



نتایج بررسی سانحه تصادم کشتی تانکر سانچی با کشتی فله بر کریستال

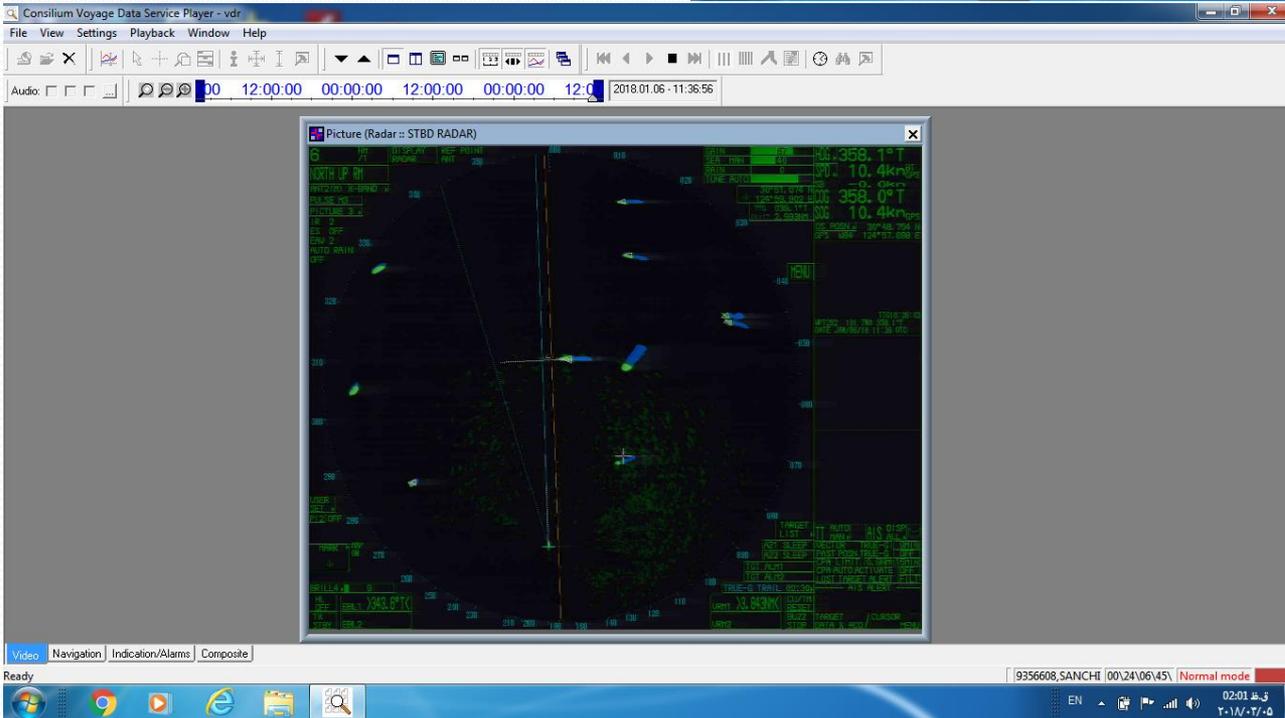
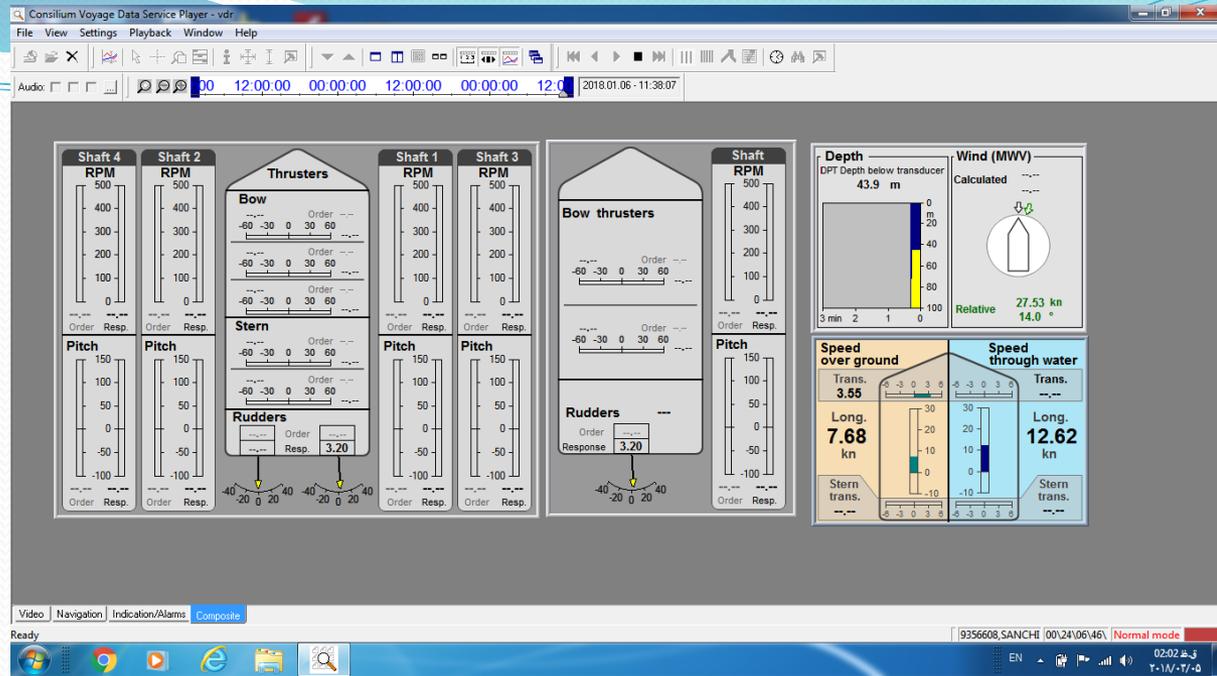
سازمان بنادر و دریانوردی - اردیبهشت ۱۳۹۷



Information exchanged includes:

- (1) Ship certificates, crew certificates, company safety management system documents, PSC inspection reports, general arrangement plan and maneuverability information.
- (2) Analysis of the AIS dynamic data and voyage related data of SANCHI, SANCHI's VDR playback information and identity of watchkeepers on SANCHI's bridge at the time of the accident.
- (3) The distress alert of SANCHI's INMARSAT C and survey of SANCHI's shipwreck.
- (4) SANCHI's Last port departure report, bill of lading, stowage plan and cargo characteristics.
- (5) The progress of the technical recovery of CF CRYSTAL's VDR data.
- (6) VDR data from MAERSK SHAMS and TRF MONGSTAD. 5
- (7) Pictures and video data of Emergency response and SAR.
- (8) Interview of CF CRYSTAL's crew.

اطلاعات جعبه سیاه تانکر سانچی



اطلاعات جعبه سیاه کشتی کریستال

Live Player V4

File Tool Configuration Help

FURUNO Product Name : VR-3000S

System Time : 06/01/2018 14:02:57
Local Time : **/**/**** **:**:**

RAP LEDs:

POWER STATUS:

CONTROL: track 1 06/01/2018 14:01:00 — 04:05:00 — 06/01/2018 18:06:00
x 1.0

Conning Serial Analog/Digital Radar Alarm Event AIS Viewer Data

UTC Time	14:02:57	Heading True 100° 110° 120° 130° 140° 150° 126°	Radar Range: 6.0000 nm /1.0000 nm
UTC Date	06 01 2018		
Datum	WGS84	R.O.T -100 100	Radar
Latitude	-		
Longitude	-	STW 0Knt 4Knt	Radar
COG	301.4°		
Telegraph Demand Position	-	Sub Telegraph 90 45 0 45 90	Depth Om m
Order	-		
Answer	-	SOG - [knt] Rel Wind True Wind	Depth
Telegraph Control Location	-		
Order	-	Connected : Extracted Data (F:\Sanchi\Crystal\20180124123422) [playing audio is authorized]	02:12 ظ ۲۰۱۸/۰۲/۰۵
Answer	-		
Sub Telegraph	-		
Order	-		

The screenshot displays the Furuno VR-3000S interface. On the left, a data table shows UTC Time (14:02:57), UTC Date (06 01 2018), Datum (WGS84), Latitude (-), Longitude (-), COG (301.4°), and telegraph controls. The top center features heading and power status indicators. The top right shows a radar display with a range of 6.0000 nm. The bottom right shows depth and wind information. The system is connected to a data source at F:\Sanchi\Crystal\20180124123422.

