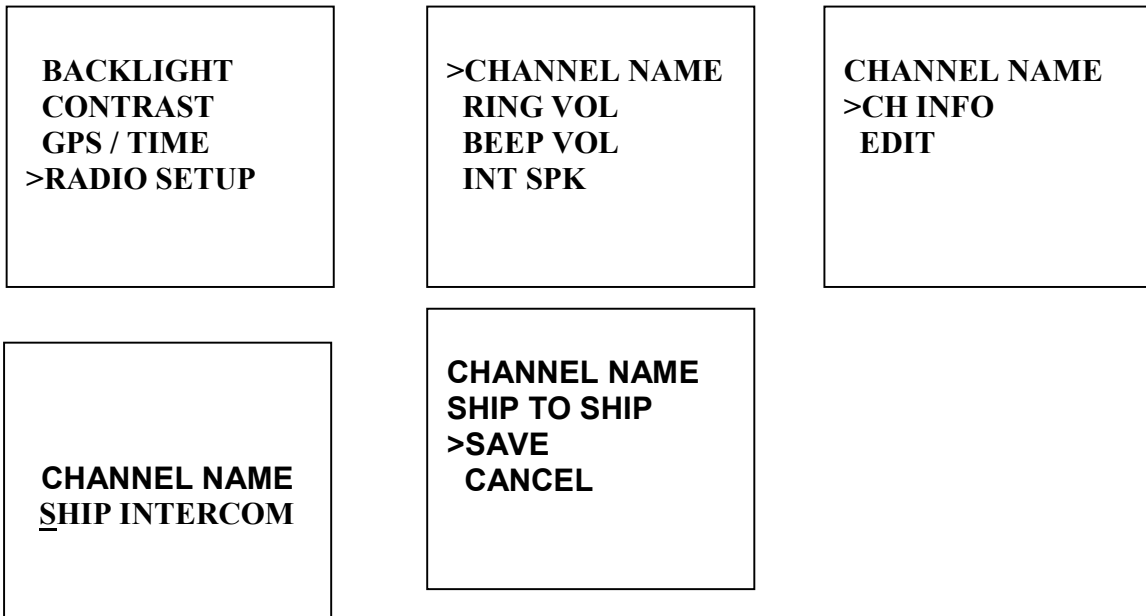


## **RADIO SETUP**

Under Radio Setup submenu, there are 4 items could be alter settings.

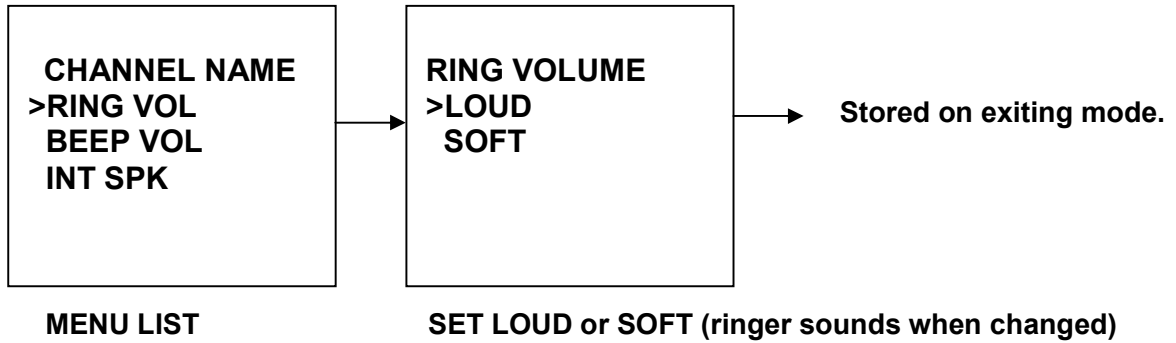
### *CHANNEL NAME*

To set the channel name be ON or blank on the first line. Max. 12 characters could be set for Channel Name. It also allow to edit the channel name, same as Buddy List edit procedures.



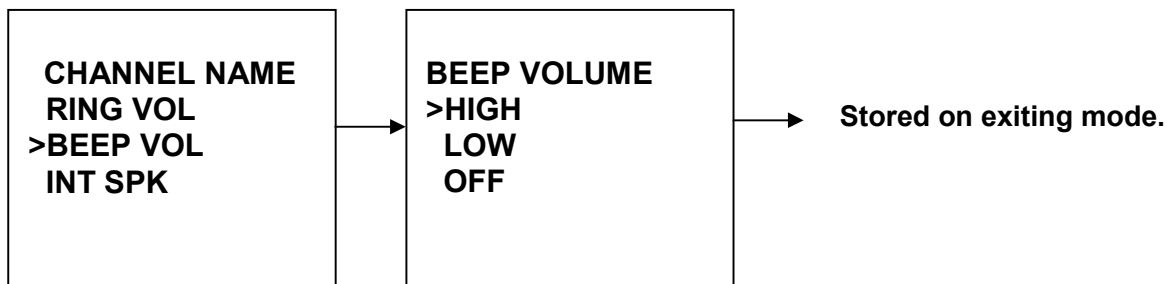
### *RING VOLUME ADJUSTMENT*

Select the RING VOLUME by ENT and then display the option – LOUD and SOFT as ringer tone setting. Press ENT key again to confirm the changes.



