

Marine Communications or The (E)TLAs



The (E)TLAs

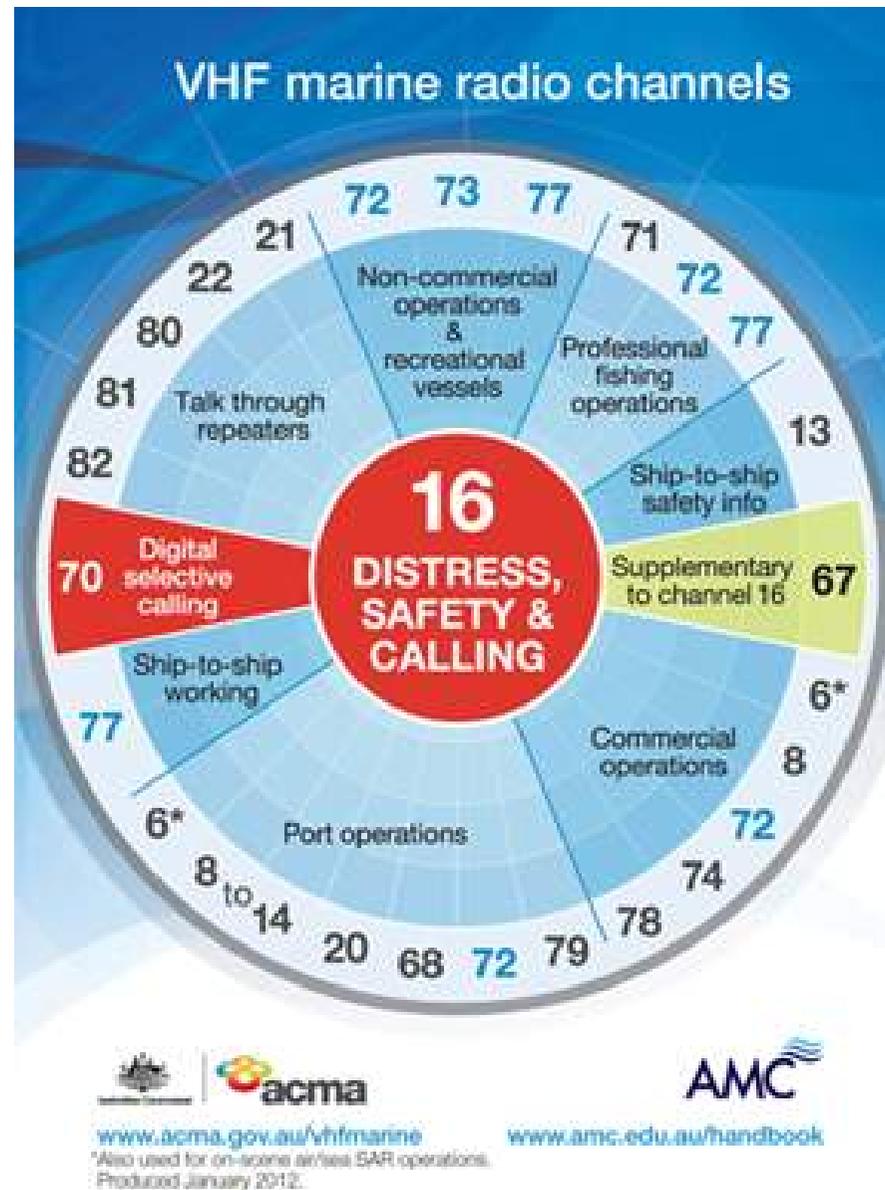
- VHF
 - Very High Frequency
- HF
 - High Frequency
- MMSI
 - Maritime Mobile Service Identity
- DSC
 - Digital Selective Calling
- AIS
 - Automatic Identification System
- SART
 - Search and Rescue Transceiver

VHF

- Most common
- Hand held or fixed installation
- Low cost - \$250-\$1000 depending on features, \$130-\$500 Handheld
- 25W Power – 5W Handheld
- Line of site
- Frequency modulation
 - Very clear
 - Shorter range
- DSC capable
- Carrier for AIS



VHF



HF

- Long range – worldwide
- Expensive - \$3,500-\$5,000 depending on features
- 125W Power
- Amplitude modulation – various modes
- DSC Capable
- Limited listening stations
- Designated safety frequencies
- Weather fax
- Scheduled automated weather
- Can be used for low cost, low bandwidth data – Pactor modem