15.12.2017

CF-Crystal

- **Departure from Kalama Port, US**
- **Cargo: Sorghum, 63,997.817 tons**
- **Destination: Dongguan, China**
- **ETA: 10.01.2018**
- **No deficiency in PSC report**
- **All seafarers hold valid certificate of competency and medical fitness.**
- **Built in 2011**

کشتی فله بر کریستال حاوی محموله دانه های سویا



16.12.2017

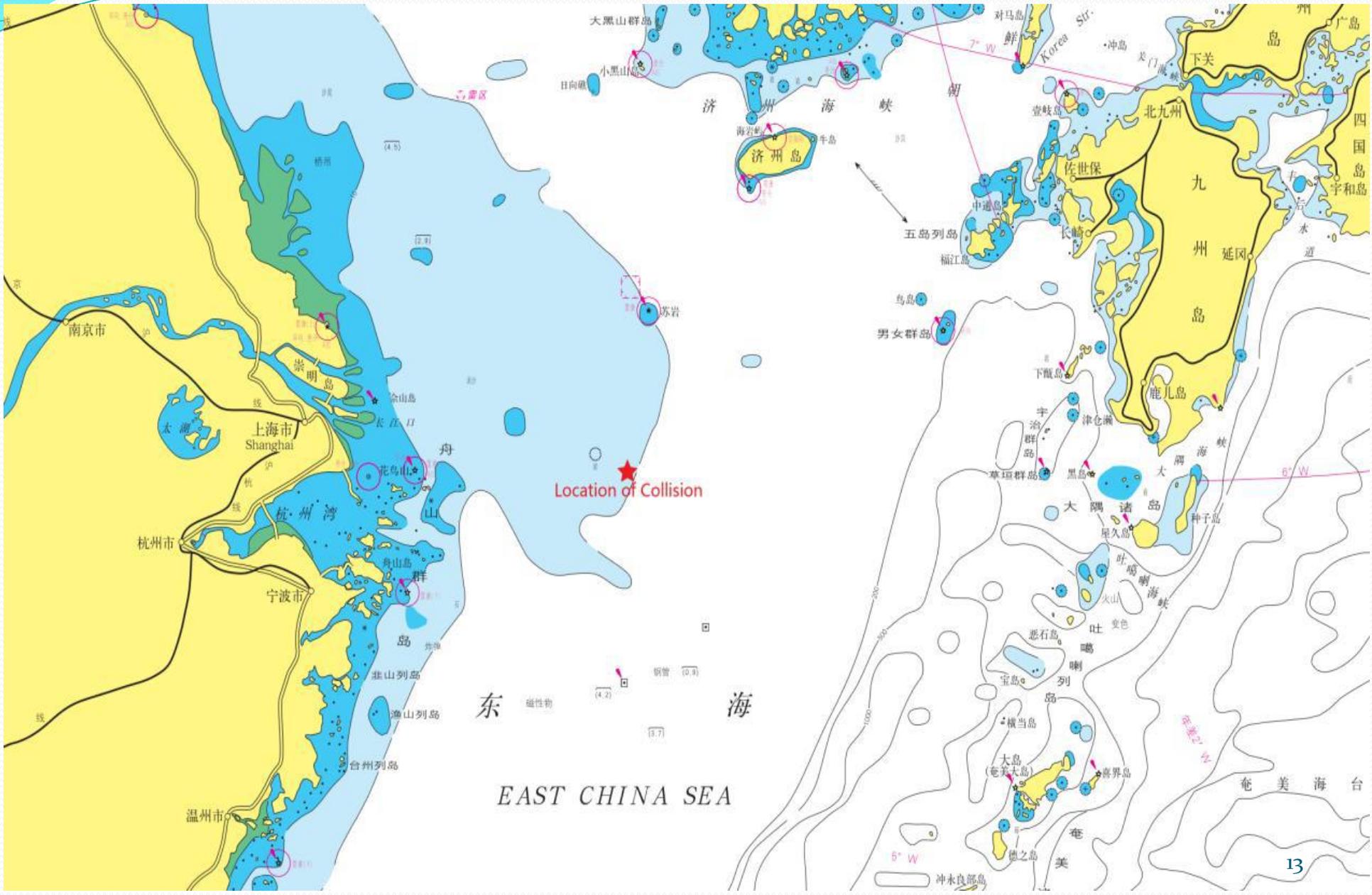
M/T Sanchi

- Departure from Assaluyeh Port, Iran
- **Cargo:** Natural gas condensate (highly flammable, toxic, and of lesser pollution ability, due to aromatic nature), 111,510 tons
- **Destination:** Daesan Port, South Korea
- **ETA:** 08.01.2018
- No deficiency in PSC report.
- **All seafarers hold valid certificate of competency and medical fitness.**
- **Built in 2008**

کشتی تانکر سانچی حاوی محموله میعانات گازی



منطقه بر خورد کشتی فله بر کریستال با تانکر سانچی



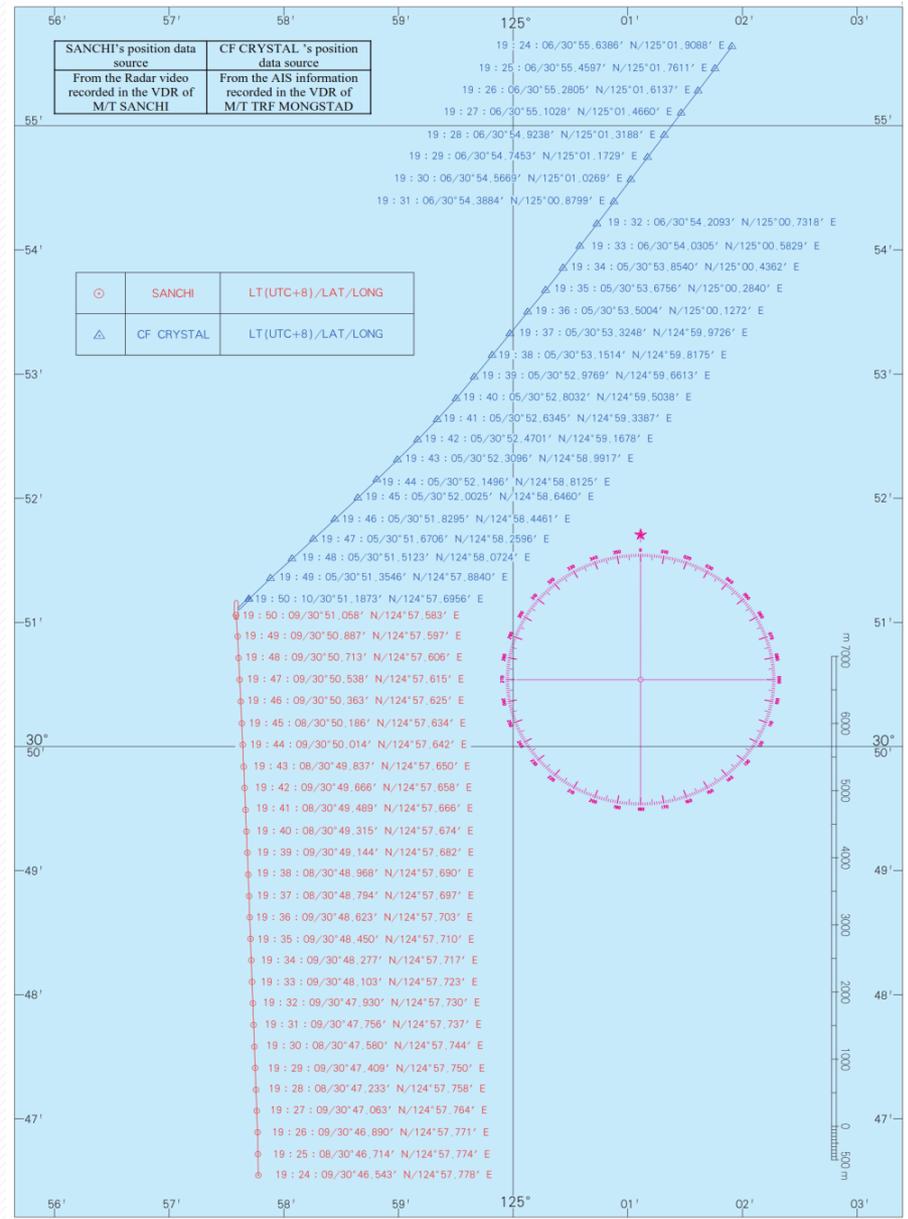
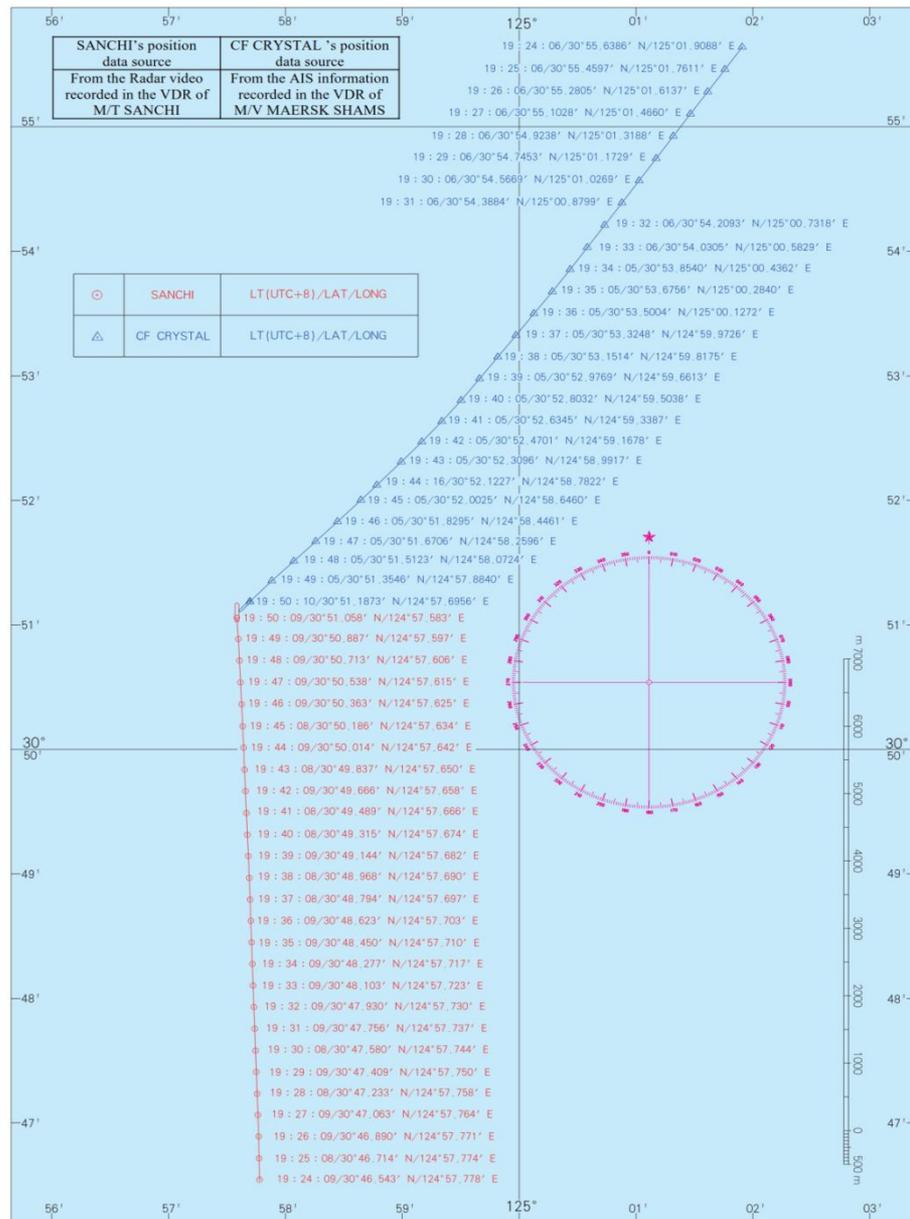
خسارات وارده به کشتی فلز بر کریستال