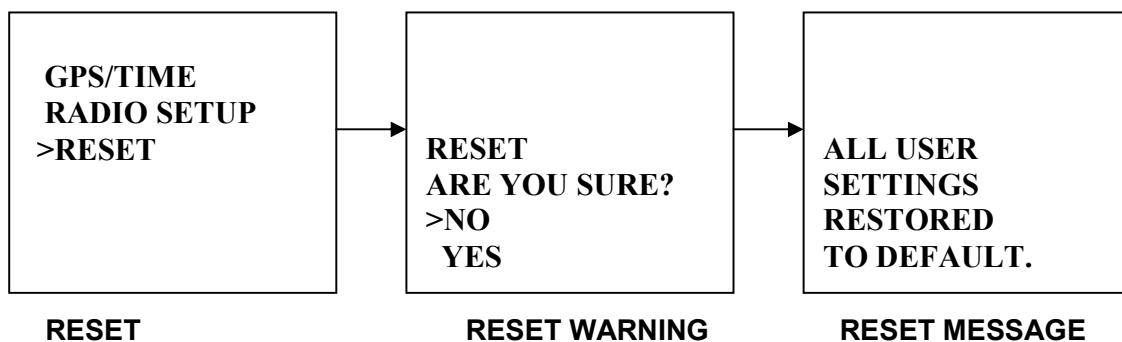
### *BEEP VOLUME ADJUSTMENT*

To alter the key beep tone volume level. Select the BEEP VOL by ENT and then display the option – HIGH, LOW & OFF as key beep setting. Press ENT key again to confirm the changes.



### *RESET*

All features are returned to factory settings, except USER MMSI and BUDDY LIST.

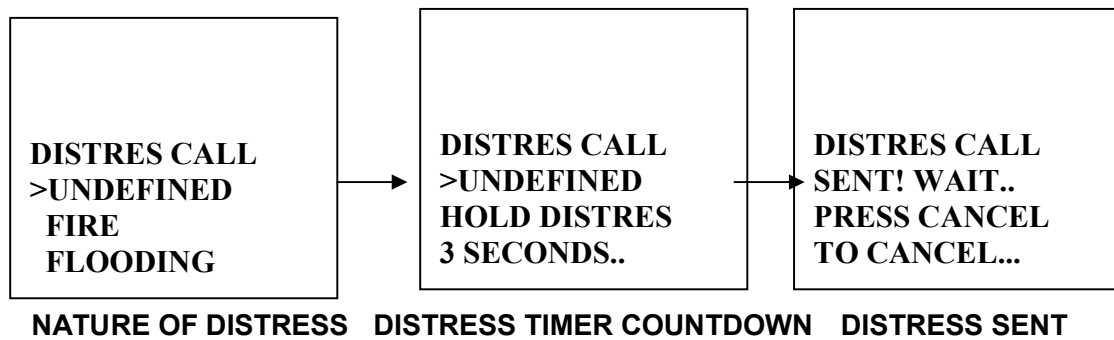


## C.4 DISTRESS Operation

### SENDING AND RECEIVING DISTRESS CALLS

Sending a Distress call is initiated with this 3-step procedure. Your MMSID number must be entered before DSC will function.

1. Open the RED Distress cover door.
2. Press and release the DISTRESS key. If time permits, use the SELECT knob to select the Nature of Distress. A cursor moves down the list. Press the ENTER knob to select. Otherwise, hold the red button until the DISTRESS is sent (about 3 seconds). You may release the red button anytime to reset the countdown timer.



The various NATURE OF DISTRESS categories are:

- UNDESIGNATED
- FIRE
- FLOODING
- COLLISION
- GROUNDING
- LISTING
- SINKING
- ADRIFT
- ADBANDONING
- PIRACY
- MAN IN WATER
- EPRIB
- EXIT?

3. After the Nature of Distress is entered, continuously HOLD DOWN the key for 3 seconds to advance the DSC Emergency transmission cycle. A count down timer is sequenced in the LCD and BEEP2 is emitted every second. Releasing the key stops & resets the timer.

To cancel this mode, press EXIT or the CH16 key.

The Distress call is now sent 5 times continuously with the preamble dot pattern in front of each string. The whole display FLASHES and BEEPS very loudly. If Channel 70 is BUSY, the radio transmits anyway and the cycle is repeated randomly every 3.5 – 4.5 minutes until an acknowledgement is received or the mode is manually cancelled.

