Our changing relationship with the Oil Industry.

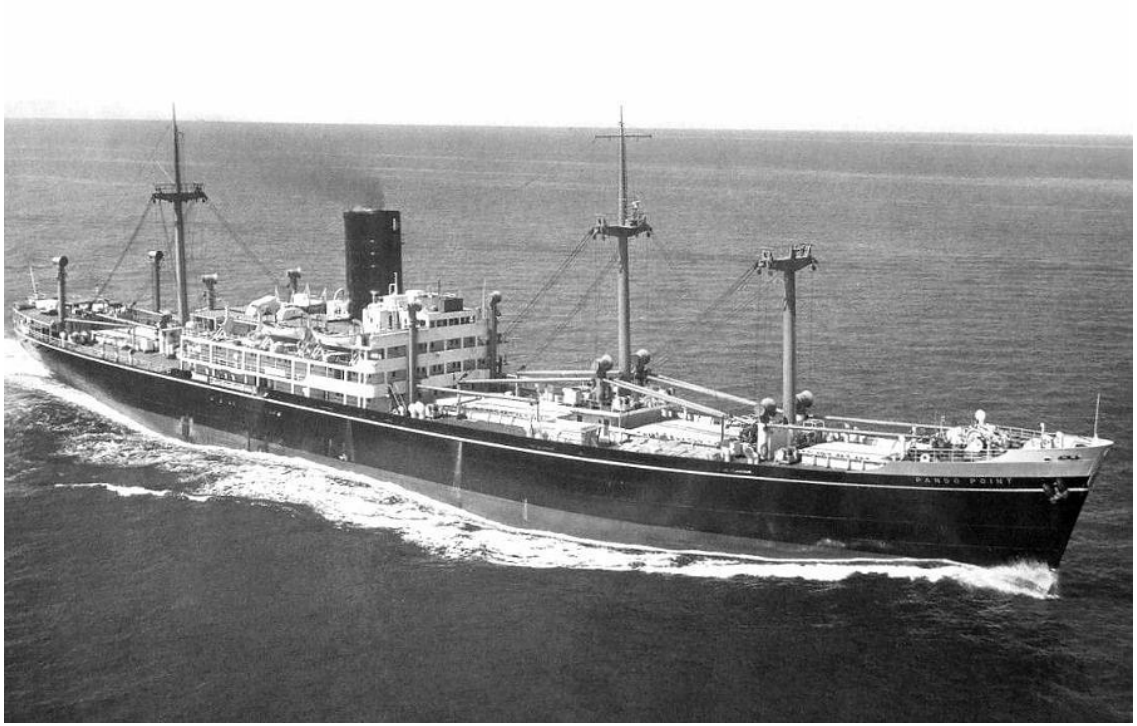
Managing Navigation.

Mark Bull FNI

Independent Marine Consultant

Early career

- Commenced career in 1970 with P&O



End of the seagoing phase

- Came ashore in 1997

Post seagoing career

- 10 years in ship management.
- Moved into P&I as the Loss Prevention Manager at one of the IG Clubs
- Then assisted a new start up ship management company in Germany.
- Since 2012 IMC
  - The last 17 months have been spent almost exclusively conducting navigational assessments of tankers, mostly on time charter to oil majors.


Hog Roast
RG 48K


N 12:35 P
0 mph
9 °F
mi trip
4990 142.1
PARK
1/min x1000
190
260
mph
km/h
1/2
0.0/SET
OK


CAPE NATAL
OCL
P&O
ANL

Regulation 15 - Principles relating to bridge design, design and arrangement of navigational systems and equipment and bridge procedures

Summary

- **Requires owners, naval architects, manufacturers and administrations to ensure compliance with specified ergonomic principles.**
- **Requires owners and masters to ensure that bridge procedures are adopted which take ergonomic criteria into consideration**

Regulation 15

1. *All decisions which are made for the purpose of applying the requirements of regulations 19, 22, 24, 25, 27 and 28 and which affect bridge design, the design and arrangement of navigational systems and equipment on the bridge and bridge procedures* shall be taken with the aim of:*

1.1 *facilitating the tasks to be performed by the bridge team and the pilot in making full appraisal of the situation and in navigating the ship safely under all operational conditions;*

1.2 *promoting effective and safe bridge resource management;*

1.3 *enabling the bridge team and the pilot to have convenient and continuous access to essential information which is presented in a clear and unambiguous manner, using standardized symbols and coding systems for controls and displays;*

1.4 *indicating the operational status of automated functions and integrated components, systems and/or sub-systems;*

1.5 *allowing for expeditious, continuous and effective information processing and decision-making by the bridge team and the pilot;*

1.6 *preventing or minimizing excessive or unnecessary work and any conditions or distractions on the bridge which may cause fatigue or interfere with the vigilance of the bridge team and the pilot; and*

1.7 *minimizing the risk of human error and detecting such error if it occurs, through monitoring and alarm systems, in time for the bridge team and the pilot to take appropriate action.*

** Refer to Guidelines on ergonomic criteria for bridge equipment and layout (MSC/Circ.982) and the Performance standards for IBS (resolution MSC.64(67); annex 1); and for INS (resolution MSC.86(70); annex 3).*

MCA Guidance

1. Regulation 15 applies primarily to companies, ship builders and naval architects. Masters and watchkeepers of all vessels are responsible for ensuring the efficient deployment and use of bridge resources in particular noting the requirements of 15.1.6.

2. The Regulation addresses the principles to be followed in the design and layout of ships' bridges and the establishment of bridge procedures using ergonomic criteria. These criteria are detailed in IMO MSC/Circ.982. Where ships are fitted with Integrated Bridge Systems (IBS) or Integrated Navigational Systems (INS) the appropriate IMO Performance Standards should be referred to.
(For Performance Standards see also Regulation 18).

3. The Regulation specifically covers decisions which are made for the purpose of applying the requirements of Regulations 19 (Navigational Equipment), 22 (Bridge Visibility), 24 (Heading/Track control systems), 25 (Operation of main source of Electrical Power and Steering Gear), 27 (Nautical Charts and Publications) and 28

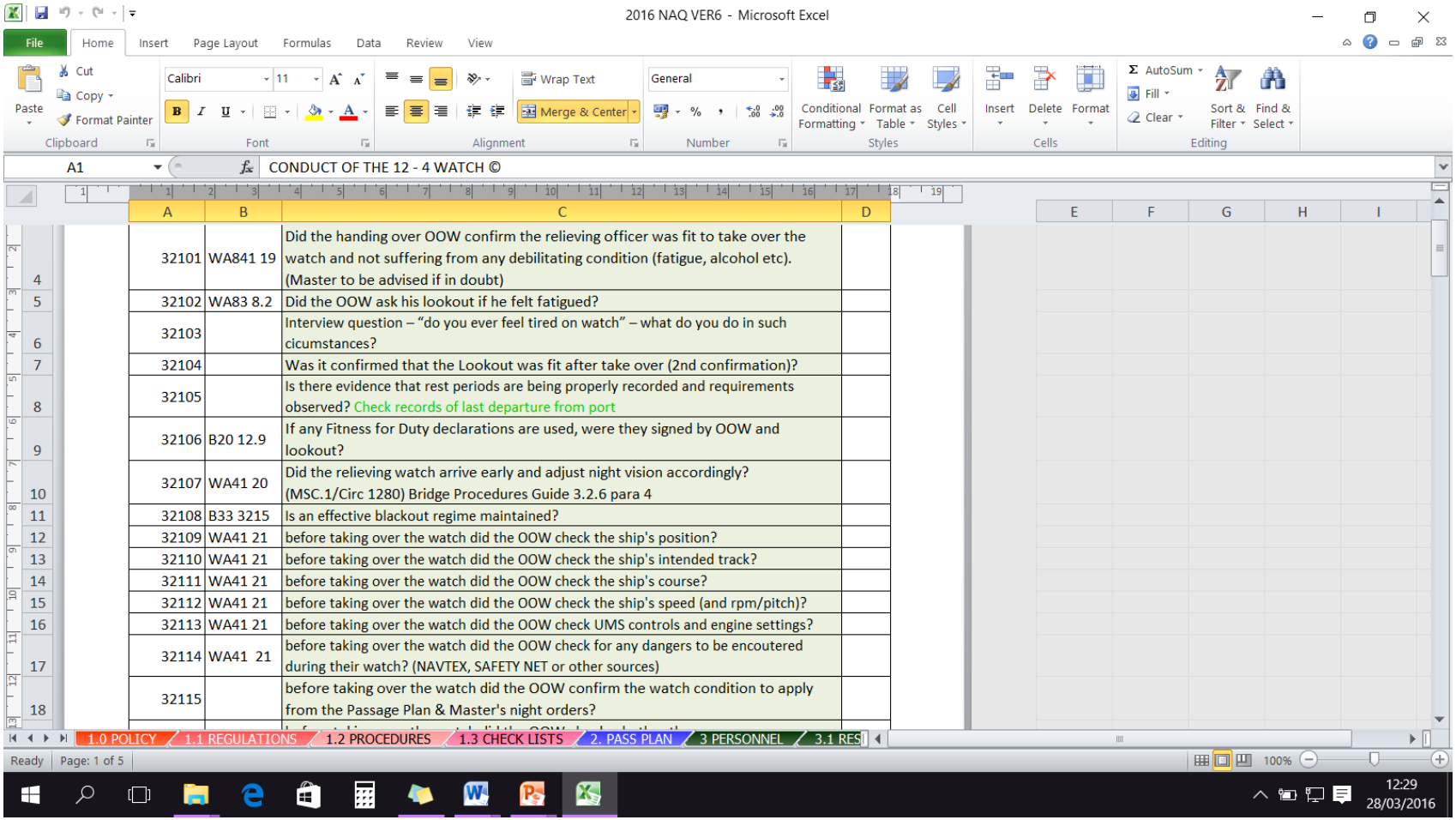
MANAGING NAVIGATION

- Who requires such audits?
- At present the only body requiring these audits to be carried out is OCIMF through their TMSA initiative. (and then only recommended)(go far beyond the VIQ
- Occasionally audits have been recommended by MAIB a following an incident. OVIT)
- Occasional audits have been requested by P&I Clubs, again following incidents or poor claims records.

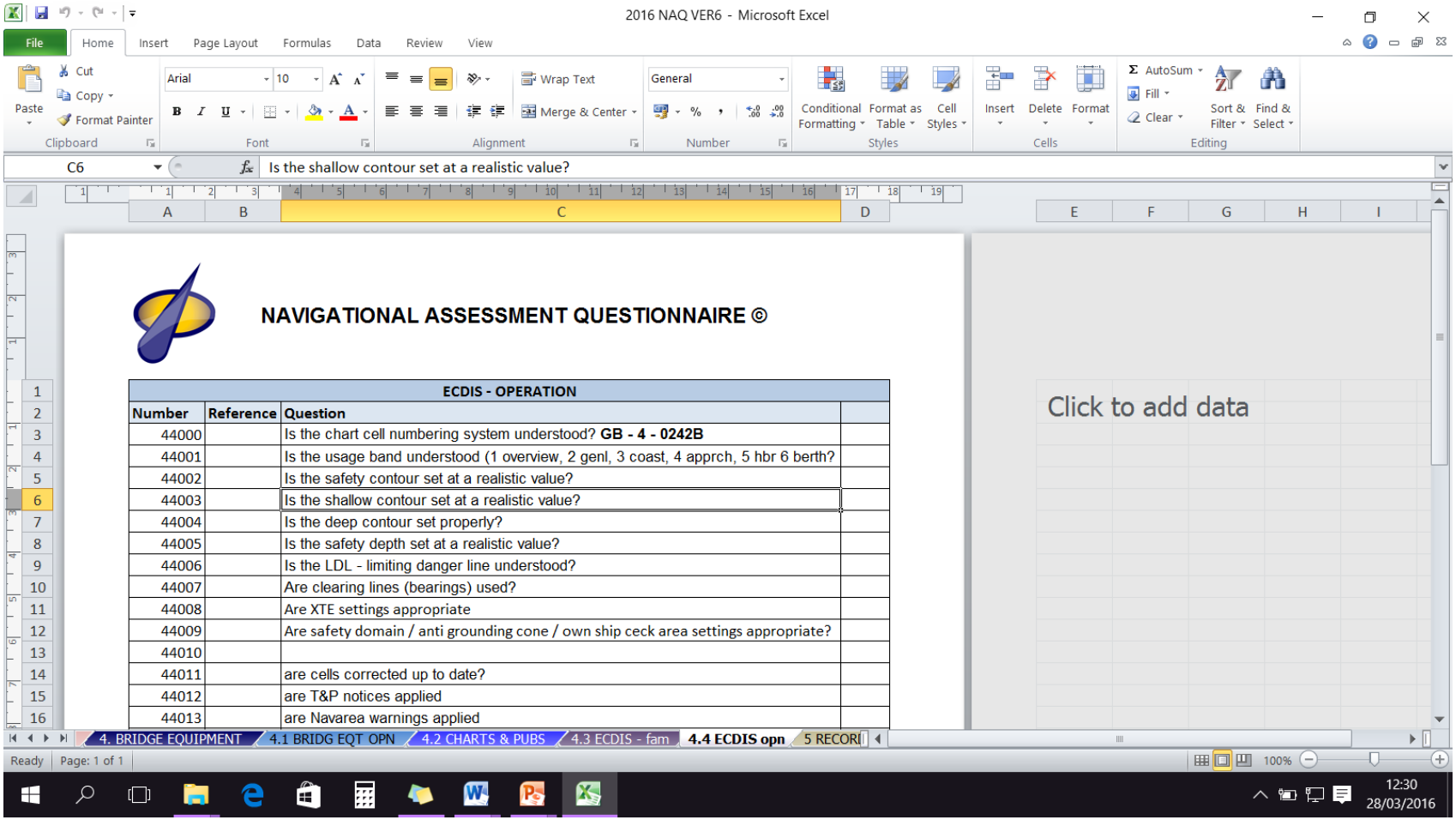
MANAGING NAVIGATION

- What is the standard?
- There is none – unfortunately.
- Who is qualified?
- Again there is no standard.
- I know of several former inspectors, auditors and surveyors who do this work but there is little communication between us.

MANAGING NAVIGATION



MANAGING NAVIGATION revised BPG5



ECDIS - OPERATION		
Number	Reference	Question
44000		Is the chart cell numbering system understood? **GB - 4 - 0242B**
44001		Is the usage band understood (1 overview, 2 genl, 3 coast, 4 apprch, 5 hbr 6 berth?
44002		Is the safety contour set at a realistic value?
44003		Is the shallow contour set at a realistic value?
44004		Is the deep contour set properly?
44005		Is the safety depth set at a realistic value?
44006		Is the LDL - limiting danger line understood?
44007		Are clearing lines (bearings) used?
44008		Are XTE settings appropriate
44009		Are safety domain / anti grounding cone / own ship ceck area settings appropriate?
44010		
44011		are cells corrected up to date?
44012		are T&P notices applied
44013		are Navarea warnings applied

MANAGING NAVIGATION

- The reason behind such a complex approach is two fold;
- firstly to encompass all the statutory compliance elements and
- secondly to be able to provide a reference to the company about what is not being done onboard; (nobody likes being given a Non Conformity without a specific reference where it originates from).
- The numbering allows a database to be constructed if ever one should be desired, and hence trends identified.