خسارات وارده به کشتی تانکر سانچی



تحليل مسير بر خورد کشتی فله بر کریستال با تانکر سانچی



06.01.2018

1845

- **Sanchi Shift Change (2nd Officer to 3rd Officer).**
- **Korea local time: 1945**

06.01.2018

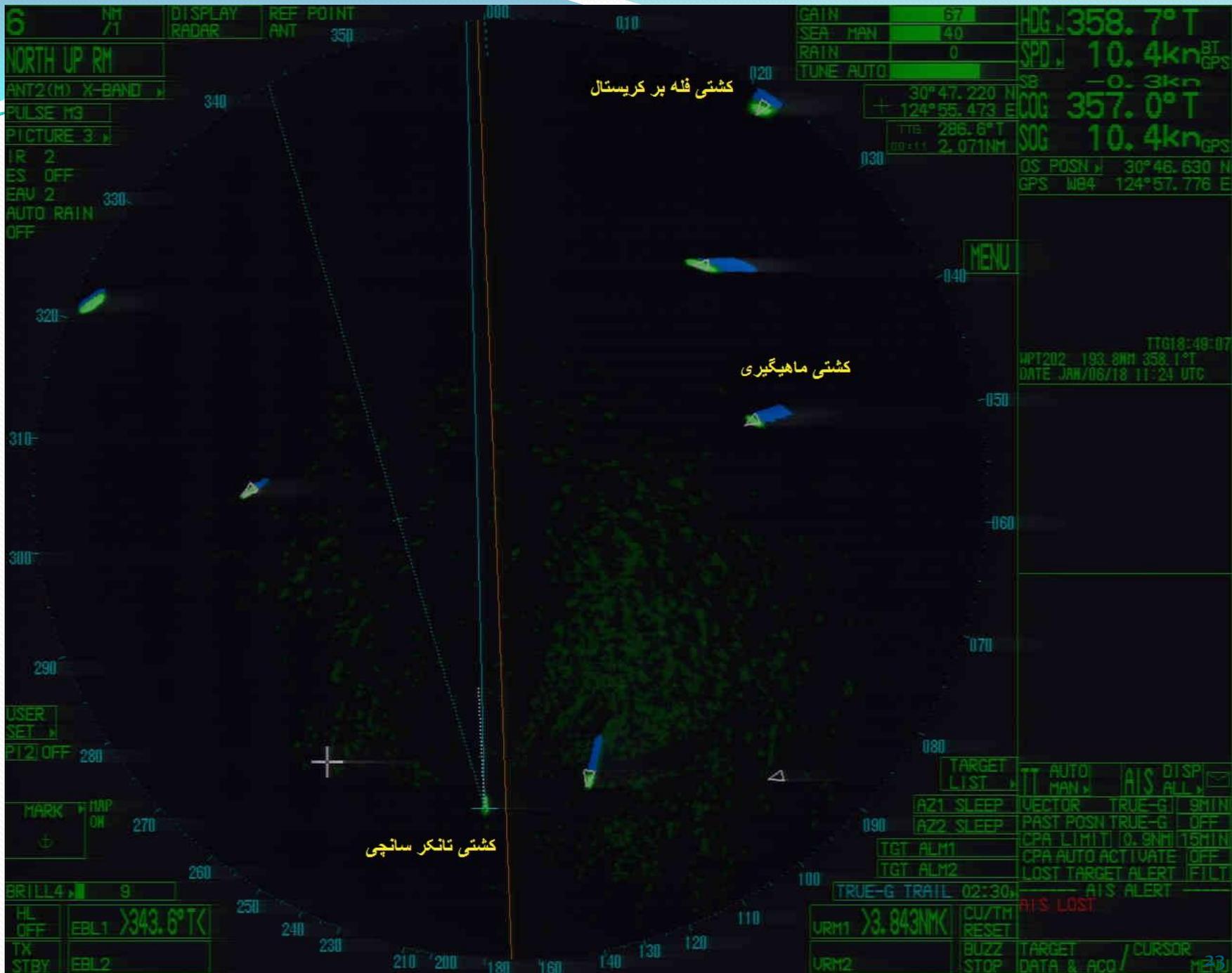
1900

- **Sanchi 2nd Officer handed shift over to 3rd Officer and left the bridge.**
- **Sanchi Extra 2nd officer still stay in chart room.**

06.01.2018

1924

- **Several vessels and boats crossing from starboard bow on Sanchi radar . CF Crystal first appears on radar screen (distance \approx 9.8 nm Speed=13.2 Co=214).**
- **Sanchi Speed: 10.4 knots**
- **Range scale RADAR in use 6 NM off center relative motion.**



6 NM /1 DISPLAY RADAR REF POINT ANT 350
 NORTH UP RM
 ANT2(M) X-BAND
 PULSE M3
 PICTURE 3
 IR 2
 ES OFF
 EAV 2
 AUTO RAIN OFF

340
 330
 320
 310
 300
 290

USER SET
 PT2 OFF 280
 MARK MAP ON 270
 BRILL4 9
 HL OFF EBL1 >343.6°T
 TX STBY EBL2

010
 020
 030
 040
 050
 060
 070
 080
 090
 100
 110
 120
 130
 140
 150
 160
 170
 180
 190
 200
 210
 220
 230
 240
 250
 260
 270
 280
 290
 300
 310
 320
 330
 340
 350