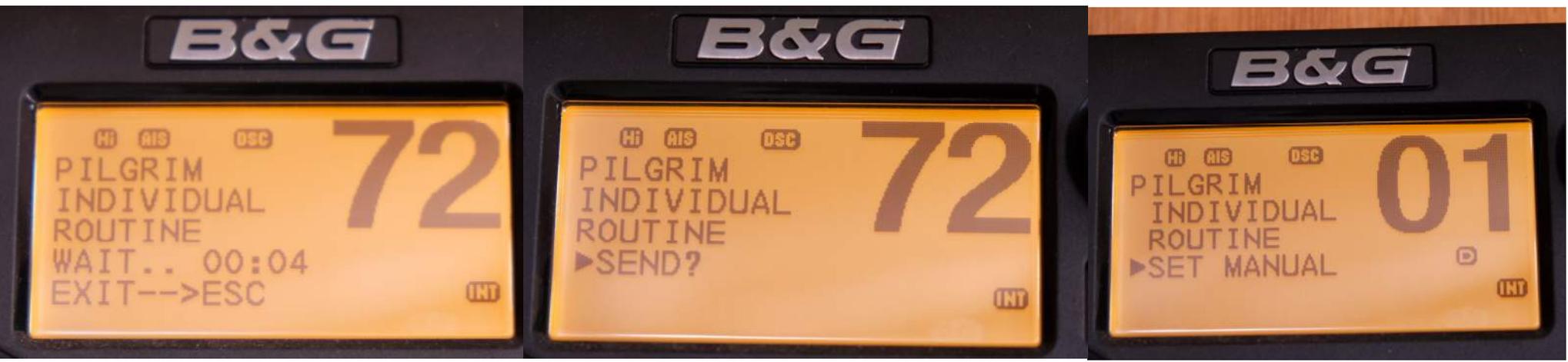
MMSI

- Unique to each station
- HF and VHF share same MMSI
- Portables may require a different MMSI
- Required to be programmed into DSC and AIS
- Generally can not be re-programmed easily