MANAGING NAVIGATION

- Why do these need to be carried out whilst the vessel is underway.
- For 2 main reasons;
- firstly there are many activities which at face value are minor (and thus are not recorded in any way) but collectively are very important and
- secondly, for a static audit based in port only, it is too easy to prepare for the questions.
- Observing people performing the procedures however, shows them soon reverting to form.

MANAGING NAVIGATION

- However, since I started this almost exclusively from 2014, something came along to fundamentally change my approach……
- …….widespread ECDIS implementation

MANAGING NAVIGATION

- ECDIS has now been widely implemented across the world's fleet. It has replaced the paper chart which has been in existence for 200 years.
- ECDIS is transforming how we operate today's bridge; but what has not changed:-
- The Sea
- The risks to Safe Navigation
- The catastrophic consequences of a navigational incident.
- The requirement to confirm tankers are safe.

MANAGING NAVIGATION

- As ECDIS is new, very, very few people are fully familiar with its use; this includes vetting inspectors and company superintendents alike – even the regulators.
- Even fewer people who are writing the procedures for Bridge Teams are familiar.
- This situation demands both care and caution.
- It also requires more cooperation on an exchange basis. (what you extract is directly proportional to what you contribute) and we need to help the vetting inspectors!

MANAGING NAVIGATION

- There are things you can do on paper charts that you cannot not do on ECDIS
- There are things you can do on ECDIS that you could not do on paper.
- WYSIWYG
- WYSIWYA
- Using ECDIS properly requires an ECDIS mindset (if we are not careful we will have a Red Flag Act)


A 20
LONDON
FOLKESTONE
A 258
DEAL
A 2
CANTERBURY
LONDON
artprintsforpleasure.com

MANAGING NAVIGATION

Inappropriate use of ECDIS

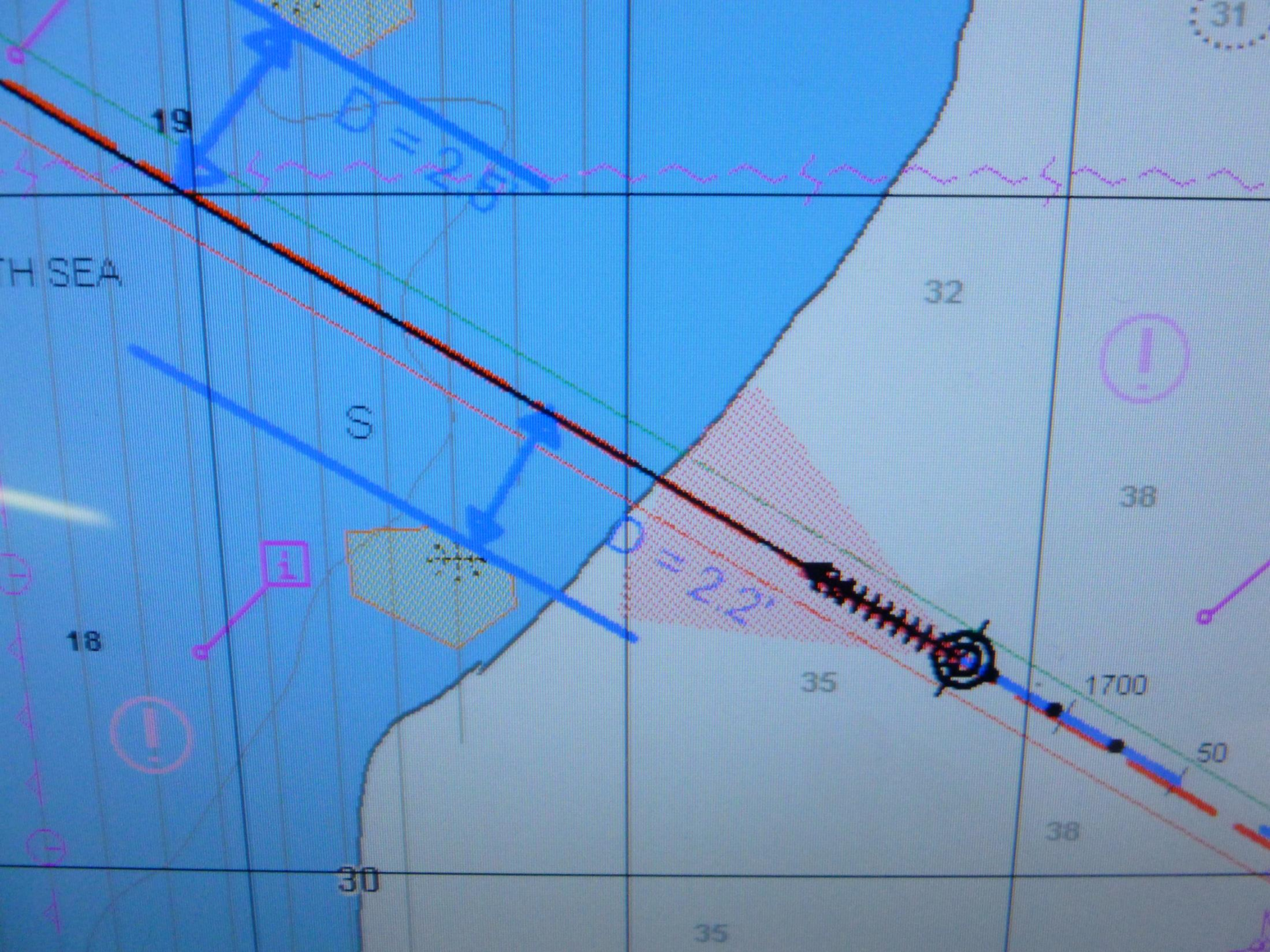
- ALL the ships I visit have the alarm settings incorrectly set with the net result there is a cacophony of alarms (playback from bridge in Singapore Strait). This is normally my first task now on boarding.
- There are numerous officers who misunderstand the plotting of visual fixes on ECDIS or how to use these fixes as the reference system for EPs. (more follows)

MANAGING NAVIGATION

- ECDIS is transforming how we run a bridge today. Gone are the days of running from one part of the bridge to the other – nowadays the correct procedure is to stay in one place and only occasionally move. (Can you imagine an airline pilot standing up).
- The problems though are people are trying to make ECDIS do too much; and many companies are making erroneous instructions to the ships.
- Here are some examples


STN - ATLAS
No.1


SOUNDING BOARD


31
19
32
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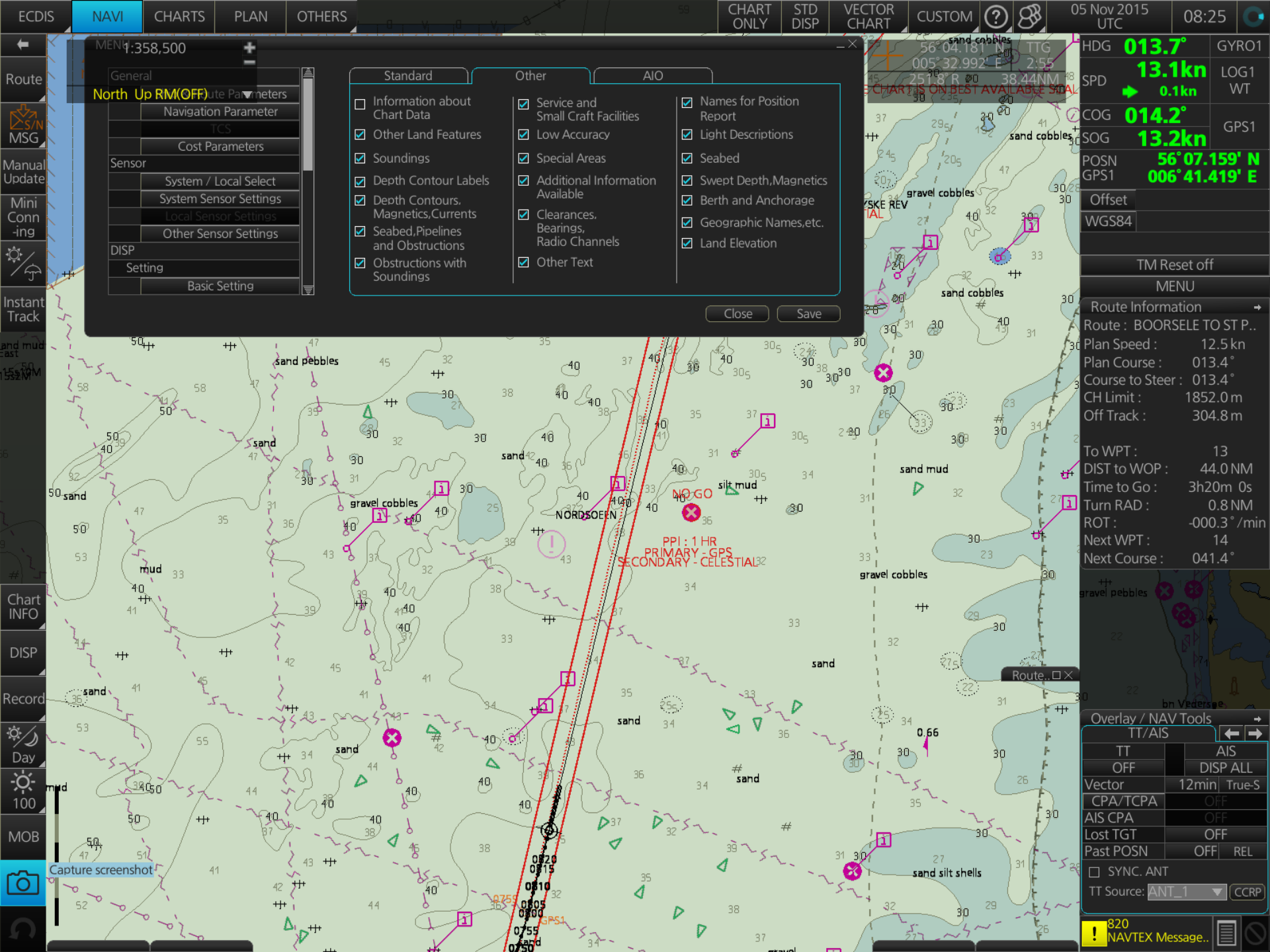
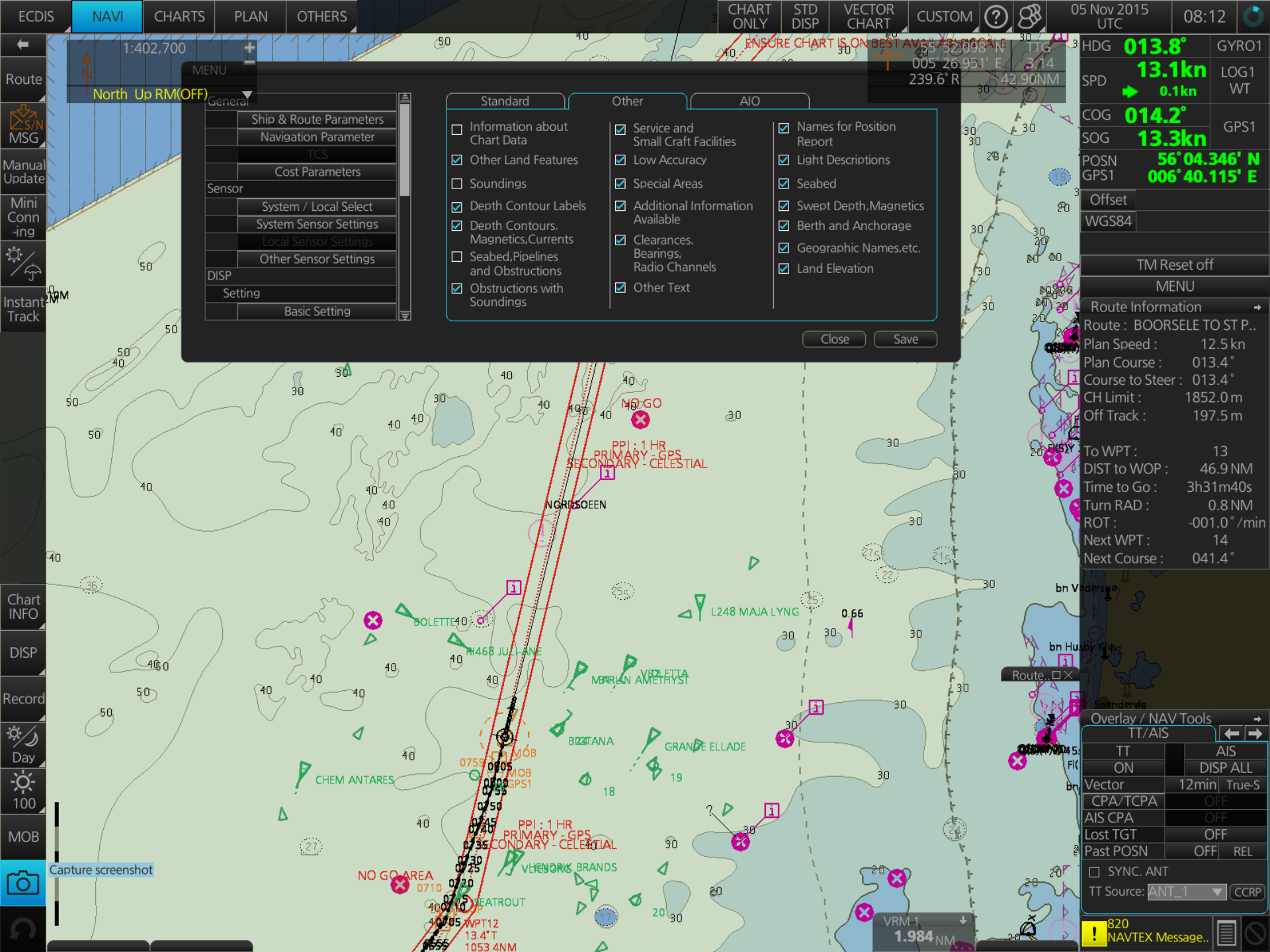
S
38
18
35
1700
50
38
30
35


ECDIS
NAVI
CHARTS
PLAN
OTHERS
CHART ONLY
STD DISP
VECTOR CHART
CUSTOM
05 Nov 2015 UTC
08:25
MENU
1:358,500
General
North Up RM(OFF)
Navigation Parameter
Cost Parameters
Sensor
System / Local Select
System Sensor Settings
Other Sensor Settings
DISP
Setting
Basic Setting
Standard
Other
AIO
Information about Chart Data
Other Land Features
Soundings
Depth Contour Labels
Depth Contours, Magnetics,Currents
Seabed,Pipelines and Obstructions
Obstructions with Soundings
Service and Small Craft Facilities
Low Accuracy
Special Areas
Additional Information Available
Clearances, Bearings, Radio Channels
Other Text
Names for Position Report
Light Descriptions
Seabed
Swept Depth,Magnetics
Berth and Anchorage
Geographic Names,etc.
Land Elevation
Close
Save
HDG 013.7°
GYRO1
SPD 13.1kn
0.1kn
LOG1 WT
COG 014.2°
SOG 13.2kn
GPS1
POSN GPS1 56° 07.159' N 006° 41.419' E
Offset
WGS84
TM Reset off
MENU
Route Information
Route : BOORSELE TO ST P..
Plan Speed : 12.5 kn
Plan Course : 013.4°
Course to Steer : 013.4°
CH Limit : 1852.0 m
Off Track : 304.8 m
To WPT : 13
DIST to WOP : 44.0 NM
Time to Go : 3h20m 0s
Turn RAD : 0.8 NM
ROT : -000.3°/min
Next WPT : 14
Next Course : 041.4°
Route
Overlay / NAV Tools
TT/AIS
TT OFF
AIS DISP ALL
Vector 12min True-S
CPA/TCPA OFF
AIS CPA OFF
Lost TGT OFF
Past POSN OFF REL
SYNC. ANT
TT Source: ANT_1 CCRP
820 NAVTEX Message..
Route
Capture screenshot
Route
Manual Update
Mini Conning
Instant Track
Chart INFO
DISP
Record
Day
100
MOB
sand
gravel cobbles
sand pebbles
mud
sand mud
silt mud
NO GO
NORDSOEEN
PPI : 1 HR
PRIMARY - GPS
SECONDARY - CELESTIAL
sand silt shells
0.66