کشتی فله بر کریستال

کشتی ماهیگیری

کشتی تانکر سانچی

GAIN 67
 SEA MAN 40
 RAIN 0
 TUNE AUTO
 30° 47.220 N
 + 124° 55.473 E
 TTG 286.6°T
 00+11 2.071NM
 HDG 358.7°T
 SPD 10.4kn^{BT} GPS
 SB -0.3kn
 COG 357.0°T
 SOG 10.4kn^{GPS}
 OS POSN 30° 46.630 N
 GPS WB4 124° 57.776 E
 MENU
 TTG18:48:07
 WPT202 193.8NM 358.1°T
 DATE JAN/06/18 11:24 UTC
 TARGET LIST
 AZ1 SLEEP
 AZ2 SLEEP
 TGT ALM1
 TGT ALM2
 TRUE-G TRAIL 02:30
 URM1 >3.843NM
 URM2
 CU/TH RESET
 BUZZ STOP
 AIS DISP ALL
 VECTOR TRUE-G 9MIN
 PAST POSN TRUE-G OFF
 CPA LIMIT 0.9NM 15MIN
 CPA AUTO ACTIVATE OFF
 LOST TARGET ALERT FILT
 AIS ALERT
 AIS LOST
 TARGET DATA & ACQ / CURSOR

010
 020
 030
 040
 050
 060
 070
 080
 090
 100
 110
 120
 130
 140
 150
 160
 170
 180
 190
 200
 210
 220
 230
 240
 250
 260
 270
 280
 290
 300
 310
 320
 330
 340
 350

06.01.2018

1930

- **Sanchi 3/O talked about target A and B, lighting signals then assessed**
- **All of them passing astern**

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM

ANT2(M) X-BAND W
PULSE M3
PICTURE 3 W
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

USER SET W

PT2 OFF 280

MARK MAP ON 270

BRILL4 9

HL OFF EBL1 >343.6°TK
TX STBY EBL2

GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30° 48.260 N
+ 124° 55.437 E
TTG: 286.6°T
00+11 2.071NM

HOG 358.0°T
SPD 10.4kn^{BT} GPS
SB 0.0kn
COG 358.0°T
SOG 10.4kn^{GPS}
OS POSN W 30° 47.669 N
GPS W84 124° 57.740 E

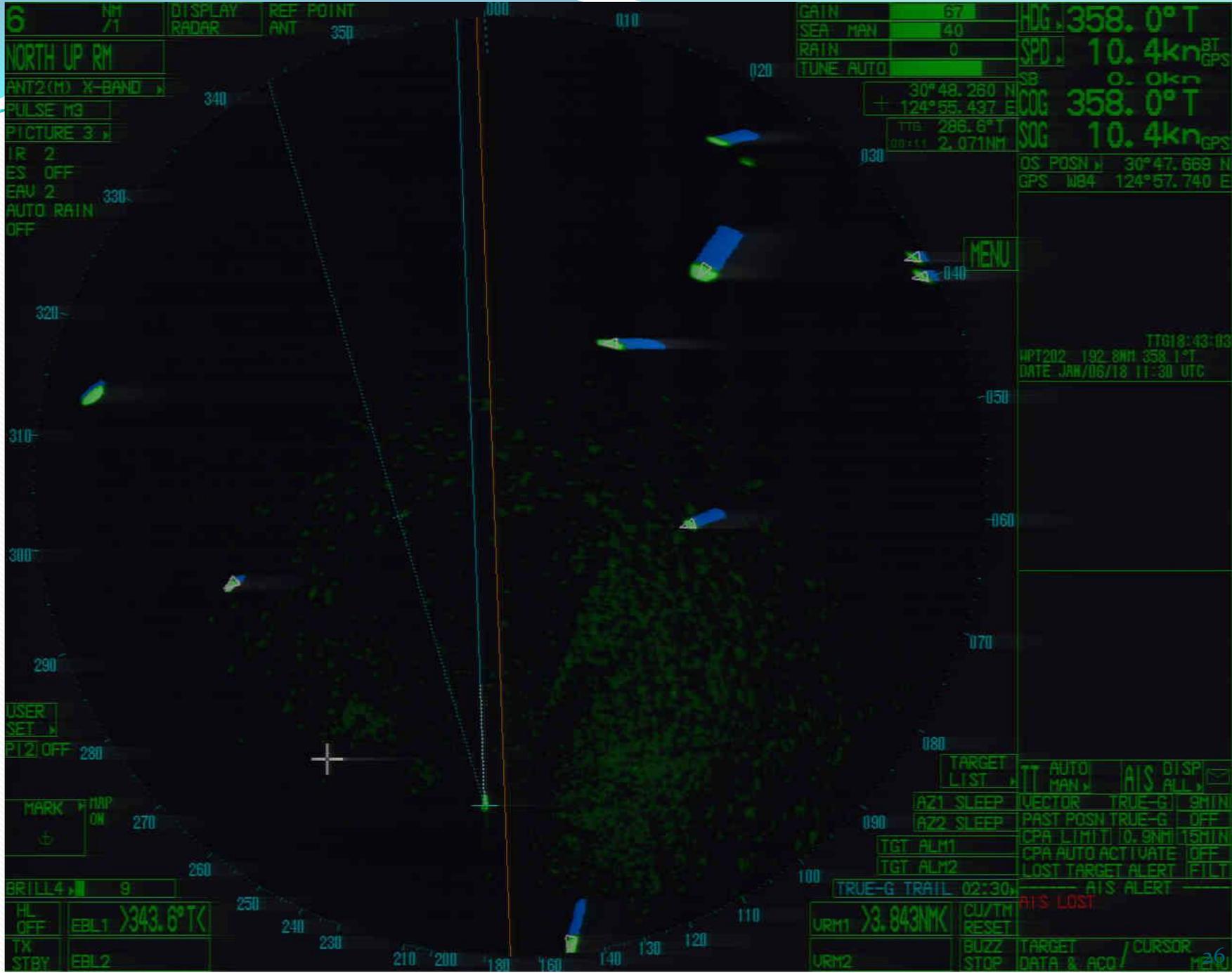
MENU

TTG18:43:03
WPT202 192 8NM 358.1°T
DATE JAN/06/18 11:30 UTC

TARGET LIST

TT AUTO MAN W AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 10.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
TRUE-G TRAIL 02:30 AIS ALERT
AIS LOST
CUR/TM RESET
BUZZ STOP TARGET DATA & ACD / CURSOR MENU

URM1 >3.843NM
URM2



06.01.2018

1931

- **CF Crystal watchman (CoC Holder) seen Sanchi about 7 NM on her portside (Interview)**
- **Said: I checked again and found that the CPA did not change, then I did not pay any more attention to that vessel**

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

USER SET
PT2 OFF
MARK MAP ON
BRILL4 9
HL OFF EBL1 >343.6°TK
TX STBY EBL2

GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

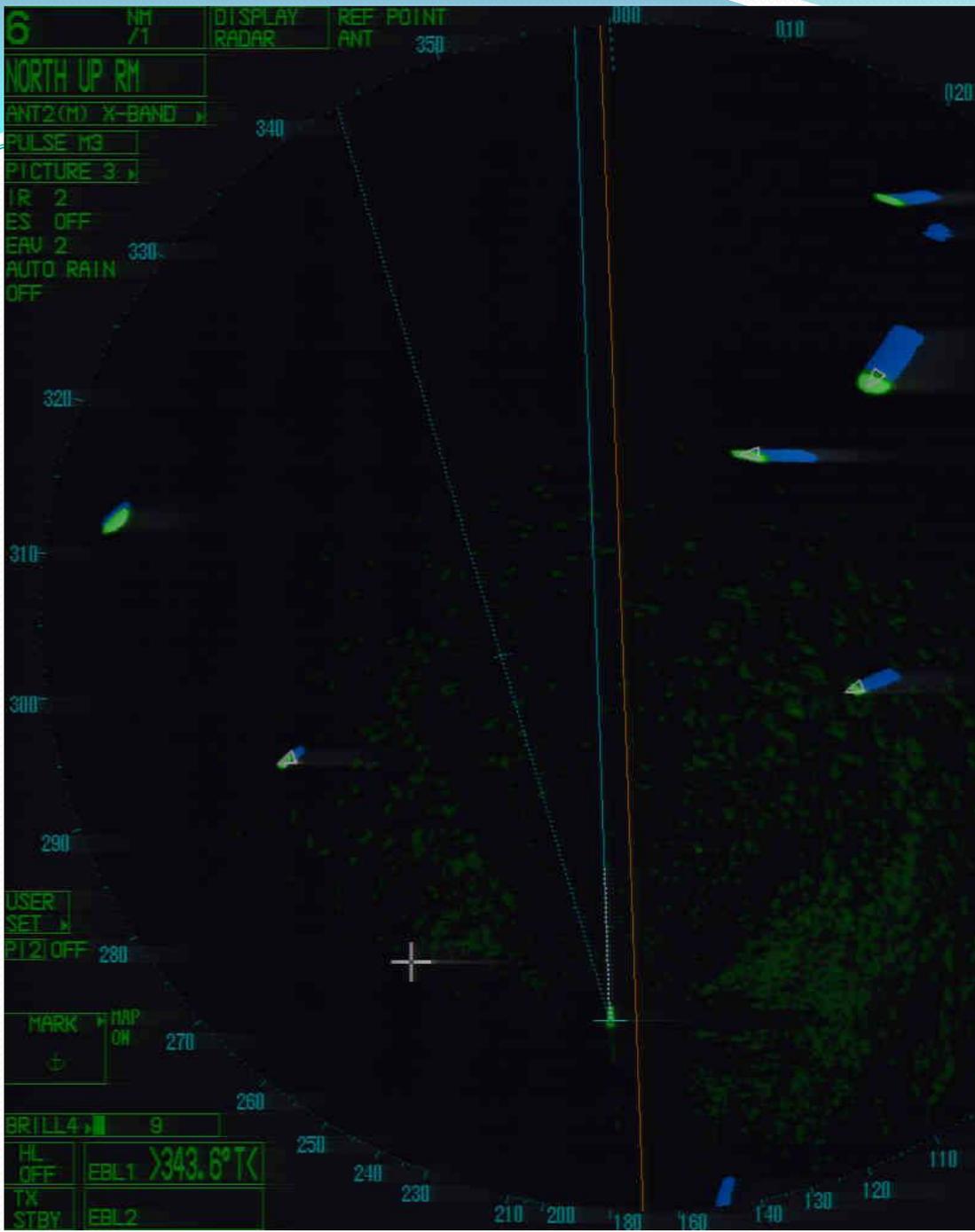
30° 48.433 N
124° 55.430 E
TTG 286.6°T
DB+11 2.071NM