The Tx and Hi annunciators turn ON during Tx on CH70. After Tx the channel reverts to CH16 and high power. Your transceiver is automatically set to Channel 16 in order to listen for, and respond to, voice replies from SAR authorities or other vessels that may have received your distress call. The Automatic re-transmission mode is entered. The alarm sounds every 2 minutes to remind you that a distress message is active. Press EXIT to cancel this mode. This is the only key that functions at this time.

Re-transmissions of DSC distress calls are canceled automatically when a DSC acknowledgment is received from an authorized SAR coast station, or canceled manually by you.

#### *SENDING A CALL TO CANCEL A TRANSMITTED DISTRESS CALL*

From the Distress Cancellation Screen, cancel the Distress Call by pressing the Channel/Select key. The text area of the display reconfigures to have the user confirm the distress cancellation. Select "YES" and push distress key to transmit a call to cancel the transmitted distress call. Select "NO" and press Channel/Select button to abort cancellation. Once cancellation has been confirmed, the radio returns to normal VHF operation on channel 16 with high power selected.

#### *RECEIVING DISTRESS CALLS*

The NC392/363 receives distress messages sent by another vessel and/or acknowledgments (ACK) sent by a coast station to another vessel in distress. In such cases you should maintain a listening watch on channel 16 and standby to lend assistance. There is no automatically reply/relay to distress or ACK or relay DSC calls.

#### *RECEIVING A DISTRESS CALL FROM ANOTHER VESSEL*

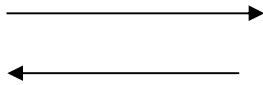
When a distress call is received, the NC392/363 automatically tunes to channel 16, and the Distress Alarm Tone sounds. Pressing any key disables the alarm. When position data and time is included within the signal, it is displayed in the Text Area of the LCD. If invalid GPS or Time data is received, the Lat/Lon position shows '9' in all digits and the time shows all '8's. The 2 alternating pages of data are recorded in the DISTRESS CALL LOG. Make VOICE contact on CH16.

<b>DISTRESS!</b> <b>ID123456789</b> <b>99°99. X</b> <b>999°99. Y</b>
---

**ALTERNATING**

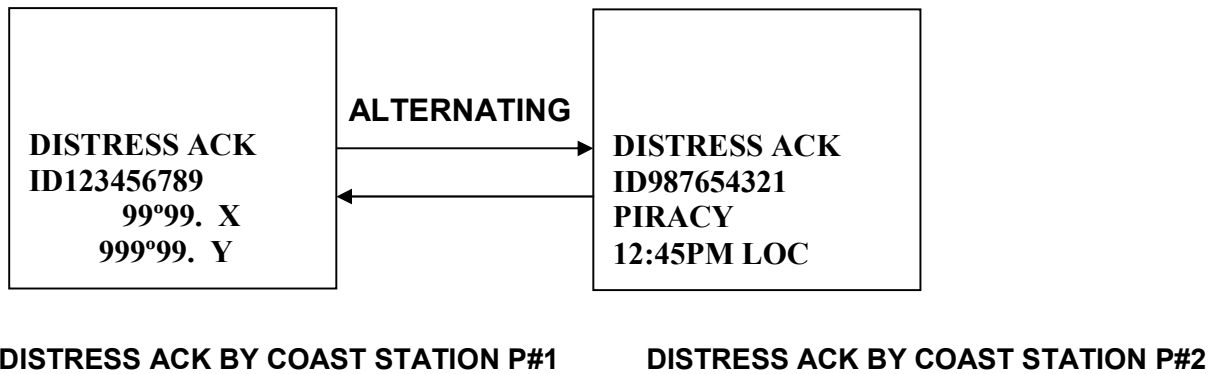
<b>DISTRESS!</b> <b>ID123456789</b> <b>PIRACY</b> <b>12:45PM LOC</b>
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**RECEIVING A DISTRESS ACK SENT FROM A COAST STATION**

When a DISTRESS ACK is received from a Coast Station (Coast Guard or Search & Rescue), an alarm sounds and the following screen appears in the display. The NAME/ID on page#1 is the ID of the vessel sending the message. The NAME/ID on page#2 is the ID of the Vessel in Distress. Maintain a listening watch on CH16 and standby to lend assistance.



**RECEIVING A DISTRESS RELAY SENT BY ANOTHER VESSEL**

When a DISTRESS RELAY is received from another Vessel, an alarm sounds and the following screen appears in the display. The screen displays the local time of distress, the MMSID of the vessel sending the relay message and Lat/Lon coordinates of the vessel in distress. The NAME/ID on page#1 is the ID of the vessel sending the message. The NAME/ID on page#2 is the ID of the Vessel in Distress. Your vessel does not re-send a distress relay message. Maintain a listening watch on CH16 and standby to lend assistance.