ECDIS
NAVI
CHARTS
PLAN
OTHERS
CHART ONLY
STD DISP
VECTOR CHART
CUSTOM
05 Nov 2015 UTC
08:12
1:402,700
North Up RM(OFF)
ENSURE CHART IS ON BEST AVAILABLE SCALE
51° 52.098' N
005° 26.951' E
239.6° R
42.90NM
TTG
3:14
MENU
General
Ship & Route Parameters
Navigation Parameter
TCS
Cost Parameters
Sensor
System / Local Select
System Sensor Settings
Local Sensor Settings
Other Sensor Settings
DISP
Setting
Basic Setting
Standard
Other
AIO
Information about Chart Data
Other Land Features
Soundings
Depth Contour Labels
Depth Contours, Magnetics,Currents
Seabed,Pipelines and Obstructions
Obstructions with Soundings
Service and Small Craft Facilities
Low Accuracy
Special Areas
Additional Information Available
Clearances, Bearings, Radio Channels
Other Text
Names for Position Report
Light Descriptions
Seabed
Swept Depth,Magnetics
Berth and Anchorage
Geographic Names,etc.
Land Elevation
Close
Save
HDG 013.8°
GYRO1
SPD 13.1kn
0.1kn
LOG1 WT
COG 014.2°
SOG 13.3kn
GPS1
POSN GPS1 56° 04.346' N 006° 40.115' E
Offset
WGS84
TM Reset off
MENU
Route Information
Route : BOORSELE TO ST P..
Plan Speed : 12.5 kn
Plan Course : 013.4°
Course to Steer : 013.4°
CH Limit : 1852.0 m
Off Track : 197.5 m
To WPT : 13
DIST to WOP : 46.9 NM
Time to Go : 3h31m40s
Turn RAD : 0.8 NM
ROT : -001.0°/min
Next WPT : 14
Next Course : 041.4°
Route
Overlay / NAV Tools
TT/AIS
TT ON
AIS DISP ALL
Vector 12min True-S
CPA/TCPA OFF
AIS CPA OFF
Lost TGT OFF
Past POSN OFF REL
SYNC. ANT
TT Source: ANT_1
CCRP
820 NAVTEX Message..
VRM 1
1.984 NM
NO GO
PPI : 1 HR
PRIMARY - GPS
SECONDARY - CELESTIAL
NORDSOEEN
BOLETTE
L248 MAJA LYNG
0.66
MARIAN AMETHYST
GRANDE ELLADE
CHEM ANTARES
MOB
PPI : 1 HR
PRIMARY - GPS
SECONDARY - CELESTIAL
NO GO AREA
HENDRIK BRANDS
WPT12
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Route
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Capture screenshot
Route
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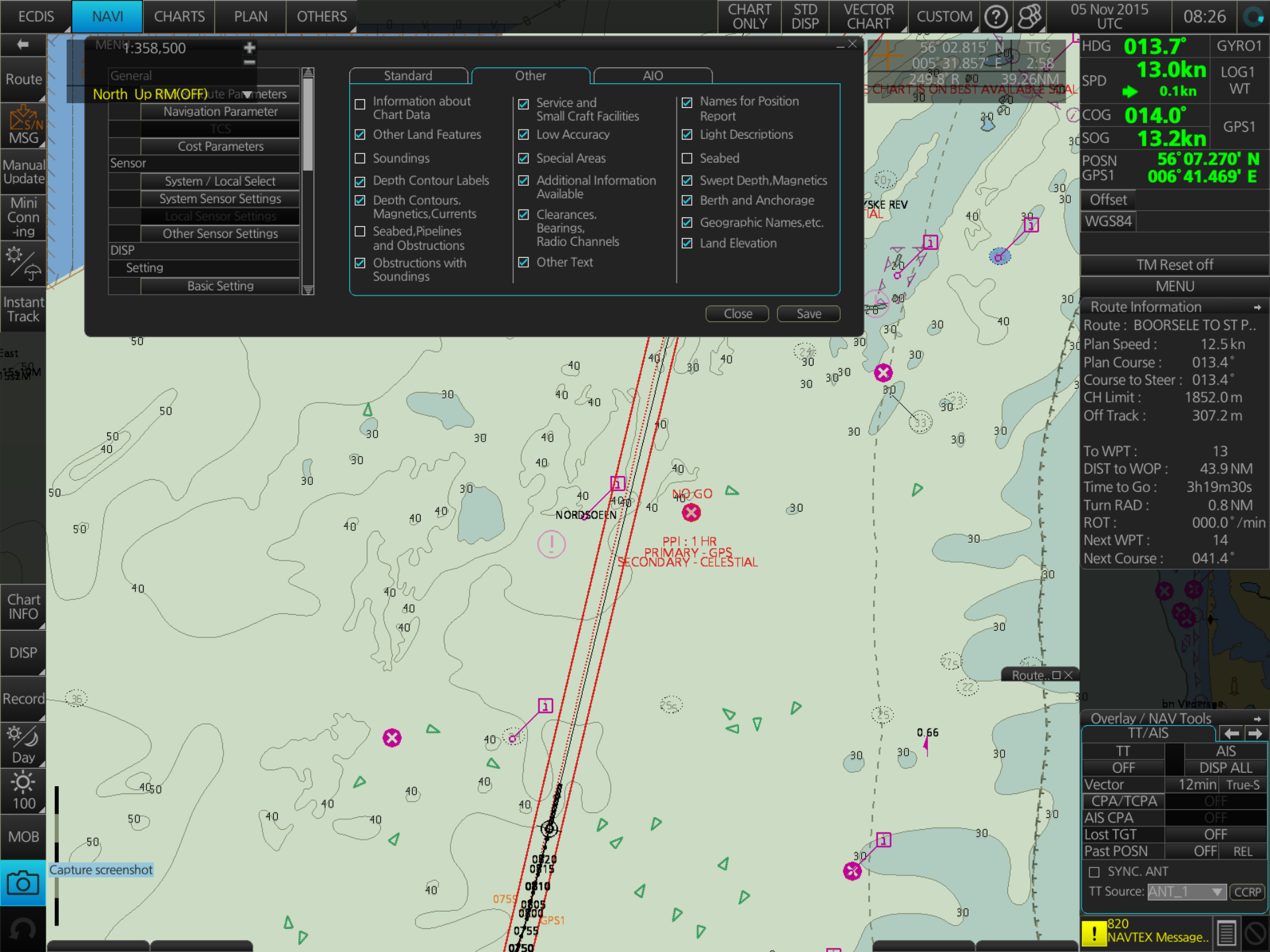
Mini Conning
Instant Track
Chart INFO
DISP
Record
Day
100
MOB


ECDIS
NAVI
CHARTS
PLAN
OTHERS
CHART ONLY
STD DISP
VECTOR CHART
CUSTOM
05 Nov 2015 UTC
08:26
MENU
1:358,500
General
North Up RM(OFF)
Navigation Parameter
Cost Parameters
Sensor
System / Local Select
System Sensor Settings
Other Sensor Settings
DISP
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Basic Setting
Standard
Other
AIO
Information about Chart Data
Other Land Features
Soundings
Depth Contour Labels
Depth Contours, Magnetics,Currents
Seabed,Pipelines and Obstructions
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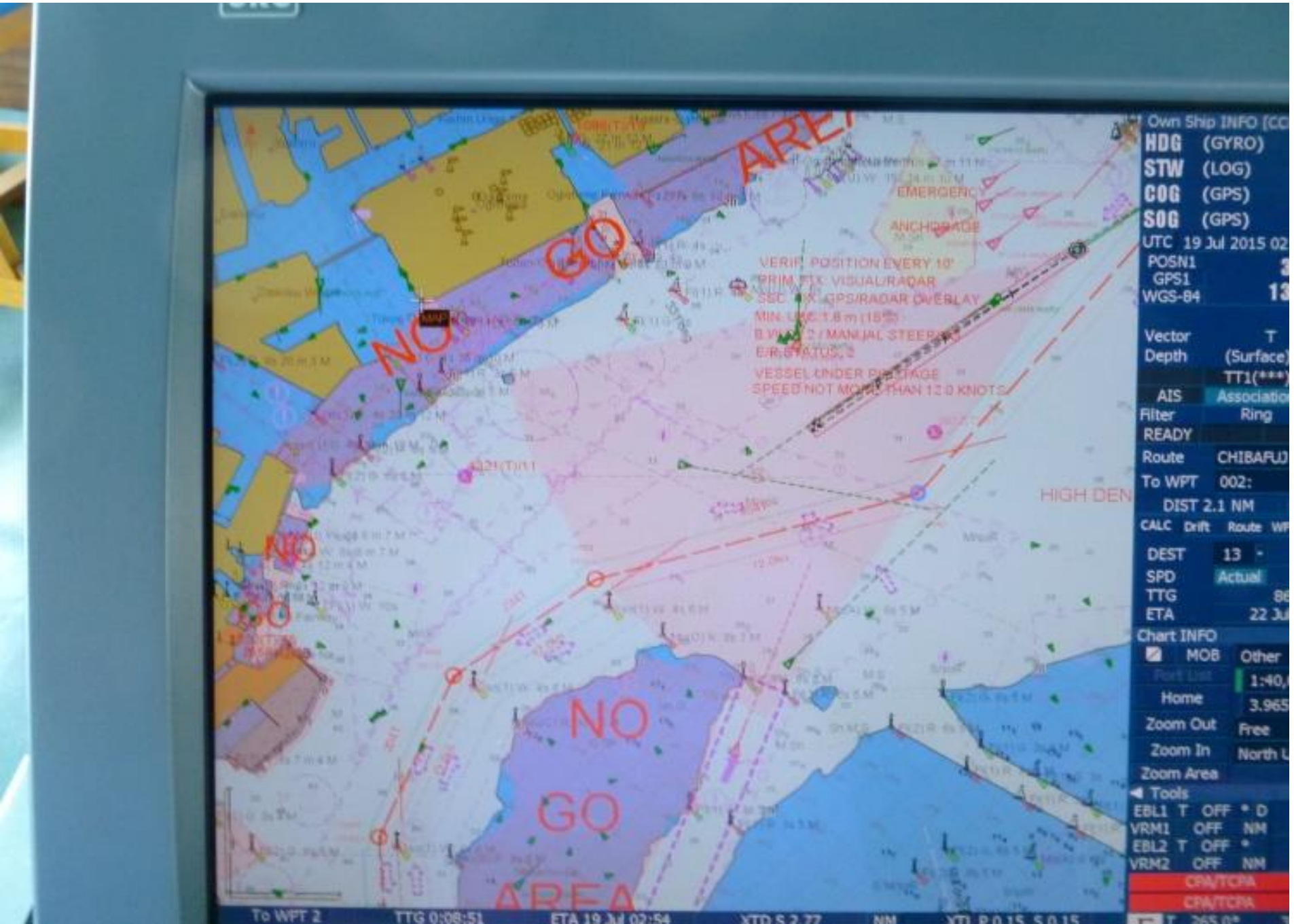
Service and Small Craft Facilities
Low Accuracy
Special Areas
Additional Information Available
Clearances, Bearings, Radio Channels
Other Text
Names for Position Report
Light Descriptions
Seabed
Swept Depth,Magnetics
Berth and Anchorage
Geographic Names,etc.
Land Elevation
Close
Save
HDG 013.7°
GYRO1
SPD 13.0kn
0.1kn
LOG1 WT
COG 014.0°
SOG 13.2kn
GPS1
POSN GPS1 56° 07.270' N 006° 41.469' E
Offset
WGS84
TM Reset off
MENU
Route Information
Route : BOORSELE TO ST P..
Plan Speed : 12.5 kn
Plan Course : 013.4°
Course to Steer : 013.4°
CH Limit : 1852.0 m
Off Track : 307.2 m
To WPT : 13
DIST to WOP : 43.9 NM
Time to Go : 3h19m30s
Turn RAD : 0.8 NM
ROT : 000.0°/min
Next WPT : 14
Next Course : 041.4°
NORDSOEEN
NO GO
PPI : 1 HR
PRIMARY - GPS
SECONDARY - CELESTIAL
Route..
Overlay / NAV Tools
TT/AIS
TT OFF
AIS DISP ALL
Vector 12min True-S
CPA/TCPA OFF
AIS CPA OFF
Lost TGT OFF
Past POSN OFF REL
SYNC. ANT
TT Source: ANT_1 CCRP
820 NAVTEX Message..
Route
Manual Update
Mini Conn -ing
Instant Track
Chart INFO
DISP
Record
Day
100
MOB
Capture screenshot