HOG 358.0°T
SPD 10.4kn^{BT} GPS
SB 0.0kn
COG 358.0°T
SOG 10.4kn^{GPS}
OS POSN 30° 47.840 N
GPS W84 124° 57.734 E

MENU

TTG18:42:03
WPT202 192.6NM 358.1°T
DATE JAN/06/18 11:31 UTC

TARGET LIST
TT AUTO AIS DISP
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 10.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
TRUE-G TRAIL 02:30
AIS ALERT
URM1 >3.843NM CU/TM RESET
URM2 BUZZ STOP TARGET DATA & ACQ / CURSOR MEV29



06.01.2018

1932

- Sanchi duty officer again start assessing the situation , Said:
- From Sanchi BCR (Bow Crossing Range) (of target A and B)are minus.
- 3/o talked about 3 targets .
- The bearing/range of CF Crystal was 022°/6.8nm from VDR radar data.
- Crystal Chief officer found 2 AIS targets CPA on radar 0.9 and 0.4, [first interview on 25 Jan 2018]
- he confirmed that 0.9 NM was MT Sanchi passing my bow[2nd interview on 2 Mar 2018].

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM

ANT2(M) X-BAND M
PULSE M3
PICTURE 3 M
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

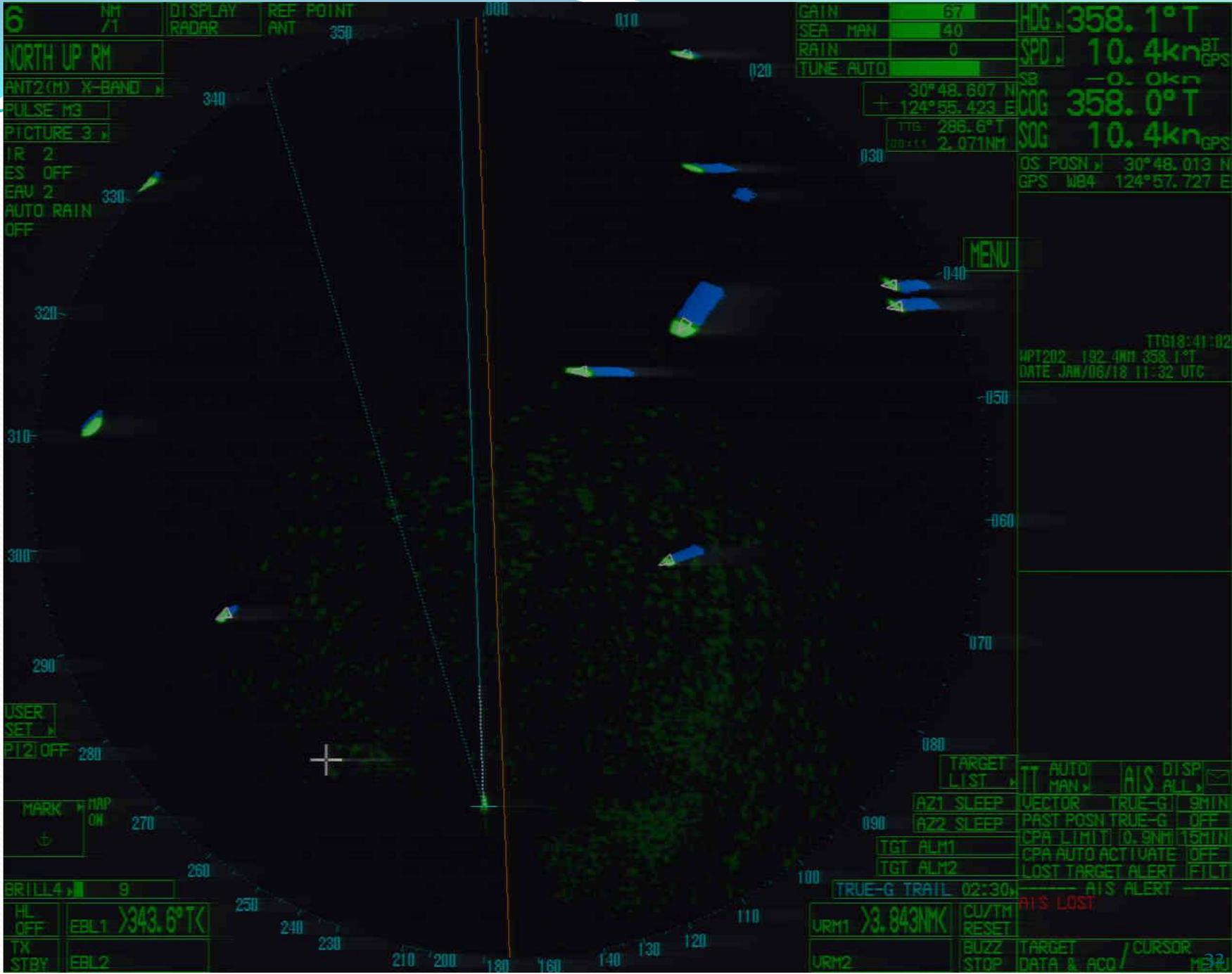
USER SET M

PI2 OFF 280

MARK MAP ON 270

BRILL4 9

HL OFF EBL1 >343.6°TK
TX STBY EBL2



GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30° 48.607 N
+ 124° 55.423 E
TTG: 286.6°T
00+11 2.071NM

HOG 358.1°T
SPD 10.4kn^{BT}_{GPS}
SB -0.0kn
COG 358.0°T
SOG 10.4kn_{GPS}
OS POSN 30° 48.013 N
GPS W84 124° 57.727 E

MENU

TTG18:41:02
WPT202 192 NM 358.1°T
DATE JAN/06/18 11:32 UTC

TARGET LIST

TT AUTO MAN AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 0.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
TRUE-G TRAIL 02:30 LOST TARGET ALERT FILT
AIS ALERT
AIS LOST
CU/TM RESET
BUZZ STOP TARGET DATA & ACD / CURSOR M321

URM1 >3.843NM
URM2

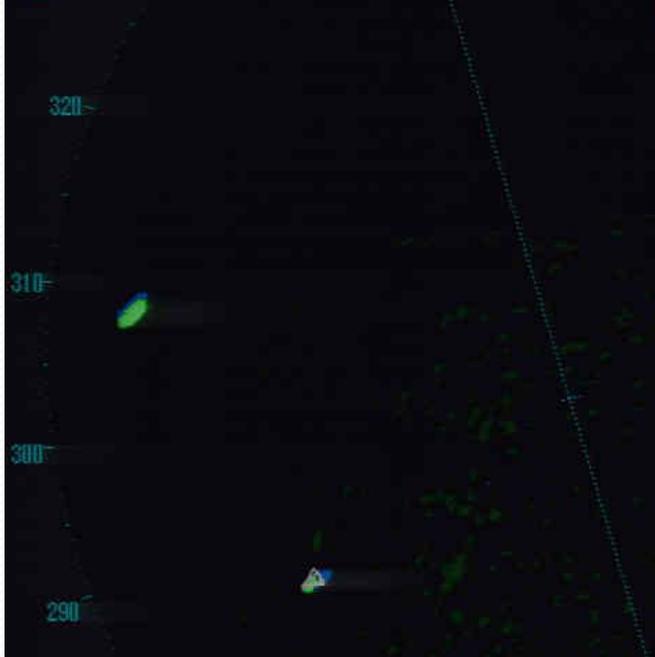
06.01.2018

1934

- **Crystal C/O said that he started to adjust the course from 217 to 225 with the intention to go back our planned passage .My vessel was deviated to port of the planned passage at that time (2nd interview).**