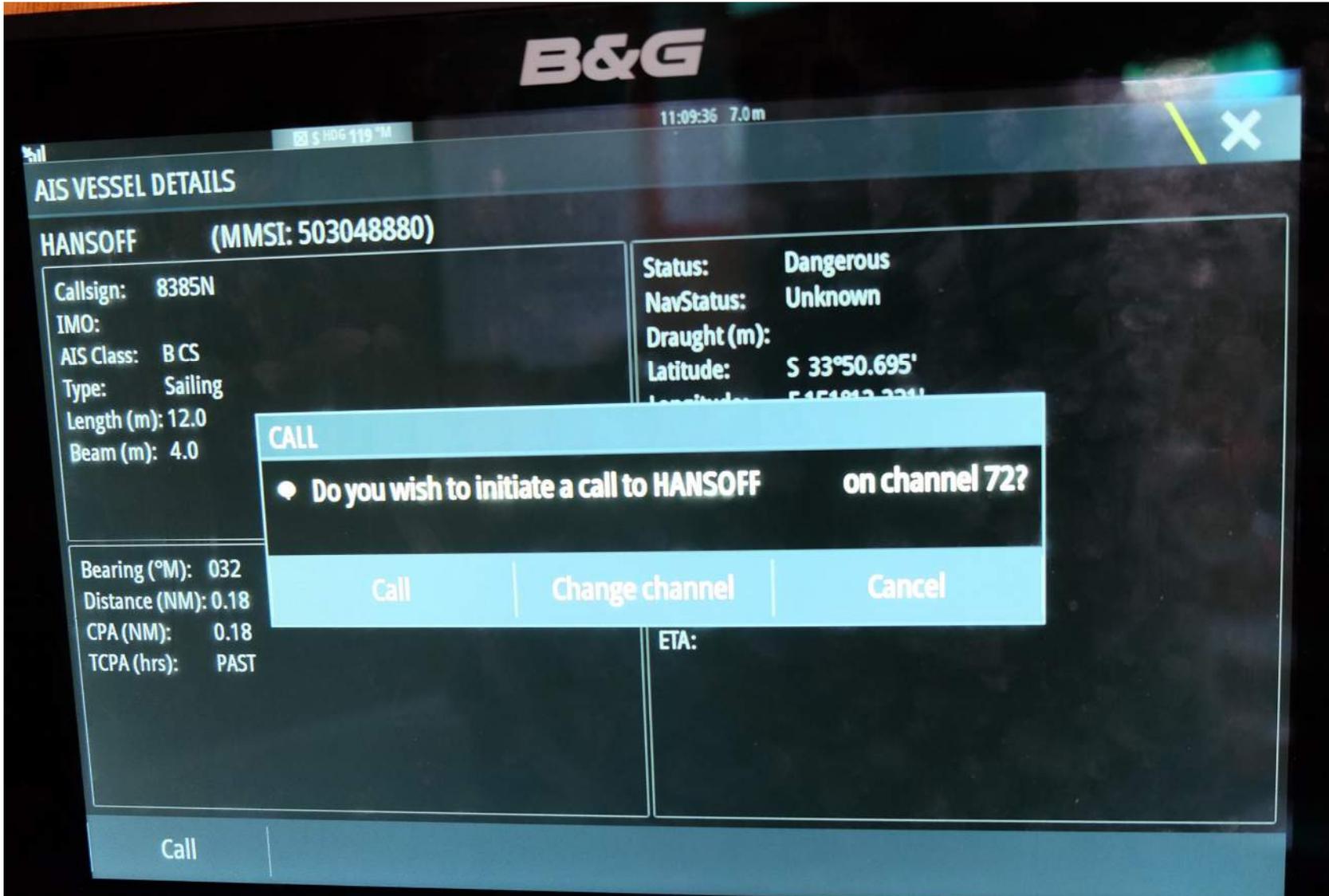
DSC

- Transmitted on VHF70
- HF frequency must be selected
- Does what it says on the box
 - You need to know the receive MMSI
 - You need to know how to acknowledge/receive
 - Allows you to digitally select who you would like to talk to
 - You will still talk on Broadcast channel
- Distress signals
 - Goes to all stations in range
 - Sends position with distress signal

DSC



DSC



AIS

- Class A – Commercial Ships over 300GT
- Class B – Others vessels
- Receive only - under \$300
 - They don't know where you are
- Transceivers - \$600-\$1000
- Transmitted on VHF 87B/88B
- Split VHF – Use a good splitter, preferably powered
- Dedicated antennae – Compromised horizon

AIS – Text Based

NAME List 1 / 68

GOLDEN GROUVE	335° _m	0.17nM
HANSOFF	033° _m	0.18nM
PEMULWUY	193° _m	0.43nM
503374300	244° _m	0.50nM
503344800	084° _m	0.57nM

B&G

10:38:09 7.2m

VESSELS

Status - All Messages

Name	Distance Bearing	CPA TCPA	Type Status
HANSOFF	0.19 NM 033 °M	0.10 NM PAST	AIS danger
503345500	0.28 NM 344 °M	0.28 NM PAST	AIS safe
503344800	0.45 NM 090 °M	0.36 NM 0:01:19	AIS safe
LOUISE SAUVAGE	0.45 NM 234 °M	0.39 NM 0:16:48	AIS safe
SHANE GOULD	0.56 NM 227 °M	0.35 NM PAST	AIS safe
CABARET	0.60 NM 261 °M	0.60 NM PAST	AIS safe
PEMULWUY	0.62 NM 204 °M	139 m PAST	AIS safe

Find Sort Distance View All

AIS – Graphics Based



AIS – Plotter Integrated



SOG

0.0

COG

34

POS

S 33°50'

E 151°13'

DEPTH

7.1

TIME LOC

10:40:

FUEL PORT PORTDIE

34.8

H2O PORT PORTH2O

84.4

AUTOPILOT

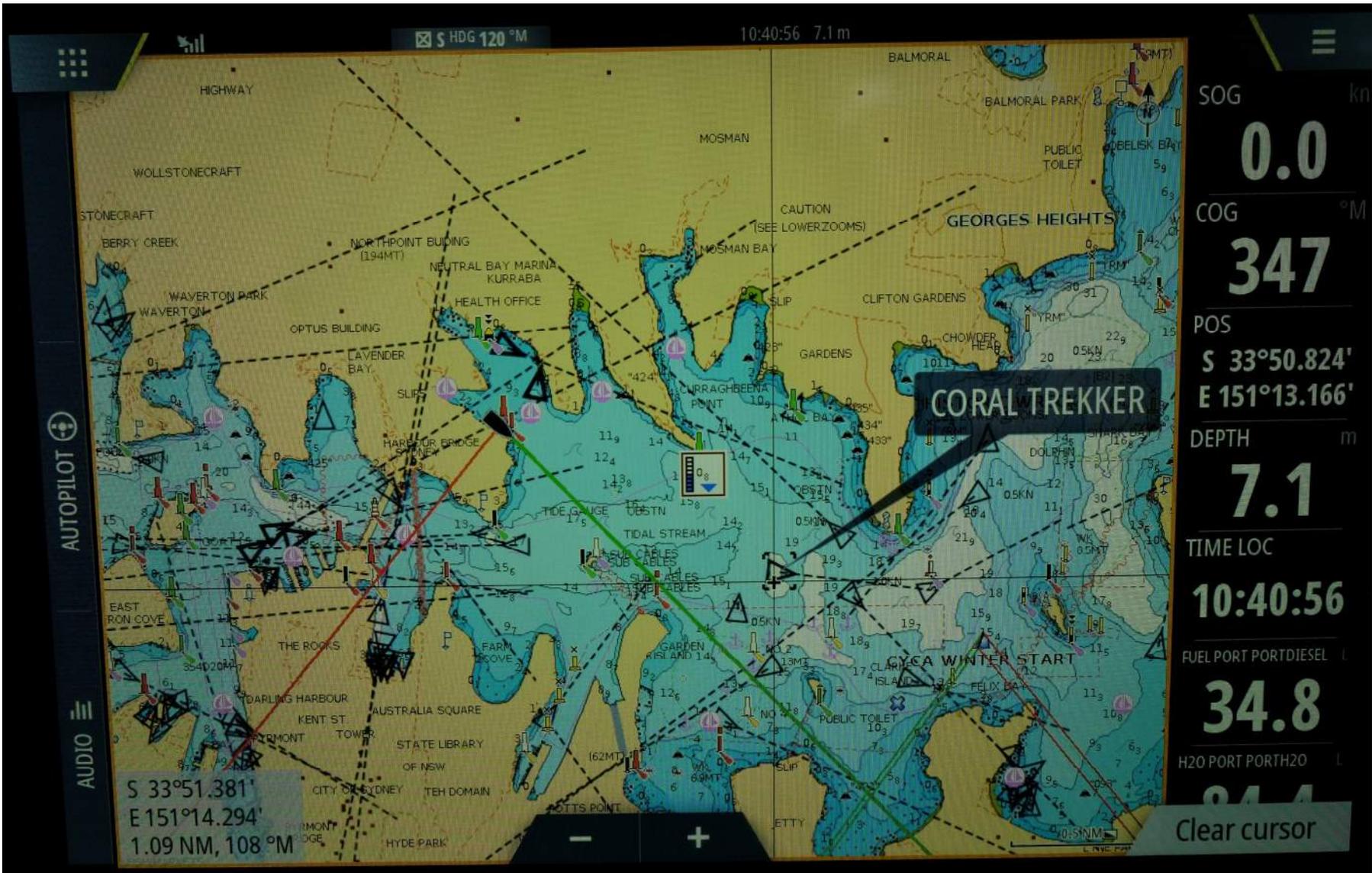
AUDIO

S 33°50.986'
E 151°13.718'
0.49 NM, 097°M

AIS – Plotter Integrated



AIS



AIS

AIS VESSEL DETAILS ✕

BRITISH REGARD (MMSI: 235108532)

Callsign: 2IC15	Status: Safe
IMO: 9683063	NavStatus: Under engine
AIS Class: A	Draught (m): 14.2
Type: Tanker	Latitude: S 33°59.441'
Length (m): 250	Longitude: E 151°13.030'
Beam (m): 44.0	Accuracy: Low
	ROT (°/s): 0.0
	SOG (kn): 4.59
	COG (°M): 298
	Heading (°M): 297
	Destination: BOTANY BAY AUSTRALI
	ETA: 23/09/2018 00:00

Bearing (°M): 168
Distance (NM): 8.62
CPA (NM): 6.64
TCPA (hrs): 1:11:55

Call

AIS

B&G

10:43:12 7.1 m

AIS VESSEL DETAILS

HANSOFF (MMSI: 503048880)

Callsign: 8385N	Status: Dangerous
IMO:	NavStatus: Unknown
AIS Class: B CS	Draught (m):
Type: Sailing	Latitude: S 33°50.694'
Length (m): 12.0	Longitude: E 151°13.324'
Beam (m): 4.0	Accuracy: High (10m)
	ROT (°/s):
	SOG (kn): 0.10
	COG (°M): 260
	Heading (°M):
	Destination:
	ETA:

Bearing (°M): 032
Distance (NM): 0.18
CPA (NM): 0.14
TCPA (hrs): 1:16:07

Call

AIS - Online

The screenshot displays the MarineTraffic AIS Online interface. At the top, the navigation bar includes the MarineTraffic logo, a 'Live Map' button, and dropdown menus for 'Vessels', 'Ports', 'Companies', 'Community', and 'Solutions'. A search bar on the right contains the text 'Vessel, Port, etc.'. The main map area shows a satellite view of Sydney, Australia, with numerous AIS vessel tracks in various colors (blue, green, red, purple) and icons. Labels on the map include 'Mona Vale', 'Incat Crowther', 'John Butler Des...', 'Castle Hill', 'Macquarie Park', 'Parramatta', 'Bankstown', 'Liverpool', 'Nsw Marine', 'Cronulla', and 'Volunteer Marin...'. A sidebar on the left contains navigation icons such as search, zoom, and layers. On the right side, a coordinate box displays the following data: S33°41'24.24, E151°26'56.41, and (-33.6901, 151.4490). A scale bar at the bottom left indicates 10 km and 5 mi. The Leaflet logo is visible in the bottom right corner.

SART

- AIS transmit device
- Small personal device
- Appears on all AIS devices as an MOB