NO
GO
NO
GO
NO
GO
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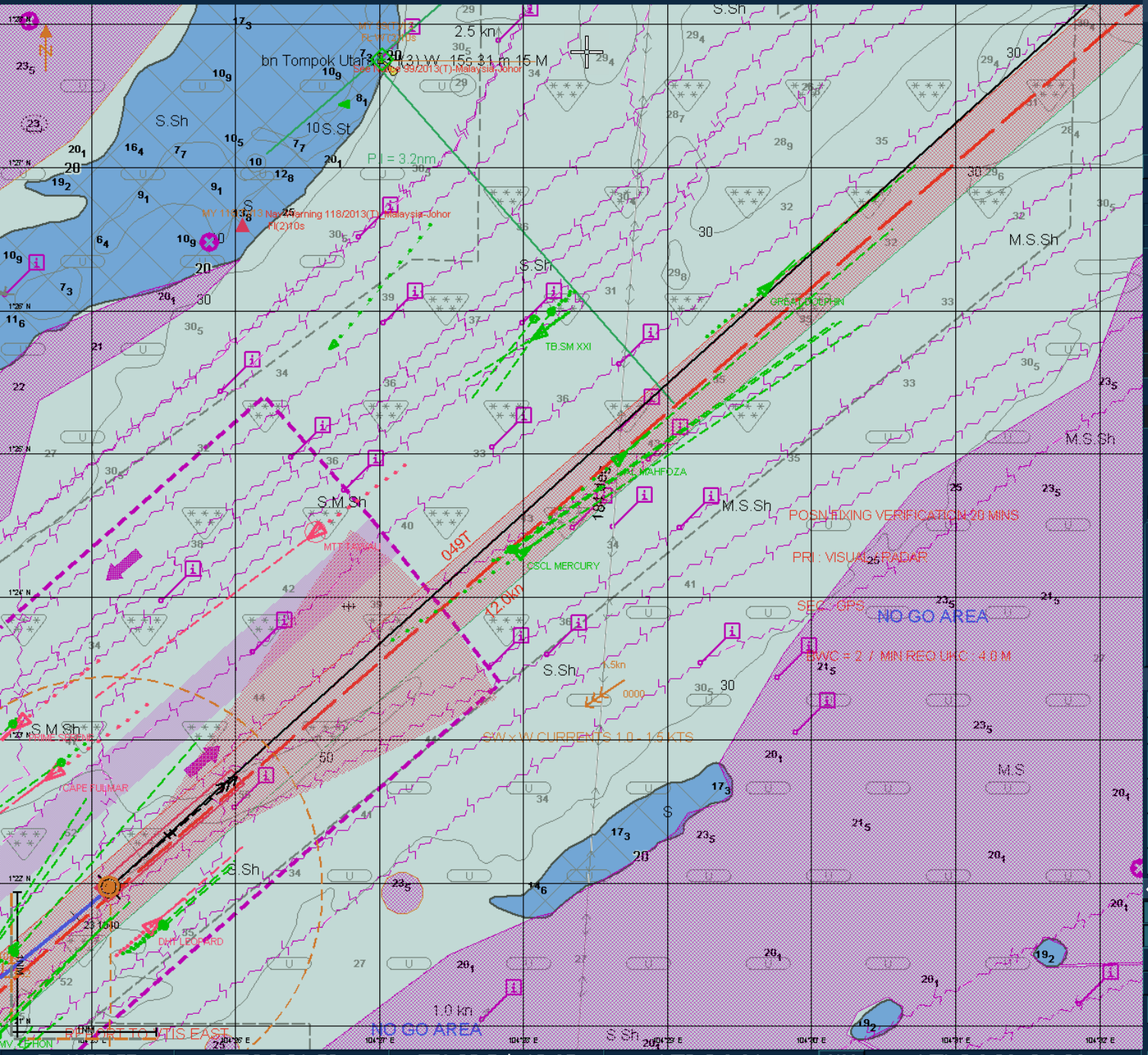
EMERGENC
ANCHORAGE
HIGH DEN
Own Ship INFO [CC
HDG (GYRO)
STW (LOG)
COG (GPS)
SOG (GPS)
UTC 19 Jul 2015 02
POSN1
GPS1
WGS-84
Vector T
Depth (Surface)
TT1(***)
AIS Associatio
Filter Ring
READY
Route CHIBAFU
To WPT 002:
DIST 2.1 NM
CALC Drift Route WP
DEST 13 -
SPD Actual
TTG
ETA 22 Ju
Chart INFO
MOB Other
Home
Zoom Out Free
Zoom In North U
Zoom Area
Tools
EBL1 T OFF
VRM1 OFF NM
EBL2 T OFF
VRM2 OFF NM
CPA/TCPA
CPA/TCPA
To WPT 2
TTG 0:08:51
ETA 19 Jul 02:54
XTD S 2.27 NM
XTD P 0.15 S 0.15


FREQ. POSITION EVERY 5'
PRIM. FIX: VISUAL/RADAR
SEC. FIX: GPS
MIN. UKC: m (10%)
E.W.C.: 2 / MANUAL STEERING
E/R STATUS: 2
VESSEL UNDER PILOTAGE
SPEED NOT MORE THAN 12.0 KNOTS
HIGH DENSITY TRAFFIC AREA
EMERGENCY
ANCHORAGE
M.Sh
P.I.=2.51 NM
331deg
254T
12.0kn
Fl(1) R. 4s
Mo(U) W. 15s 34 m 10 M
Iso(1) W. 4s 6 M
Mo(A) W. 8s 5 M
Mo(D) R. 8s 7 M
KUMANO MARU
KYOTO MARU
KUROGANE
HAKUSEI MARU NO.15
SYOUANMARU
DAI7ERUPIMARU
ASIAN NAGA
RYOKA MARU NO.8
PACIFIC BREEZE
YACHIYO MARU
M/G
M/soR
HDG
STW
COG
SOG
UTC
POSN
GPS1
WGS-84
Vector
Depth
AIS
Filter
READY
Route
To WPT
DIST
CALC
DEST
SPD
TTG
ETA
Chart IN
Home
Zoom O
Zoom I
Tools
EBL1
VRM1



Own Ship INFO [CCRP1]

HDG	(GYRO)	047.9 °
STW	(LOG)	5.4 kn
COG	(GPS)	049.0 °
SOG	(GPS)	5.9 kn

UTC 23 Feb 2016 10:43:14+00:00

POSN1	1°21.968' N
DGPS1	104°25.129' E
WGS-84	

Vector	T	12 min
Depth	(Transducer)	32.1 m

	TT1(***)	TT2(***)
AIS	Association	
Filter	Ring	Sector
READY		

Route: OK>V 10L2

To WPT: 057:

DIST 14.0 NM | BRG 049.2 °

CALC | Drift | Route | WPT | Pair

DEST	57	14.0 NM
SPD	Actual	5.9 kn
TTG		2:21:58
ETA		23 Feb 13:05 UTC

Chart INFO

MOB | Other | !

Port List | 1:40,000

Home | 3.965 NM

Zoom Out | True

Zoom In | North Up

Zoom Area | 000.0 °

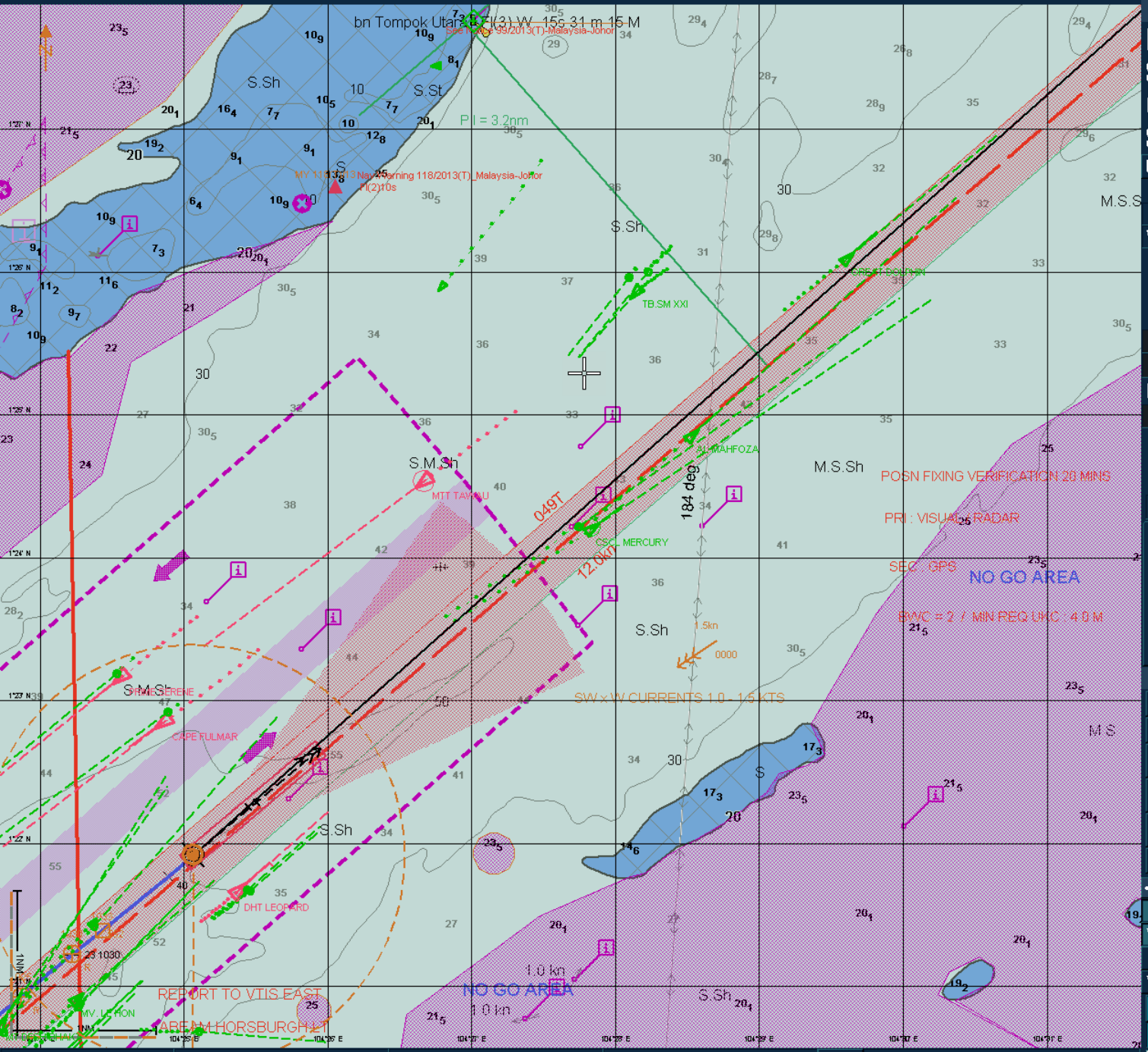
Tools

EBL1	T	180.4 °	1°20.491' N
VRM1		1.477 NM	104°25.118' E
EBL2	T	OFF °	
VRM2		OFF NM	

Alarm List | CPA/TCPA

To WPT 57	TTG 2:21:58	ETA 23 Feb 13:05	XTD P 0.04 NM	XTL P 0.20, S 0.20
Next WPT 58	CRS 021.1		1 Alarms	1 Warnings

E | T 033.0° | 6.06 NM | 1°27.051' N | 104°28.410' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	048.3 °
STW	(LOG)	5.2 kn
COG	(GPS)	050.0 °
SOG	(GPS)	5.8 kn

UTC 23 Feb 2016 10:42:25+00:00

POSN1	1°21.916' N
DGPS1	
WGS-84	104°25.066' E

Vector	T	12 min
Depth	(Transducer)	32.5 m

TT1(***) TT2(***)

AIS | Association

Filter | Ring | Sector

READY

Route OK>V 10L2

To WPT 057:

DIST 14.0 NM BRG 049.2 °

CALC | Drift | Route | WPT | Pair

DEST	57	14.0 NM
SPD	Actual	5.8 kn
TTG		2:25:16
ETA		23 Feb 13:07 UTC

Chart INFO

MOB | Other | !

Port List | 1:40,000

Home | 3.965 NM

Zoom Out | True

Zoom In | North Up

Zoom Area | 000.0 °

Tools

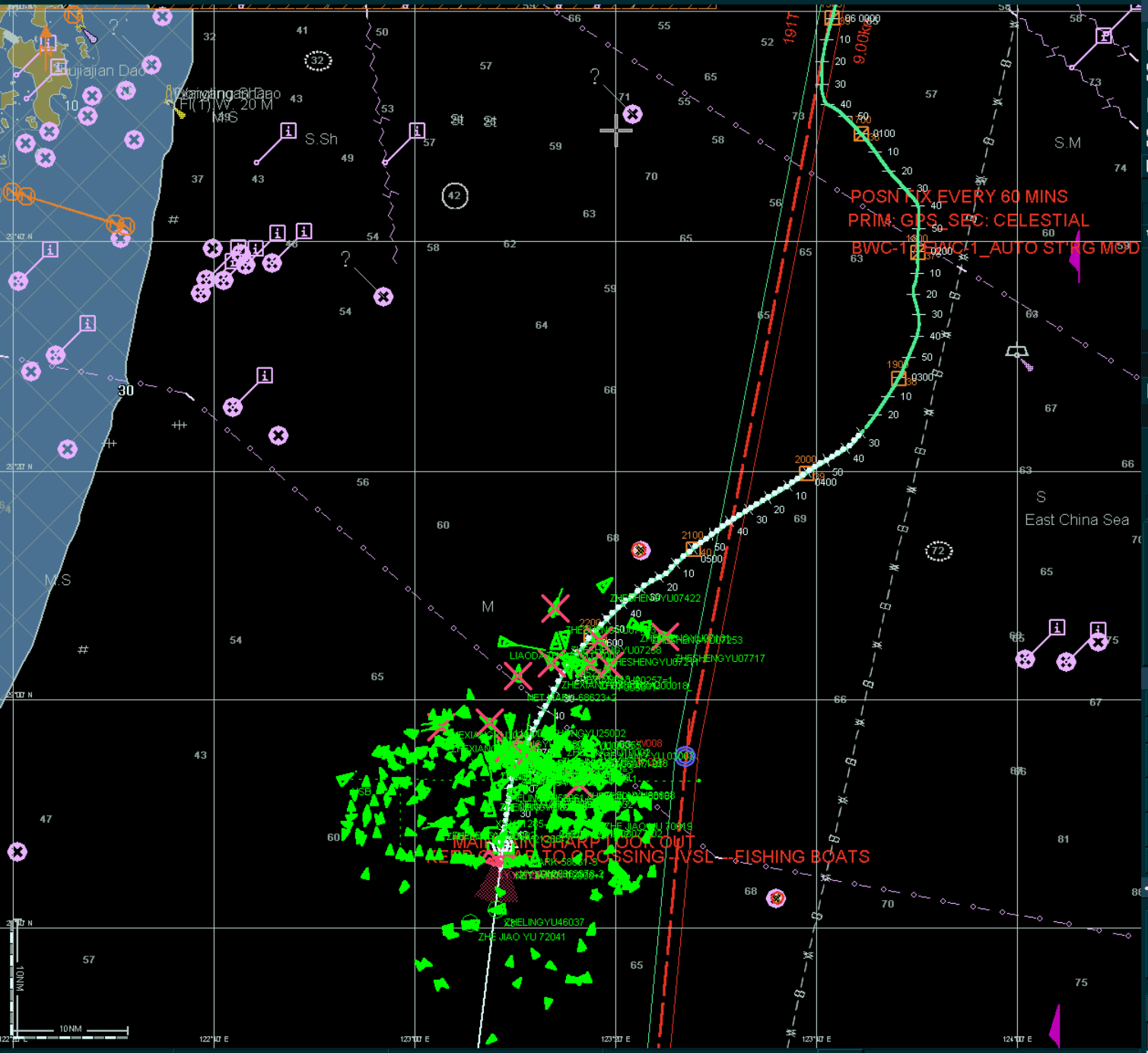
EBL1	T	180.4 °	1°20.439' N
VRM1		1.477 NM	104°25.055' E
EBL2	T	OFF °	
VRM2		OFF NM	

Alarm List

AIS MAX Target

To WPT 57	TTG 2:25:16	ETA 23 Feb 13:07	XTD P 0.04 NM	XTL P 0.20, S 0.20
Next WPT 58	CRS 021.1		1 Alarms	2 Warnings

E T 030.5° 1°26.930' N
5.82 NM 104°28.001' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	187.0 °
STW	(LOG)	11.1 kn
COG	(GPS)	186.0 °
SOG	(GPS)	11.0 kn

UTC 05 Mar 2016 23:46:50+00:00

POSN1	28°47.269' N
DGPS1	123°08.822' E
WGS-84	

Vector	T	12 min
Depth	(Surface)	72.4 m

TT1(***) TT2(WAT)

AIS | Association

Filter | Ring | Sector

READY

Route V047 Ba

To WPT 008:

DIST 18.0 NM BRG 063.2 °

CALC | Drift | Route | WPT | Pair

DEST	8	18.0 NM
SPD	Actual	11.0 kn
TTG		1:38:13
ETA		06 Mar 01:25 UTC

Chart INFO

MOB | Other !