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
TR 2
ES OFF
EAV 2
AUTO RAIN OFF



USER SET
PI2 OFF 280
MARK MAP ON 270

BRILL4 9
HL OFF EBL1 >343.6°TK
TX STRY EBL2

000 010 020 030 040 050 060 070 080 090 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350
GAIN 57
SEA MAN 40
RAIN 0
TUNE AUTO
HOG 358.1°T
SPD 10.4kn^{BT}_{GPS}
SB -0.0kn
COG 358.0°T
SOG 10.4kn_{GPS}
30°48.954 N
124°55.410 E
TTG 286.6°T
00+11 2.071NM
OS POSN 30°48.363 N
GPS WB4 124°57.713 E

MENU

TTG18:39:01
WPT202 192 1NM 358.1°T
DATE JAN/06/18 11:34 UTC

TARGET LIST
TT AUTO MAN AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G DEF
TGT ALM1 CPA LIMIT 0.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
LOST TARGET ALERT FILT
TRUE-G TRAIL 02:30
AIS ALERT

URM1 >3.843NM_{CU/TM} RESET
URM2 BUZZ STOP TARGET DATA & ACQ / CURSOR MENU 35

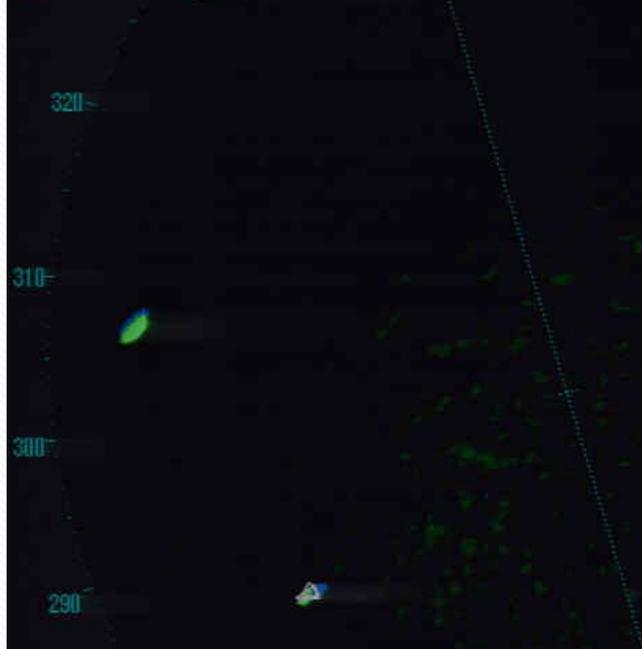
06.01.2018

1935

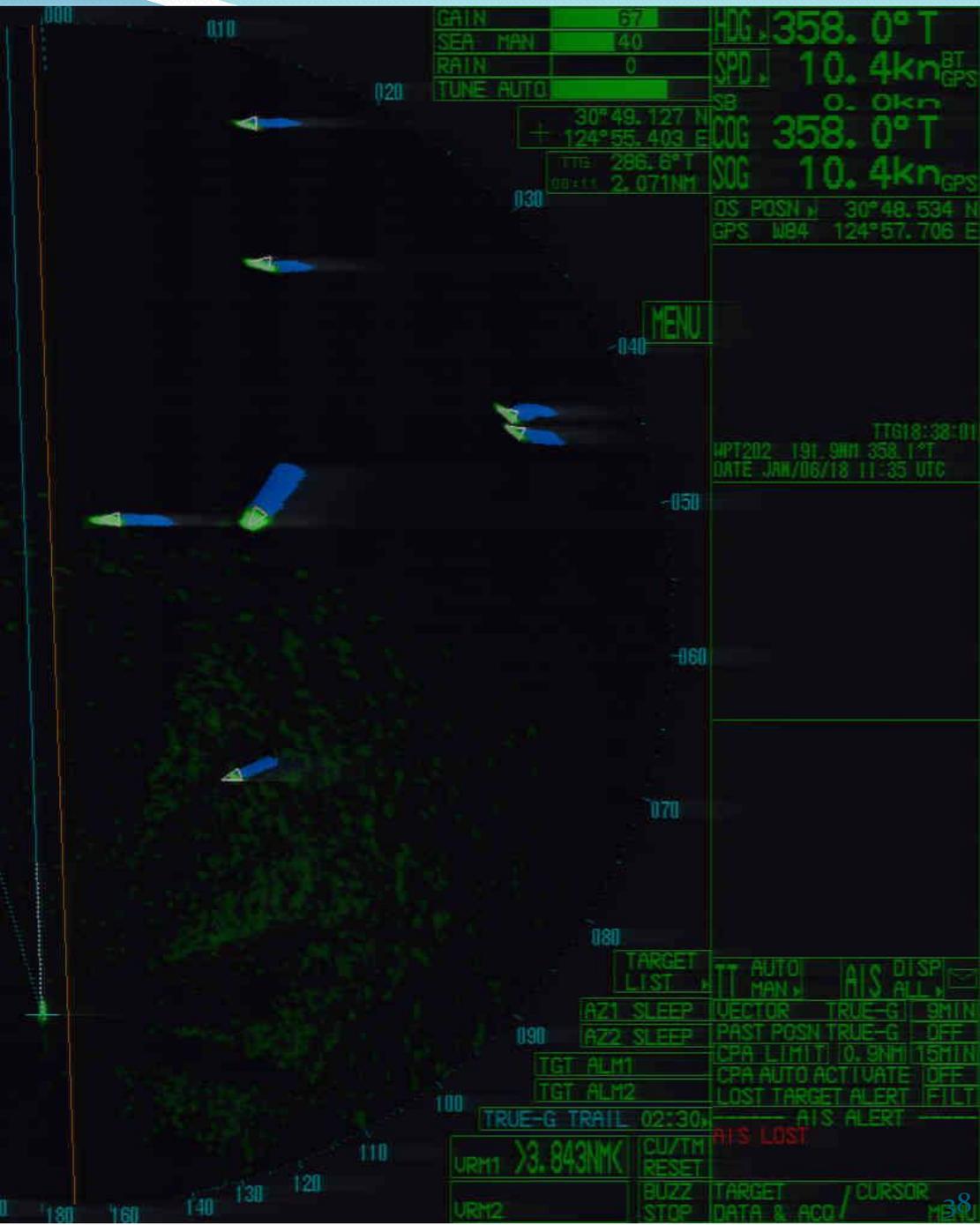
- **MT Sanchi Lookout said a vessel at bearing 013 on radar screen and showing red & green.**
- **Crystal Co: COG: 218**

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF



USER SET
PT2 OFF 280
MARK MAP ON
BRILL4 9
HL OFF EBL1 >343.6°TK
TX STBY EBL2



GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO
HDG 358.0°T
SPD 10.4kn^{BT}_{GPS}
SB 0.0kn
COG 358.0°T
SOG 10.4kn_{GPS}
TTG 286.6°T
00+11 2.071NM
OS POSN 30°48.534 N
GPS W84 124°57.706 E