Port List | 1:500,000

Home | 49.566 NM

Zoom Out | Free

Zoom In | North Up

Zoom Area | 000.0 °

Brilliance

PANEL | VID | TGT | Day3

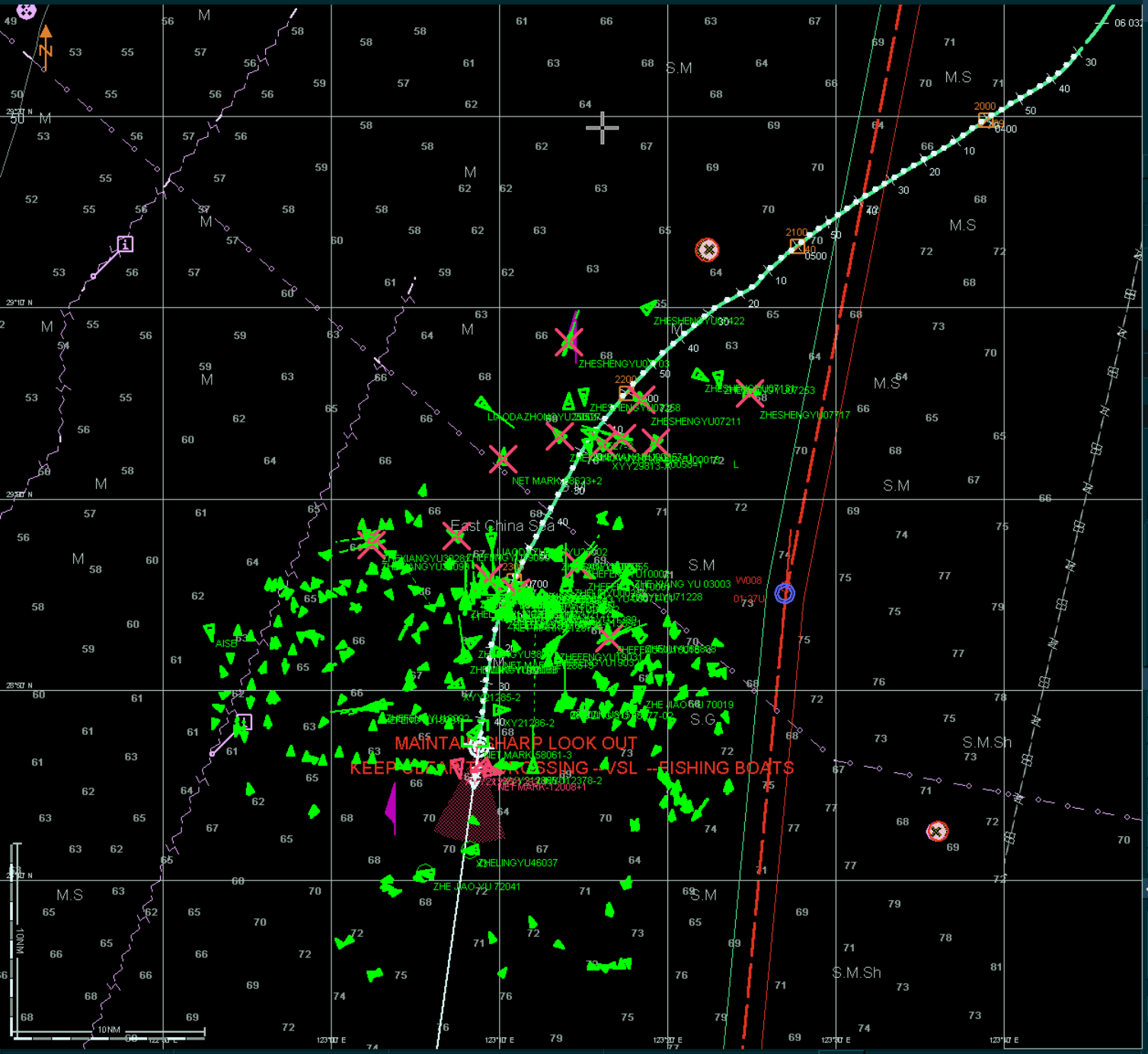
Alarm List

XTD

To WPT 8 | TTG 1:38:13 | ETA 06 Mar 01:25 | XTD S 14.08 | NM | XTL P 1.00, S 1.00

Next WPT 9 | CRS 185.4 | 3 Alarms | 2 Warnings

E T 009.0° 63.2 NM 29°49.690' N 123°20.078' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	187.9 °
STW	(LOG)	11.2 kn
COG	(GPS)	186.0 °
SOG	(GPS)	11.0 kn

UTC 05 Mar 2016 23:48:13+00:00

POSN1 DGPS1 WGS-84 28°47.017' N 123°08.790' E

Vector T 12 min
Depth (Surface) 71.7 m
TT1(***) TT2(WAT)
AIS Association
Filter Ring Sector
READY

Route V047 Ba
To WPT 008:
DIST 18.1 NM BRG 062.6 °
CALC Drift Route WPT Pair
DEST 8 18.2 NM
SPD Actual 11.0 kn
TTG 1:38:59
ETA 06 Mar 01:27 UTC

Chart INFO

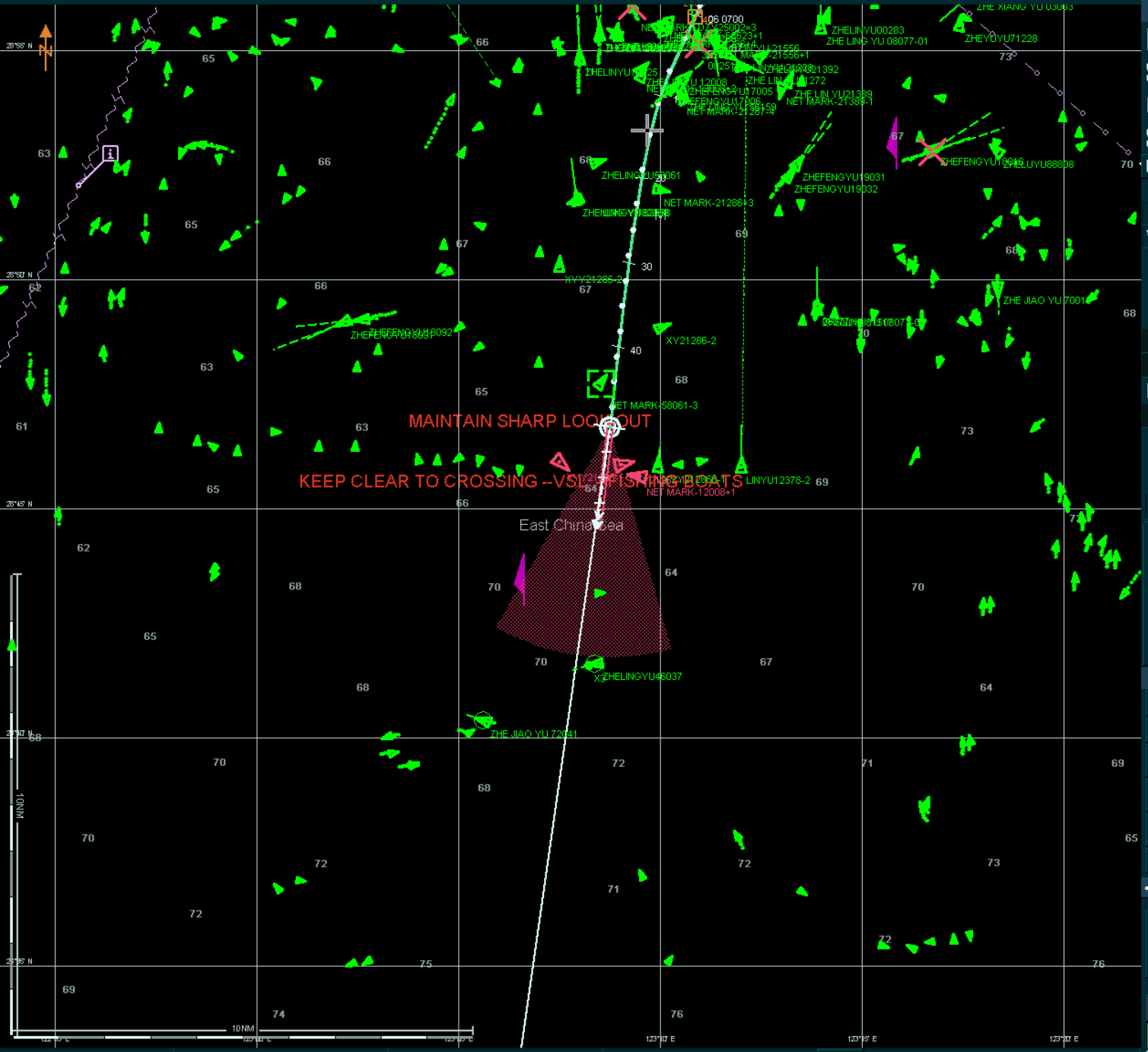
MOB Other !
Port List 1:300,000
Home 29.74 NM
Zoom Out Free
Zoom In North Up
Zoom Area 000.0 °
Brilliance

PANEL VID TGT Day3

Alarm List
XTD

To WPT 8 | TTG 1:38:59 | ETA 06 Mar 01:27 | XTD S 14.06 NM | XTL P 1.00, S 1.00
Next WPT 9 | CRS 185.4 | 3 Alarms | 1 Warnings

E T 011.3° 33.04 NM 29°19.420' N 123°16.139' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	188.1 °
STW	(LOG)	11.2 kn
COG	(GPS)	187.0 °
SOG	(GPS)	11.1 kn

UTC 05 Mar 2016 23:49:35+00:00

POSN1
DGPS1
WGS-84
28°46.764' N
123°08.752' E

Vector T 12 min
Depth (Surface) 71.7 m
TT1(***) TT2(WAT)
AIS Association
Filter Ring Sector
READY

Route V047 Ba
To WPT 008:
DIST 18.3 NM BRG 061.9 °
CALC Drift Route WPT Pair

DEST 8 18.3 NM
SPD Actual 11.1 kn
TTG 1:38:54
ETA 06 Mar 01:28 UTC

Chart INFO

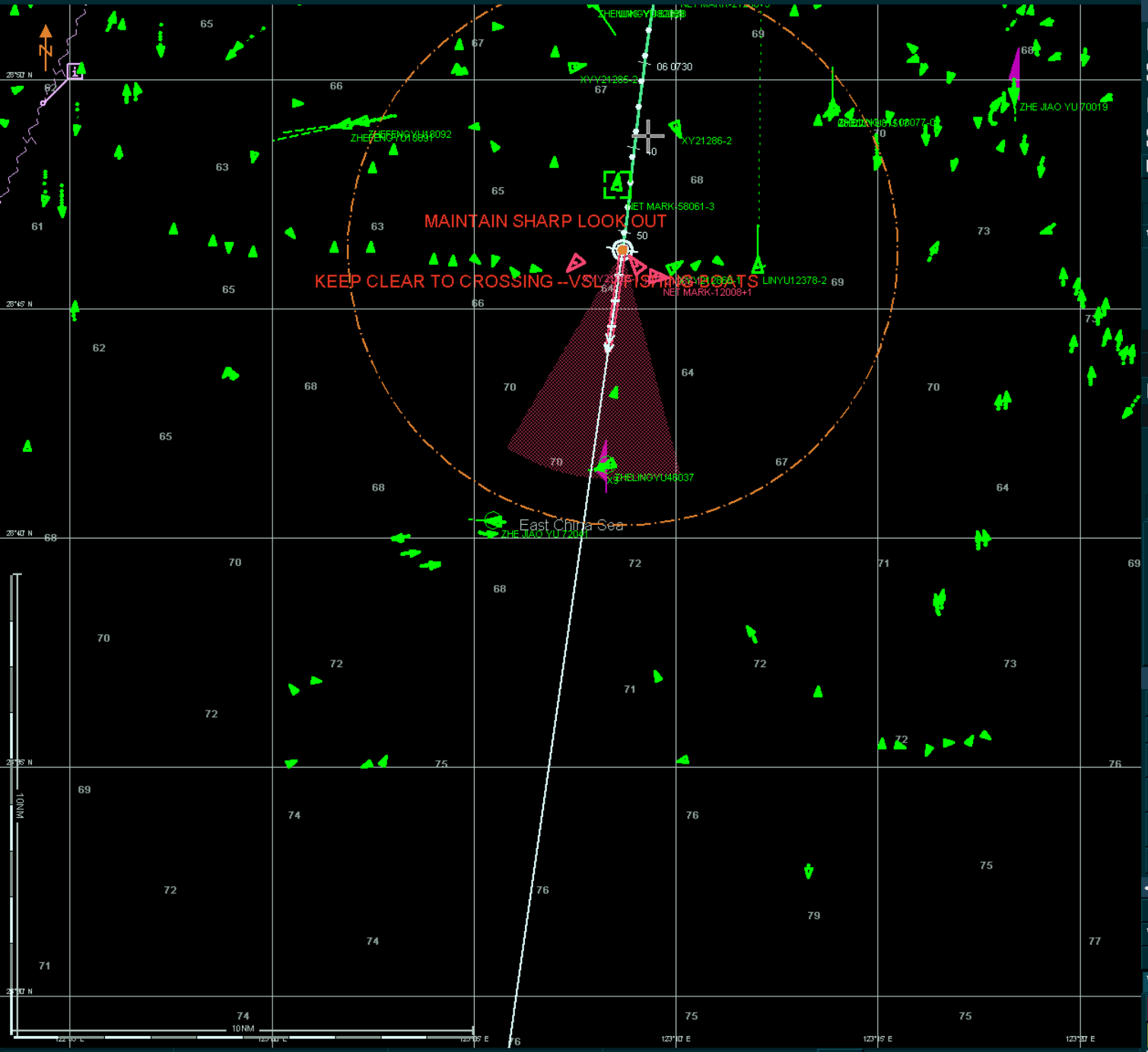
MOB Other !
Port List 1:125,000
Home 12.392 NM
Zoom Out Free
Zoom In North Up
Zoom Area 000.0 °
Brilliance

PANEL VID TGT Day3

CPA/TCPA Alarm List
Customized display

To WPT 8	TTG 1:38:54	ETA 06 Mar 01:28	XTD S 14.05	NM	XTL P 1.00, S 1.00
Next WPT 9	CRS 185.4			3 Alarms	1 Warnings

E T 007.2° 6.55 NM 28°53.261' N 123°09.686' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	188.1 °
STW	(LOG)	11.4 kn
COG	(GPS)	188.0 °
SOG	(GPS)	11.2 kn

UTC 05 Mar 2016 23:52:11+00:00

POSN1 DGPS1 WGS-84: 28°46.282' N, 123°08.677' E

Vector T 12 min
Depth (Surface) 70.9 m
TT1(***) TT2(WAT)
AIS Association
Filter Ring Sector
READY

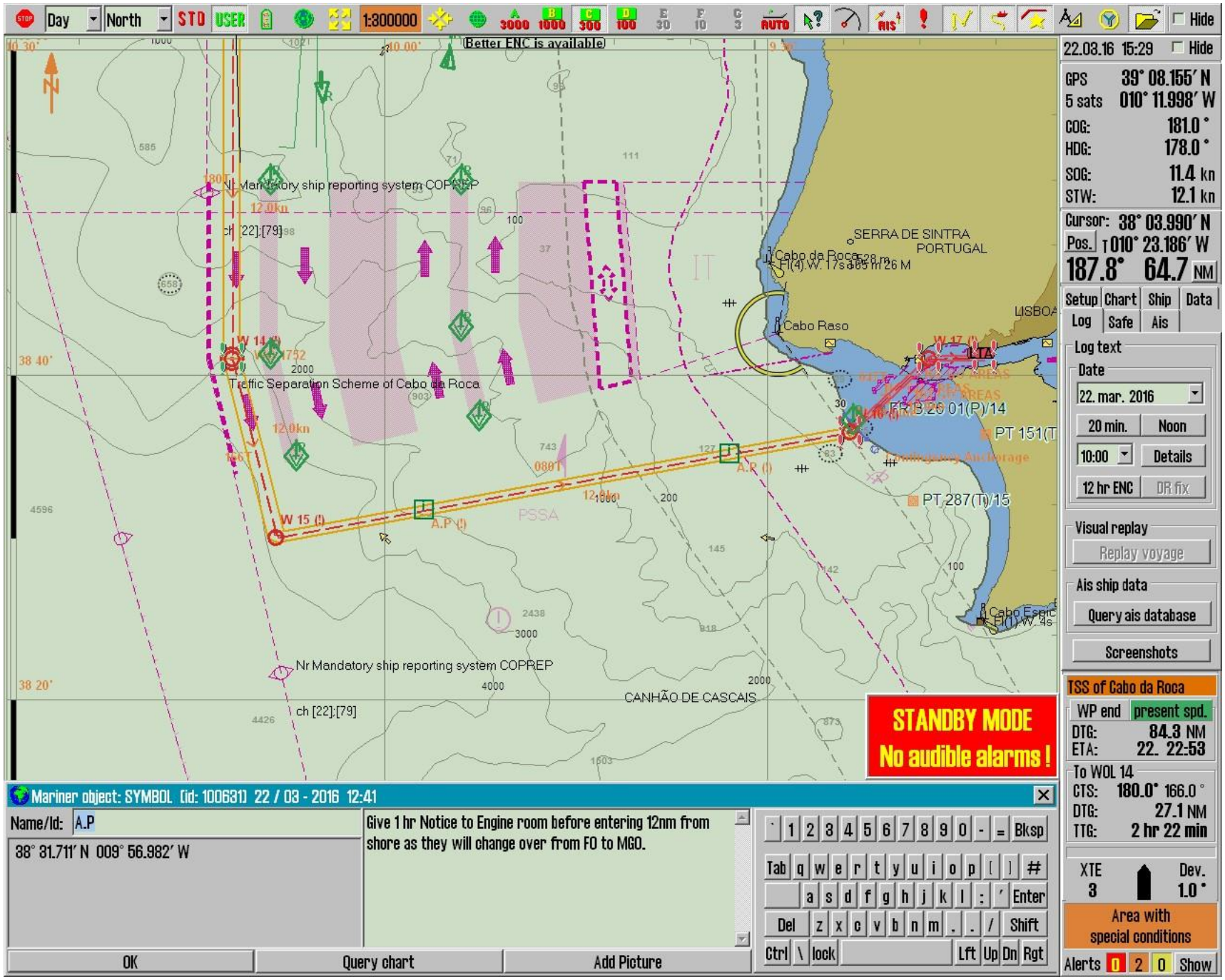
Route V047 Ba
To WPT 008:
DIST 18.6 NM BRG 060.7 °
CALC Drift Route WPT Pair
DEST 8 18.6 NM
SPD Actual 11.2 kn
TTG 1:39:34
ETA 06 Mar 01:31 UTC

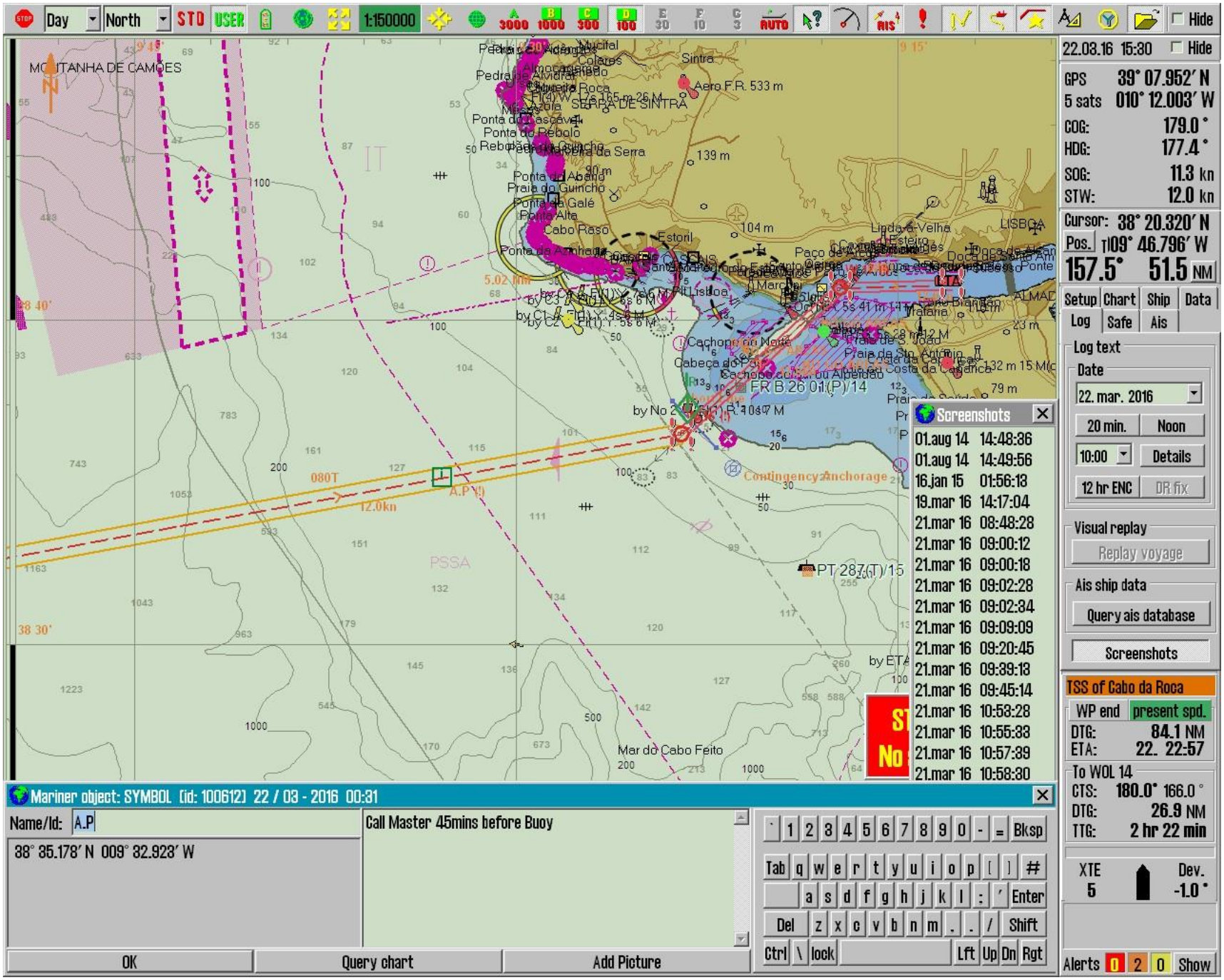
Chart INFO
MOB Other !
Port List 1:125,000
Home 12.392 NM
Zoom Out Free
Zoom In North Up
Zoom Area 000.0 °

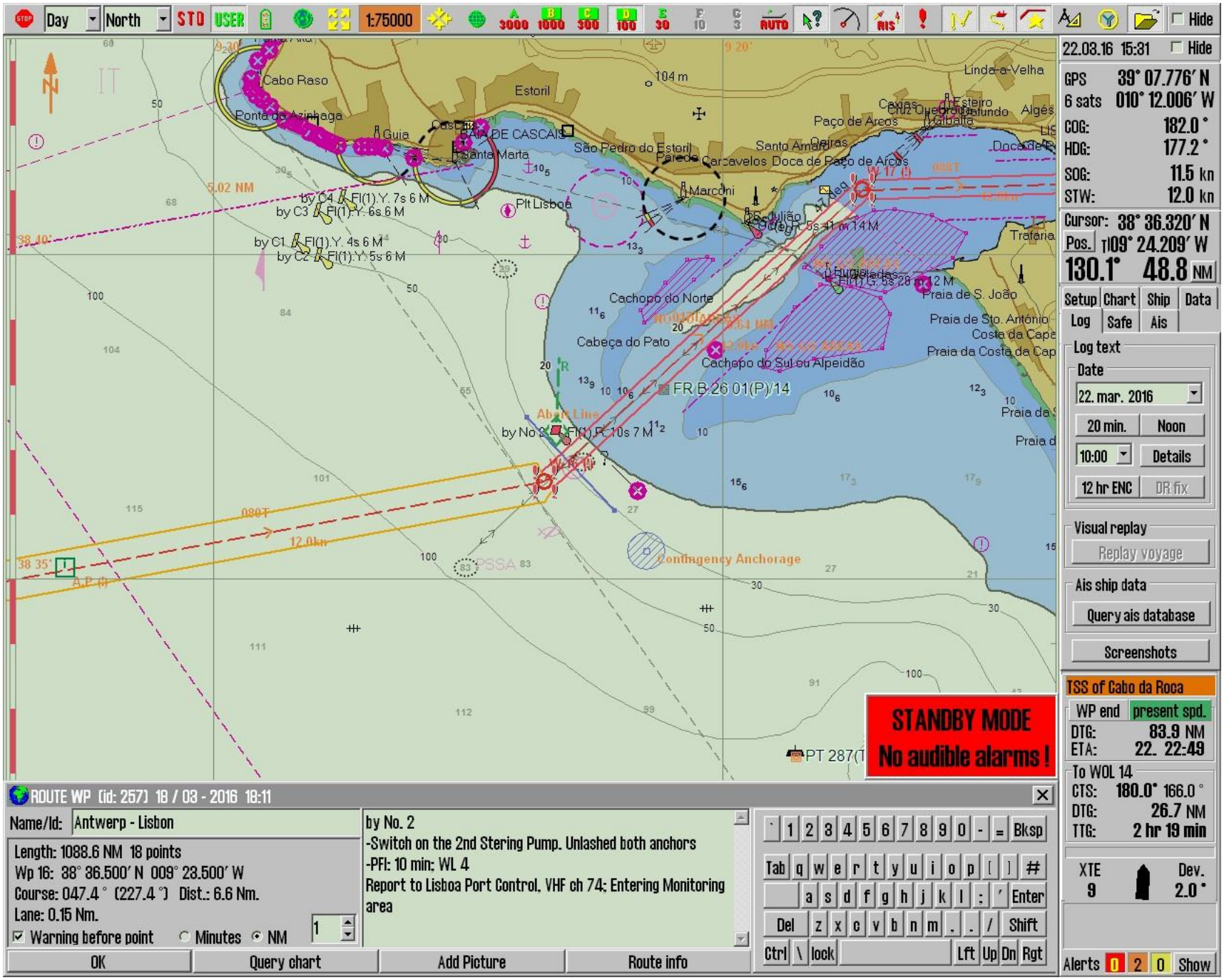
Tools
EBL1 T OFF °
VRM1 34.74 NM
EBL2 T OFF °
VRM2 5.99 NM
CPA/TCPA Alarm List
Customized display

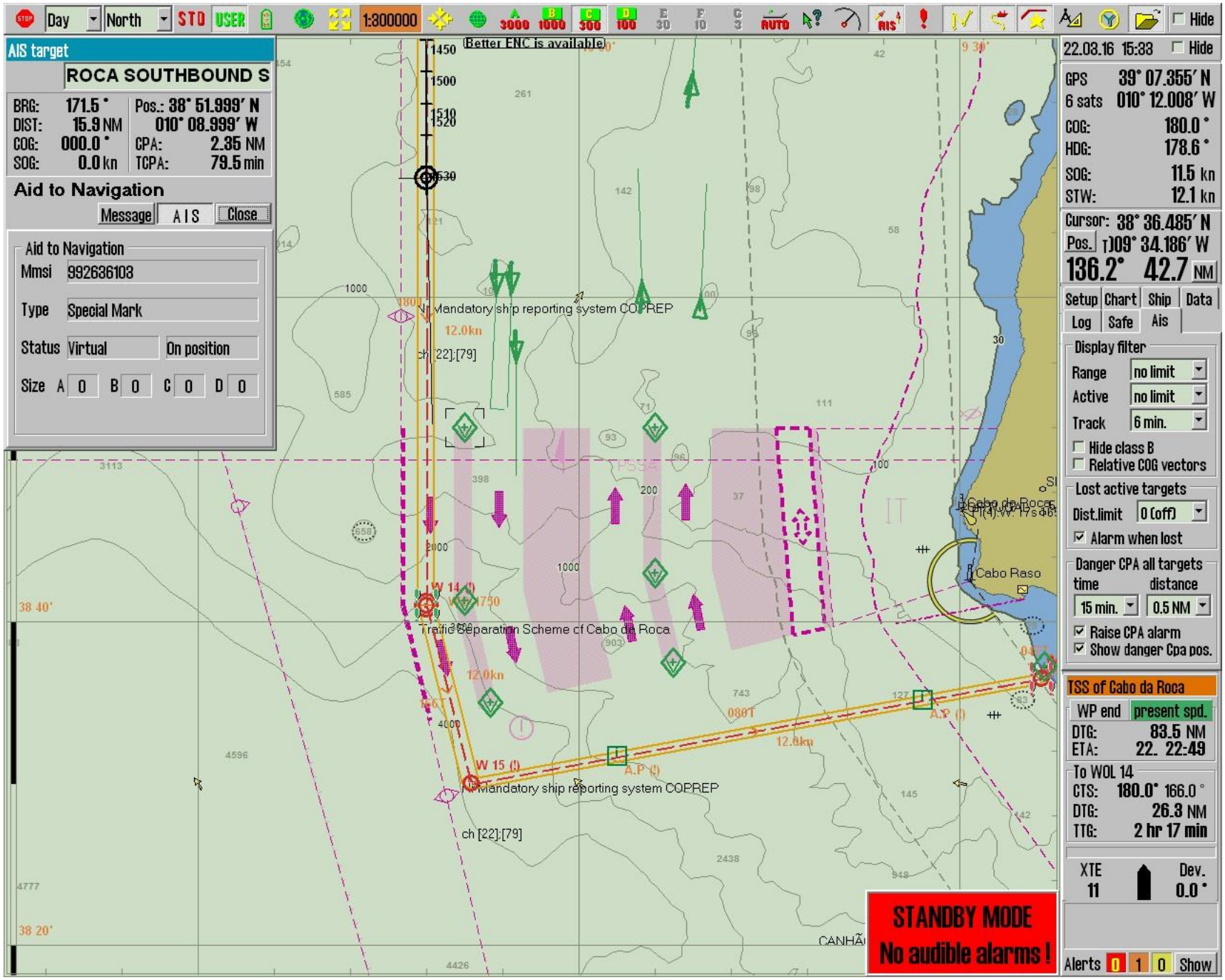
To WPT 8 | TTG 1:39:34 | ETA 06 Mar 01:31 | XTD S 14.02 NM | XTL P 1.00, S 1.00
Next WPT 9 | CRS 185.4 | 3 Alarms | 1 Warnings