MENU

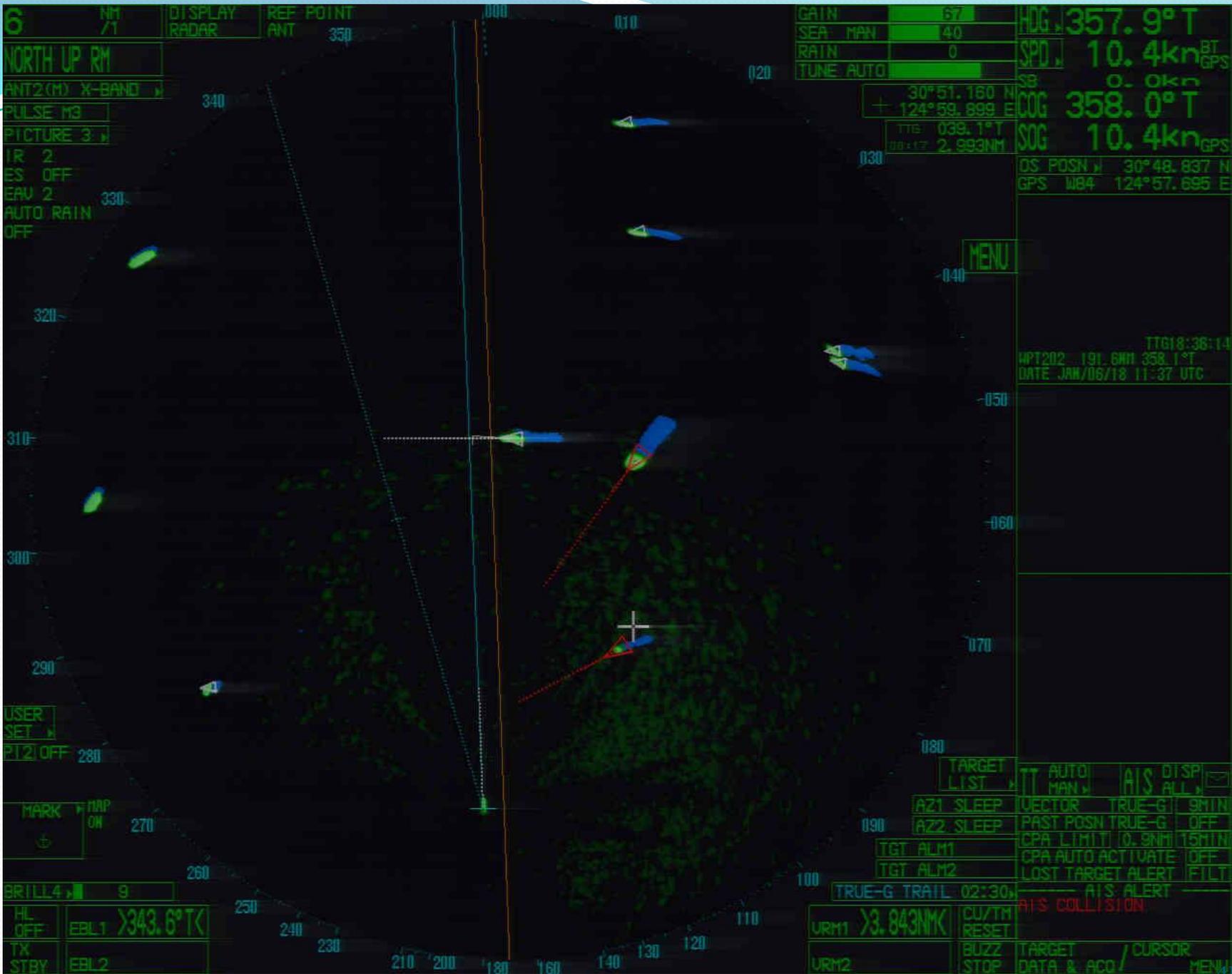
TTG18:38:01
WPT202 191.9NM 358.1°T
DATE JAN/06/18 11:35 UTC

TARGET LIST
TT AUTO MAN
AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 10.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
TRUE-G TRAIL 02:30
AIS ALERT
AIS LOST
CUR/TM RESET
BUZZ STOP
TARGET DATA & ACQ / CURSOR M3

06.01.2018

1936

- **Fishing vessel call Sanchi and asking to pass port to port**
- **The triangle symbols of both targets turned red and the message "AIS COLLISION" appeared in the right lower corner of radar display.**
- **Sound alarm turned off.**



06.01.2018

1939

- **Sanchi 3/O said: Oh, he's talking to another one. You know, never answer these calls. Because if you don't answer, it is not ok to action. But if you answer, he seems ... he confirms with you about his action. So he takes action, whatever he said in the radio and you don't understand. But if you don't answer, he shall be forced to take action to make himself clear, understand?**



6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2 (M) X-BAND W
PULSE M3
PICTURE 3 W
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

USER SET W
PI 2) OFF 280
MARK W MAP ON 270
BRILL 4 W 9
HL OFF EBL1 >343.6°TK
TX STBY EBL2

GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

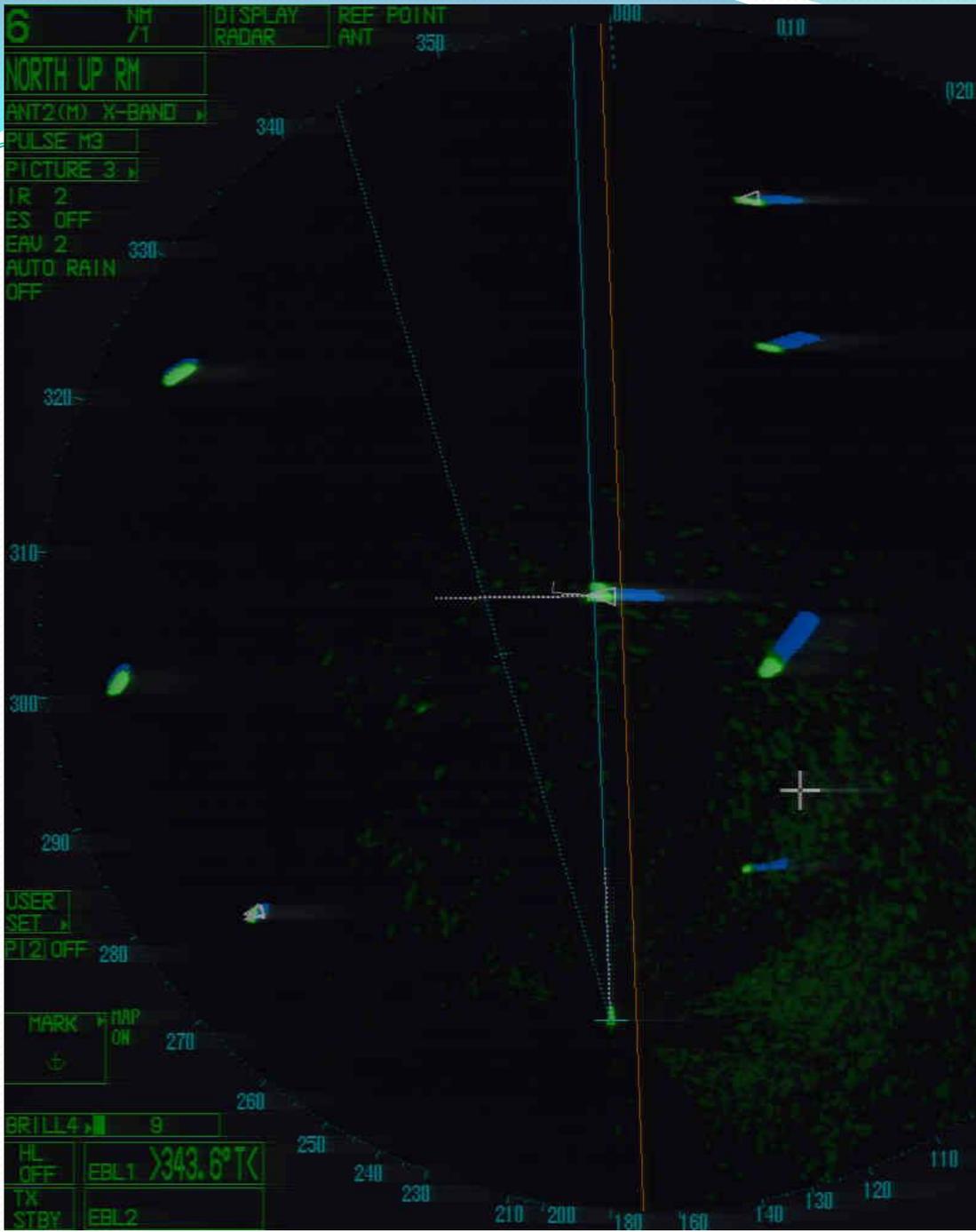
HDG 357.8°T
SPD 10.4kn^{BT}_{GPS}
SB 0.0kn
COG 358.0°T
SOG 10.4kn_{GPS}
OS POSN W 30°49.275 N
GPS WB4 124°57.677 E

30°51.595 N
+ 124°59.881 E
TTE 039.1°T
00+17 2.993NM

MENU

TTG18:33:41
WPT202 191.2NM 358.1°T
DATE JAN/06/18 11:39 UTC

TARGET LIST
TT AUTO MAN W AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 10.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
LOST TARGET ALERT FILT
TRUE-G TRAIL 02:30
AIS ALERT
AIS COLLISION
URM1 >3.843NM CU/TM RESET
URM2 BUZZ STOP TARGET DATA & ACQ / CURSOR ME44



06.01.2018

1940

- **Sanchi Duty officer ordered to signal to small vessel (ALDIS Lamp signals) with five short flashes to attract attention.**