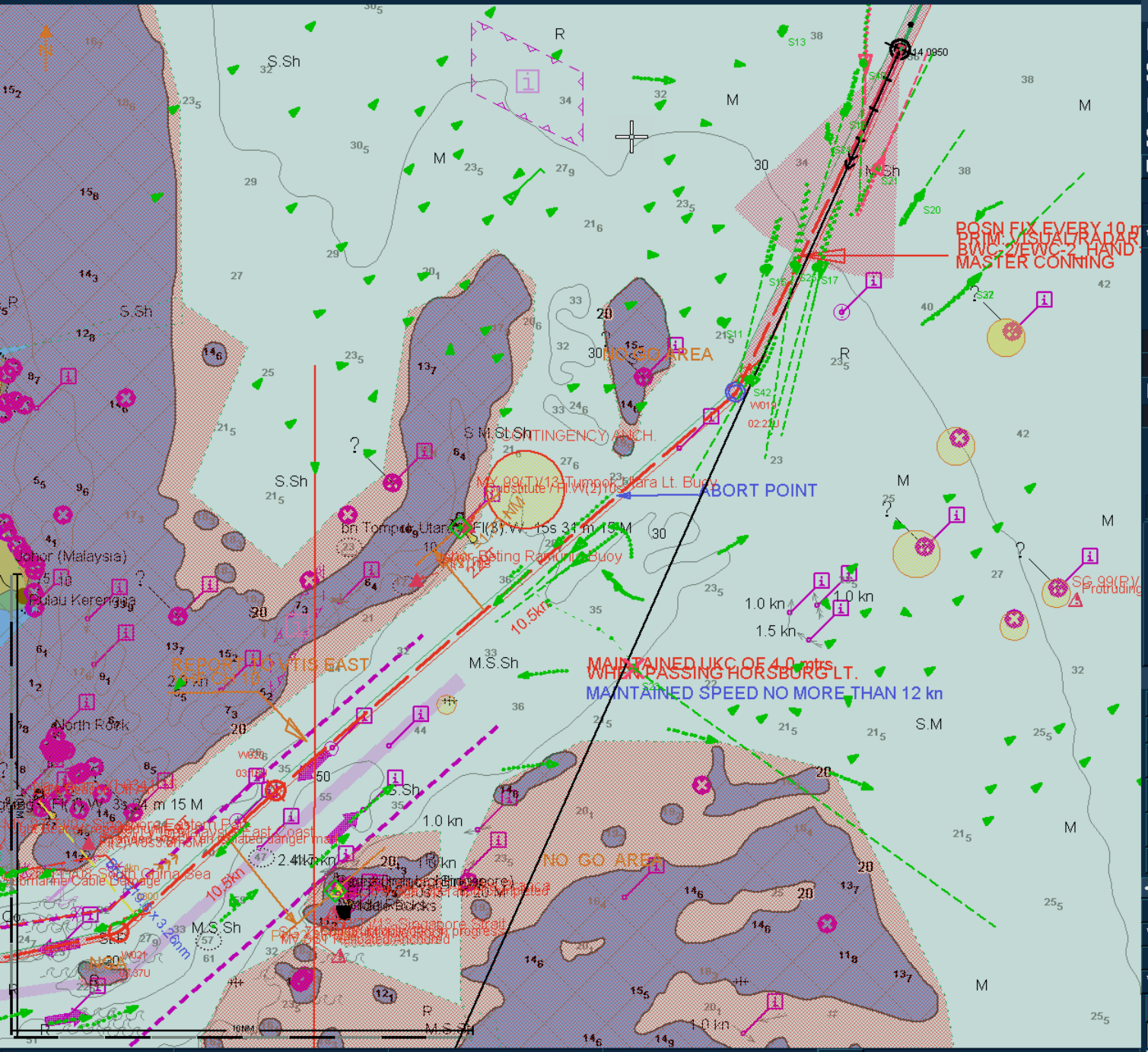
E T 012.8° 2.569 NM 28°48.788' N 123°09.320' E


Day
North
STD
USER
1:300000
Hide
Better ENC is available
Nr Mandatory ship reporting system COPREP
12.0kn
ch [22]:[79]
Traffic Separation Scheme of Cabo da Roca
SERRA DE SINTRA
PORTUGAL
Cabo da Roca
Fl(4)W. 17s 165 m 26 M
Cabo Raso
LISBOA
W 14 (!)
W 15 (!)
W 17 (!)
A.P (!)
PSSA
FR B 26 01(P)/14
PT 151(T
PT 287(T)/15
Cabo Espic
Fl(1)W. 4s
CANHÃO DE CASCAIS
STANDBY MODE
No audible alarms !
22.03.16 15:29
GPS 39° 08.155′ N
5 sats 010° 11.998′ W
COG: 181.0 °
HDG: 178.0 °
SOG: 11.4 kn
STW: 12.1 kn
Cursor: 38° 03.990′ N
Pos. 010° 23.186′ W
187.8° 64.7 NM
Setup Chart Ship Data
Log Safe Ais
Log text
Date
22. mar. 2016
20 min. Noon
10:00 Details
12 hr ENC DR fix
Visual replay
Replay voyage
Ais ship data
Query ais database
Screenshots
TSS of Cabo da Roca
WP end present spd.
DTG: 84.3 NM
ETA: 22. 22:53
To WOL 14
CTS: 180.0° 166.0 °
DTG: 27.1 NM
TTG: 2 hr 22 min
XTE 3
Dev. 1.0 °
Area with special conditions
Alerts 0 2 0 Show
Mariner object: SYMBOL (id: 100631) 22 / 03 - 2016 12:41
Name/Id: A.P
38° 31.711′ N 009° 56.982′ W
Give 1 hr Notice to Engine room before entering 12nm from shore as they will change over from FO to MGO.
OK
Query chart
Add Picture


Day
North
STD
USER
1:150000
Hide
MONTANHA DE CAMÕES
SERRA DE SINTRA
Sintra
Aero F.R. 533 m
139 m
104 m
Cabo Raso
Estoril
Lisboa
LISBOA
Cachopo do Norte
Cachopo do Sul ou Albeirão
FR B 26 01 (P) 14
Contingency Anchorage
080T
12.0kn
A.P
PSSA
PT 287 (T) 15
Mar do Cabo Feito
22.03.16 15:30
GPS 39° 07.952′ N
5 sats 010° 12.003′ W
COG: 179.0 °
HDG: 177.4 °
SOG: 11.3 kn
STW: 12.0 kn
Cursor: 38° 20.320′ N
Pos. 009° 46.796′ W
157.5° 51.5 NM
Setup
Chart
Ship
Data
Log
Safe
Ais
Log text
Date
22. mar. 2016
20 min.
Noon
10:00
Details
12 hr ENC
DR fix
Visual replay
Replay voyage
Ais ship data
Query ais database
Screenshots
01.aug 14 14:48:36
01.aug 14 14:49:56
16.jan 15 01:56:13
19.mar 16 14:17:04
21.mar 16 08:48:28
21.mar 16 09:00:12
21.mar 16 09:00:18
21.mar 16 09:02:28
21.mar 16 09:02:34
21.mar 16 09:09:09
21.mar 16 09:20:45
21.mar 16 09:39:13
21.mar 16 09:45:14
21.mar 16 10:53:28
21.mar 16 10:55:33
21.mar 16 10:57:39
21.mar 16 10:58:30
TSS of Cabo da Roca
WP end
present spd.
DTG: 84.1 NM
ETA: 22. 22:57
To WOL 14
CTS: 180.0° 166.0 °
DTG: 26.9 NM
TTG: 2 hr 22 min
XTE 5
Dev. -1.0 °
Alerts 0 2 0 Show
Mariner object: SYMBOL (id: 100612) 22 / 03 - 2016 00:31
Name/Id: A.P
38° 35.178′ N 009° 32.923′ W
Call Master 45mins before Buoy
OK
Query chart
Add Picture


Day
North
STD
USER
1:75000
Hide
22.03.16 15:31
Hide
GPS 39° 07.776′ N
6 sats 010° 12.006′ W
COG: 182.0 °
HDG: 177.2 °
SOG: 11.5 kn
STW: 12.0 kn
Cursor: 38° 36.320′ N
Pos. 009° 24.209′ W
130.1° 48.8 NM
Setup
Chart
Ship
Data
Log
Safe
Ais
Log text
Date
22. mar. 2016
20 min.
Noon
10:00
Details
12 hr ENC
DR fix
Visual replay
Replay voyage
Ais ship data
Query ais database
Screenshots
TSS of Cabo da Roca
WP end
present spd.
DTG: 83.9 NM
ETA: 22. 22:49
To WOL 14
CTS: 180.0° 166.0 °
DTG: 26.7 NM
TTG: 2 hr 19 min
XTE 9
Dev. 2.0 °
Alerts 0 2 0 Show
STANDBY MODE
No audible alarms !
Cabo Raso
Ponta da Azinhaga
Guia
Estoril
Cascais
BAIA DE CASCAIS
Santa Marta
São Pedro do Estoril
Parede
Carcavelos
Doca de Paço de Arcos
Paço de Arcos
Oeiras
Santo Amaro
Marconi
Plt Lisboa
Linda-a-Velha
Caxias
Algés
Trafaria
Cachopo do Norte
Cabeça do Pato
Cachopo do Sul ou Alpeidão
Praia de S. João
Praia de Sto. António
Costa da Capa
Praia da Costa da Cap
FR B 26 01(P)14
Abeam Line
Contingency Anchorage
080T
12.0kn
5.02 NM
by C4 Fl(1).Y. 7s 6 M
by C3 Fl(1).Y. 6s 6 M
by C1 Fl(1).Y. 4s 6 M
by C2 Fl(1).Y. 5s 6 M
by No 3 Fl(1).R. 10s 7 M
ROUTE WP (id: 257) 18 / 03 - 2016 18:11
Name/Id: Antwerp - Lisbon
Length: 1088.6 NM 18 points
Wp 16: 38° 36.500′ N 009° 23.500′ W
Course: 047.4 ° (227.4 °) Dist.: 6.6 Nm.
Lane: 0.15 Nm.
Warning before point
Minutes
NM
by No. 2
-Switch on the 2nd Stering Pump. Unlashed both anchors
-PFI: 10 min: WL 4
Report to Lisboa Port Control. VHF ch 74: Entering Monitoring area
OK
Query chart
Add Picture
Route info


Day
North
STD
USER
1:300000
Hide
AIS target
ROCA SOUTHBOUND S
BRG: 171.5 °
DIST: 15.9 NM
COG: 000.0 °
SOG: 0.0 kn
Pos.: 38° 51.999′ N
010° 08.999′ W
CPA: 2.35 NM
TCPA: 79.5 min
Aid to Navigation
Message
AIS
Close
Aid to Navigation
Mmsi 992636103
Type Special Mark
Status Virtual
On position
Size A 0 B 0 C 0 D 0
Better ENC is available
Mandatory ship reporting system COPREP
12.0kn
ch [22]:[79]
Traffic Separation Scheme of Cabo da Roca
W 14 (I)
W 15 (I)
A.P (I)
0801
12.0kn
Cabo Raso
22.03.16 15:33
Hide
GPS 39° 07.355′ N
6 sats 010° 12.008′ W
COG: 180.0 °
HDG: 178.6 °
SOG: 11.5 kn
STW: 12.1 kn
Cursor: 38° 36.485′ N
Pos. 009° 34.186′ W
136.2° 42.7 NM
Setup
Chart
Ship
Data
Log
Safe
Ais
Display filter
Range no limit
Active no limit
Track 6 min.
Hide class B
Relative COG vectors
Lost active targets
Dist.limit 0 (off)
Alarm when lost
Danger CPA all targets
time 15 min.
distance 0.5 NM
Raise CPA alarm
Show danger Cpa pos.
TSS of Cabo da Roca
WP end
present spd.
DTG: 83.5 NM
ETA: 22. 22:49
To WOL 14
CTS: 180.0° 166.0 °
DTG: 26.3 NM
TTG: 2 hr 17 min
XTE 11
Dev. 0.0 °
STANDBY MODE
No audible alarms !
Alerts 0 1 0 Show



Own Ship INFO [CCRP1]

HDG	(GYRO)	204.0 °
STW	(LOG)	14.3 kn
COG	(GPS)	204.0 °
SOG	(GPS)	14.4 kn

UTC 14 Mar 2016 01:50:02+00:00

POSN1	1°38.197' N
DGPS2	104°36.569' E
WGS-84	

Vector	T	12 min
Depth	(Surface)	40.2 m

TT1(***)

AIS | Association

Filter | Ring | Sector

READY

Route V047 Bb

To WPT 019:

DIST 7.8 NM | BRG 205.6 °

CALC | Drift | Route | WPT | Pair

DEST	24	48.0 NM
SPD	Actual	14.4 kn
TTG		3:19:56
ETA		14 Mar 05:09 UTC

Chart INFO

MOB | Other !

Port List | 1:125,000

Home | 12.392 NM

Zoom Out | Relative

Zoom In | North Up

Zoom Area | 000.0 °

Tools

EBL1	T	OFF	°
VRM1		OFF	NM
EBL2	T	OFF	°
VRM2		OFF	NM

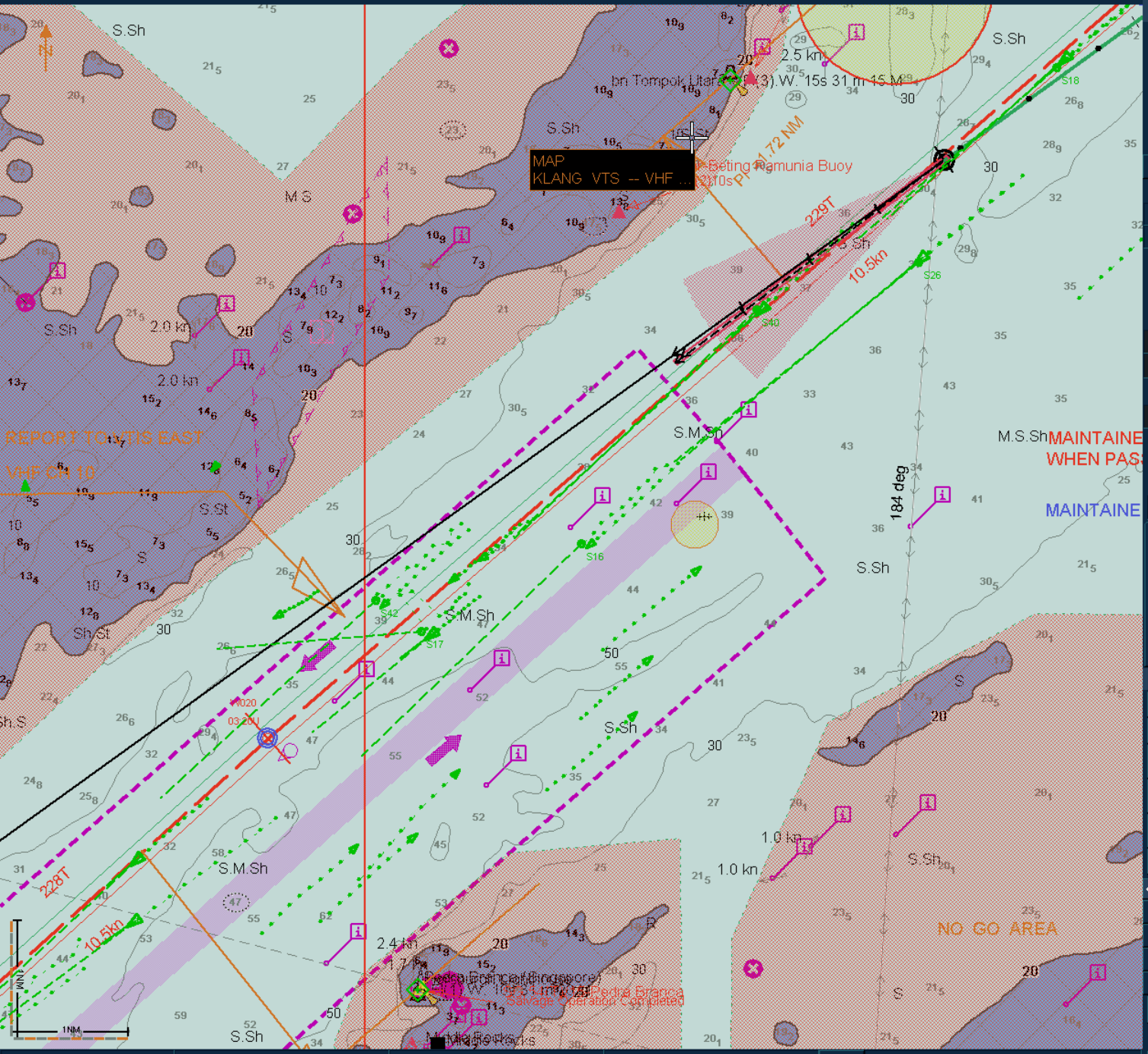
Lost | Alarm List

Customized display

To WPT 19	TTG 0:32:36	ETA 14 Mar 02:22	XTD P 0.02	NM
Next WPT 20	CRS 229.2		2 Alarms	1 Warnings

XTL P 0.20, S 0.20

E T 252.1° 6.17 NM 1°36.301' N 104°30.738' E



Own Ship INFO [CCRP1]

HDG	(GYRO)	234.2 °
STW	(LOG)	14.6 kn
COG	(GPS)	233.0 °
SOG	(GPS)	14.7 kn

UTC 14 Mar 2016 02:48:21+00:00

POSN1 DGPS2 WGS-84	1°27.048' N 104°28.870' E

Vector	T	12 min
Depth	(Surface)	31.7 m

TT1(***)

AIS | Association

Filter | Ring | Sector

READY

Route V047 Bb

To WPT 020:Abeam Horsbu

DIST 7.8 NM | BRG 229.5 °

CALC | Drift | Route | WPT | Pair

DEST	24	34.6 NM
SPD	Actual	14.7 kn
TTG		2:21:19
ETA		14 Mar 05:09 UTC

Chart INFO

MOB | Other

Port List | 1:50,000

Home | 4.957 NM

Zoom Out | Relative

Zoom In | North Up

Zoom Area | 000.0 °

Tools

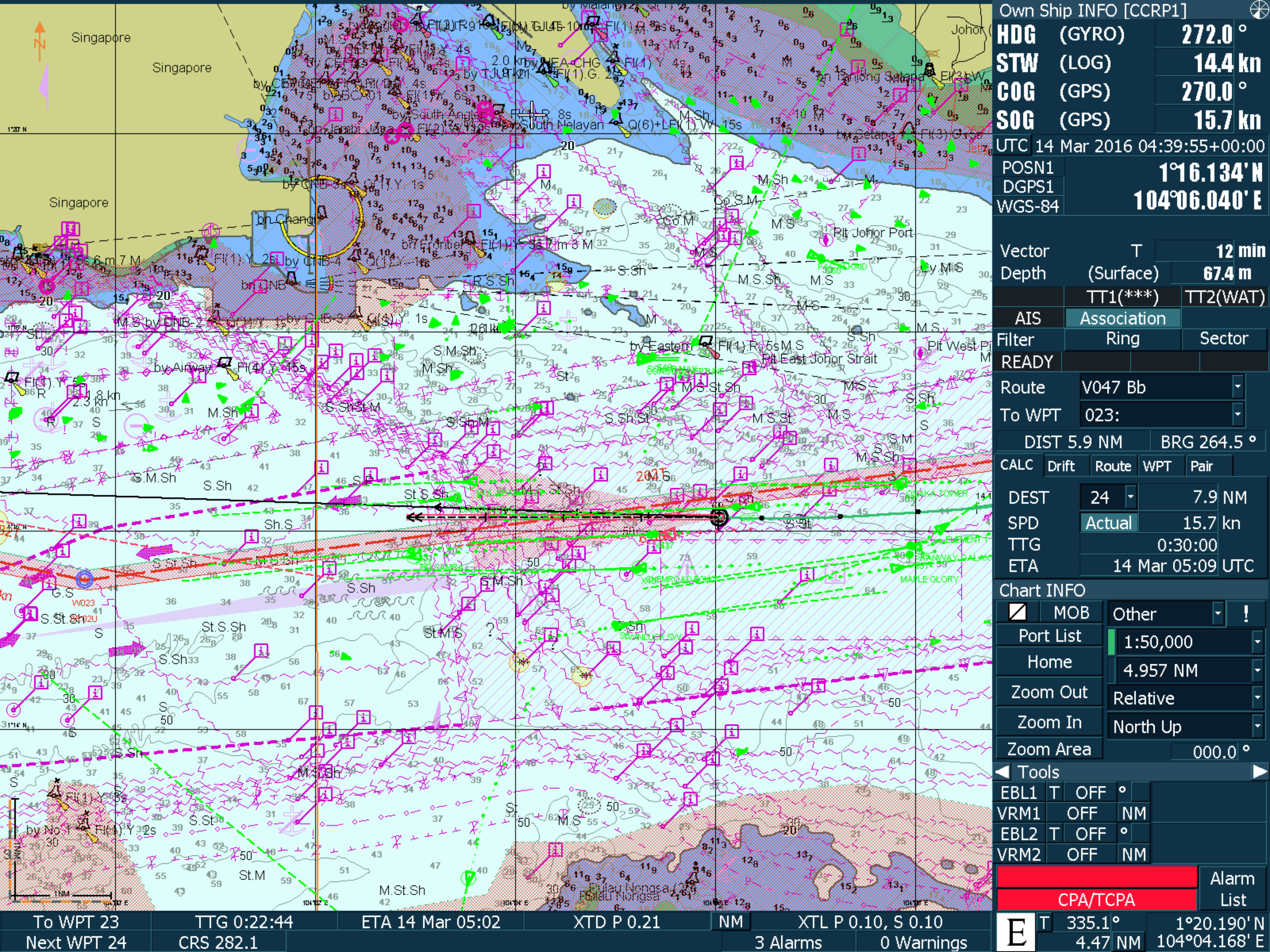
EBL1	T	OFF	°
VRM1		OFF	NM
EBL2	T	OFF	°
VRM2		OFF	NM

Alarm List

Lost

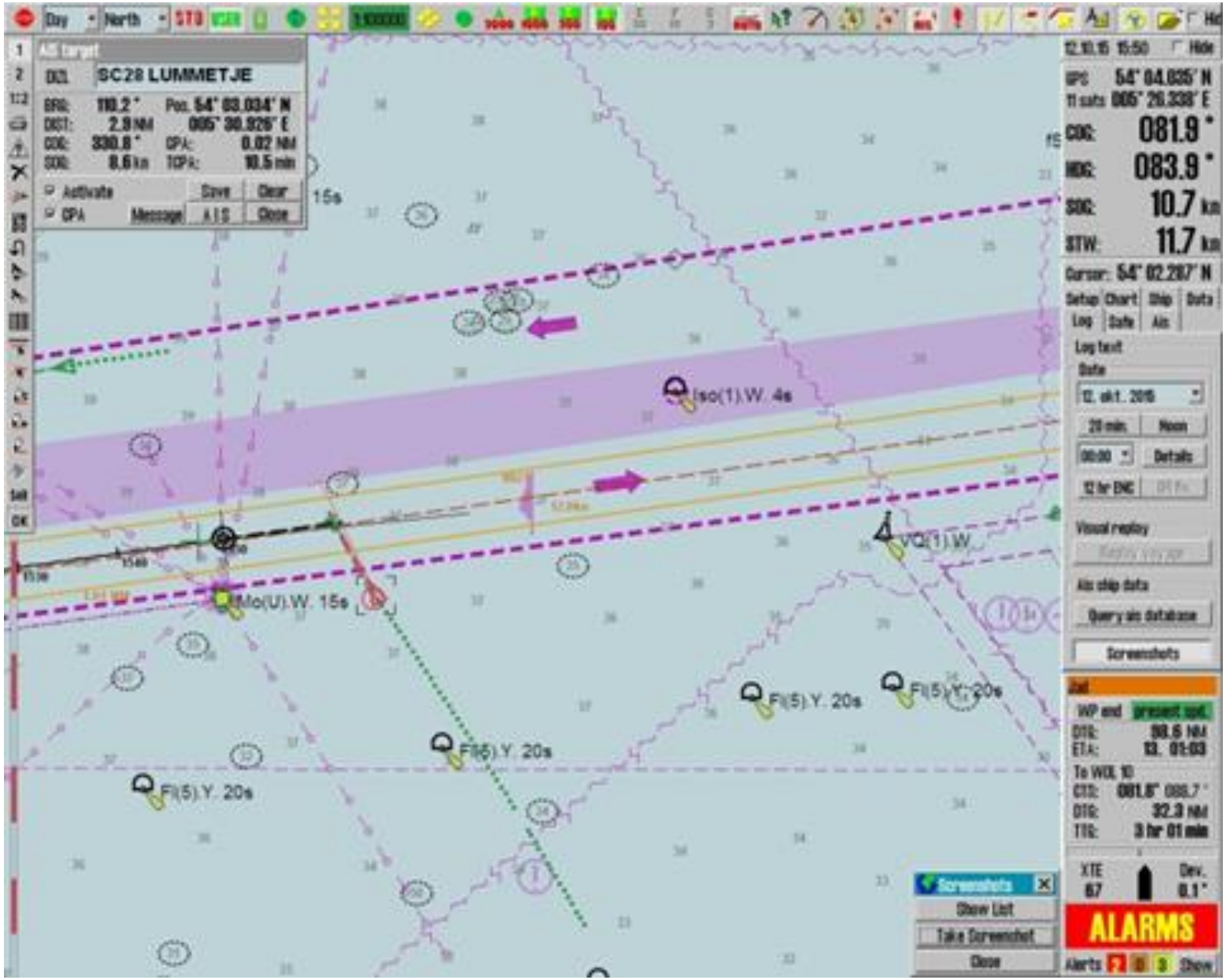
To WPT 20	TTG 0:31:42	ETA 14 Mar 03:20	XTD P 0.04 NM	XTL P 0.10, S 0.10
Next WPT 21	CRS 227.8		1 Alarms	1 Warnings

E T 275.2° 2.213 NM 1°27.247' N 104°26.680' E


Own Ship INFO [CCRP1]
HDG (GYRO) 272.0 °
STW (LOG) 14.4 kn
COG (GPS) 270.0 °
SOG (GPS) 15.7 kn
UTC 14 Mar 2016 04:39:55+00:00
POSN1 DGPS1 WGS-84
1°16.134' N
104°06.040' E
Vector T 12 min
Depth (Surface) 67.4 m
TT1(***) TT2(WAT)
AIS Association
Filter Ring Sector
READY
Route V047 Bb
To WPT 023:
DIST 5.9 NM BRG 264.5 °
CALC Drift Route WPT Pair
DEST 24 7.9 NM
SPD Actual 15.7 kn
TTG 0:30:00
ETA 14 Mar 05:09 UTC
Chart INFO
MOB Other !
Port List 1:50,000
Home 4.957 NM
Zoom Out Relative
Zoom In North Up
Zoom Area 000.0 °
Tools
EBL1 T OFF °
VRM1 OFF NM
EBL2 T OFF °
VRM2 OFF NM
Alarm List
CPA/TCPA
To WPT 23 TTG 0:22:44 ETA 14 Mar 05:02 XTD P 0.21 NM XTL P 0.10, S 0.10
Next WPT 24 CRS 282.1 3 Alarms 0 Warnings
E T 335.1° 4.47 NM 1°20.190' N 104°04.168' E
Singapore
Johor
Plt Johor Port
Plt East Johor Strait
Plt West
Pulau Nongsa

MANAGING NAVIGATION

- The foregoing are just some examples.
- How would the vetting inspector interpret them?
- Now that BPG5 has been published, this type of problem or inappropriate use has been identified.
- Managing navigation is not just about ECDIS (but it can be used to advantage)


SC28 LUMMETJE
Iso(1).W. 4s
Mo(U).W. 15s
VQ(1).W.
Fl(5).Y. 20s
Fl(5).Y. 20s
Fl(5).Y. 20s
Fl(5).Y. 20s
COG: 081.9 °
HDG: 083.9 °
SOG: 10.7 kn
STW: 11.7 kn
ALARMS


Dusk
North
1:100000
AIS target
5BXL3
KOPERNIK
BRG: 110.1°
DIST: 3.9 NM
COG: 346.6°
SOG: 10.2 kn
Pos: 54° 56.385' N
013° 56.877' E
CPA: 1.89 NM
TCPA: 10.6 min
Activate
CPA
Message
Save
Clear
AIS
Close
14.10.15 03:02
Hide
GPS
10 sats
54° 57.660' N
013° 50.585' E
COG: 114.6°
HDG: 114.3°
SOG: 11.3 kn
STW: 11.2 kn
Cursor: 55° 04.654' N
Setup
Chart
Ship
Data
Log
Safe
Ais
Log text
Date
13. okt. 2015
20 min.
Noon
00:00
Details
12 hr ENC
Visual replay
Replay voyage
Ais ship data
Query ais database
Screenshots
Kiel lt. - Naantali
WP end
present spd.
DTG: 394 NM
ETA: 15. 13:55
To WOL 11
CTS: 072.2° 036.5°
DTG: 9.61 NM
TTG: 51 min 03 s
XTE
702
Dev.
42°
OFF TRACK
Alerts 1 0 8 Show
OESTERSOEEN
WO 0253
WO 11
039T
12.0kn
072T
12.0kn
0300
0250
Q(1).W.
Fl(5).Y. 20s
Q(6)+LFl(1).W. 15s
Q(3).W. 10s
Show List
Take Screenshot
Close

MANAGING NAVIGATION

- ECDIS has transformed how the bridge operates.
- If you have ECDIS up and running; do not think the job is complete – it has only just started.
- As problems arise, they need to be shared and circulated – we should not be competing on Navigational Safety.
- Make no doubt about it; the officers “hang on to the procedures”. Well written procedures will help the bridge teams become familiar with the equipment AND help them explain how the equipment is used/ how it works to vetting inspectors. They (VI) will appreciate this as much as anyone.