06.01.2018

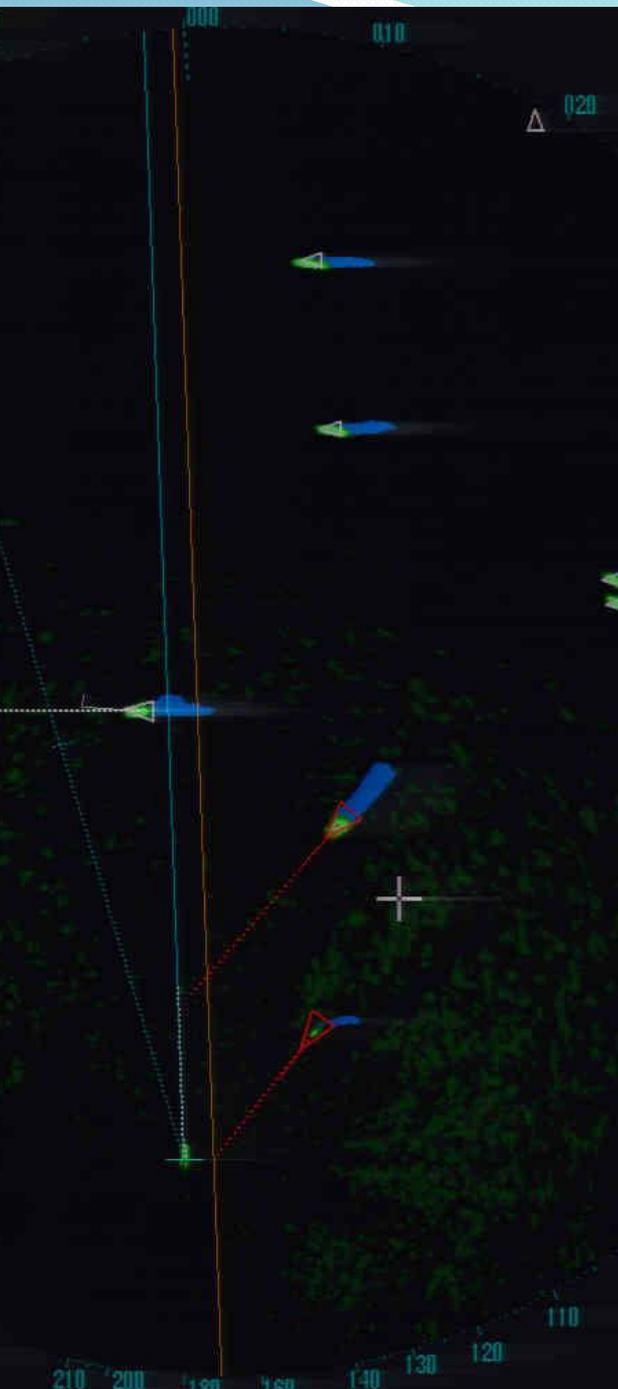
1941

- **Sanchi Signals to fishing vessel (5 short flashes by ALDIS Lamp).**
- **- Fishing vessel turns to port side**
- **Crystal Continue with course adjusting**
-

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

340
330
320
310
300
290
280
270
260
250
240
230
210
200
180
160
140
130
120
110



GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30° 51.899 N
124° 59.866 E
TTG: 039.1° T
00+17 2.993NM

HOG 358.0° T
SPD 10.5kn^{BT}_{GPS}
SB 0.0kn
COG 358.0° T
SOG 10.5kn_{GPS}
OS POSN 30° 49.579 N
GPS WB4 124° 57.663 E

MENU

TTG18:31:55
WPT202 190.9NM 358.1° T
DATE JAN/06/18 11:41 UTC

TARGET LIST
TT AUTO MAN AIS DISP ALL
A21 SLEEP VECTOR TRUE-G 9MIN
A22 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 0.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
LOST TARGET ALERT FILT
AIS ALERT

TRUE-G TRAIL 02:30
URM1 >3.843NM< CU/TM RESET
URM2 BUZZ STOP TARGET DATA & ACQ / CURSOR 48 MENU

06.01.2018

1942

- End of Crystal adjusting course to 225°
- SANCHI was about 3.1 nm
- Question: Did you notice the CPA with SANCHI change after you changed course
- C/O: After I changed course, I noticed the CPA with SANCHI was 0.4nm.
- Question: how you did determine the CPA with SANCHI, by radar echo or AIS?
- C/O: I did not see radar, only by AIS signal on my port radar.

- Sanchi 3/O: Yes, if I take any action, I make everything worse. You know, they shall take action. They are the smaller vessels.

6 NH /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2 (M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

USER SET
P12 OFF
MARK MAP ON
BRILL4 9
HL OFF EBL1 >343.6°TK
TX STBY EBL2

GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30°52.073 N
124°59.858 E
TTG 039.1°T
00:17 2.993NM

030

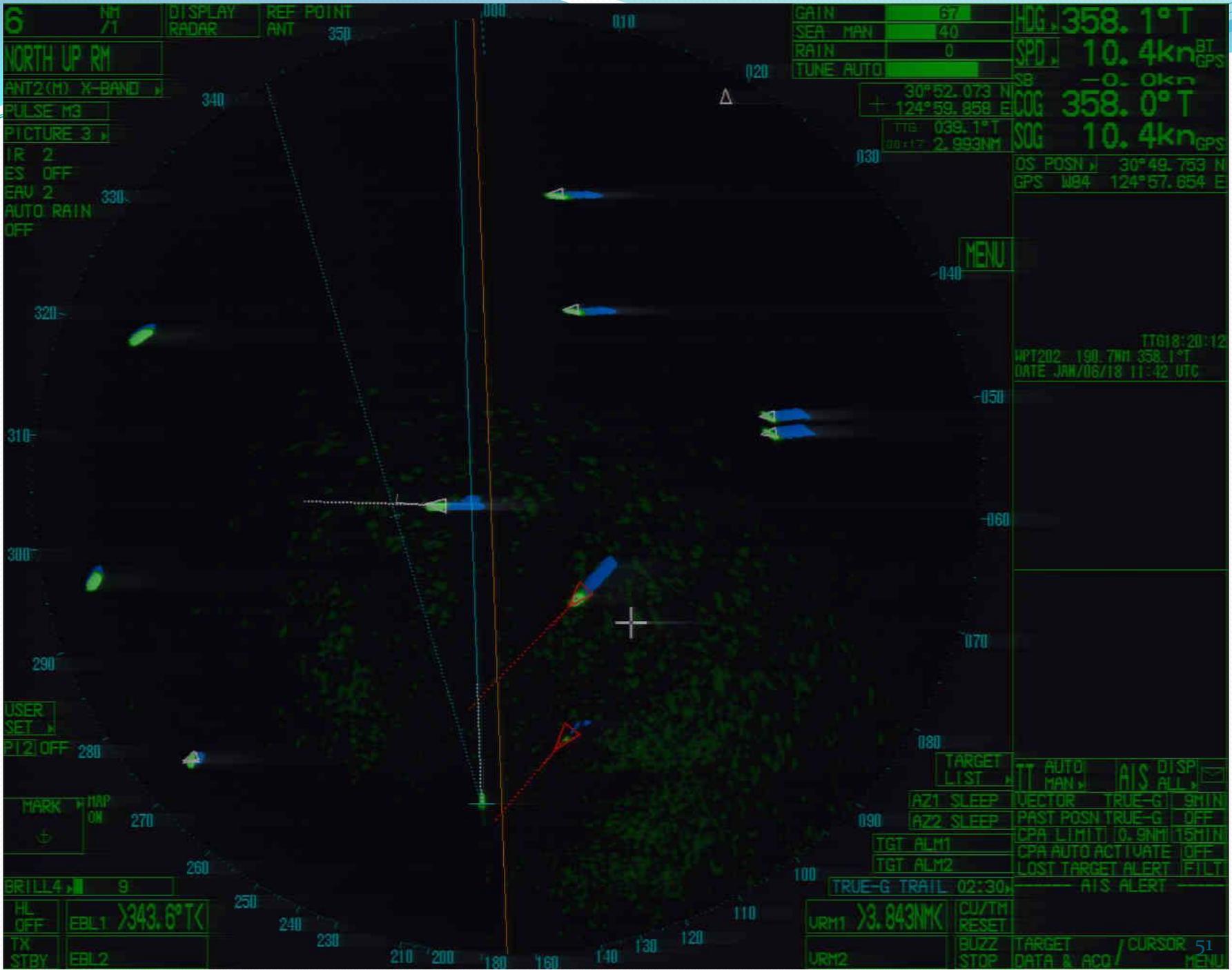
HDG 358.1°T
SPD 10.4kn BT GPS
SS -0.0kn
COG 358.0°T
SOG 10.4kn GPS
OS POSN 30°49.753 N
GPS W84 124°57.654 E

MENU

TTG18:20:12
WPT02 190.7NM 358.1°T
DATE JAN/06/18 11:42 UTC

TARGET LIST
TT AUTO MAN
AIS DISP ALL
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 0.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
LOST TARGET ALERT FILT
TRUE-G TRAIL 02:30M AIS ALERT

URM1 >3.843NM< CU/TM RESET
URM2 BUZZ STOP TARGET DATA & ACO / CURSOR 51 MENU



06.01.2018

1944

- Question from Crystal 3rd officer :After you checked your radar,did you realize there's a risk of collsion.
- Crystal 3/O:I thought it was a fishing vessel.There was no radar echo only AIS symbol.[

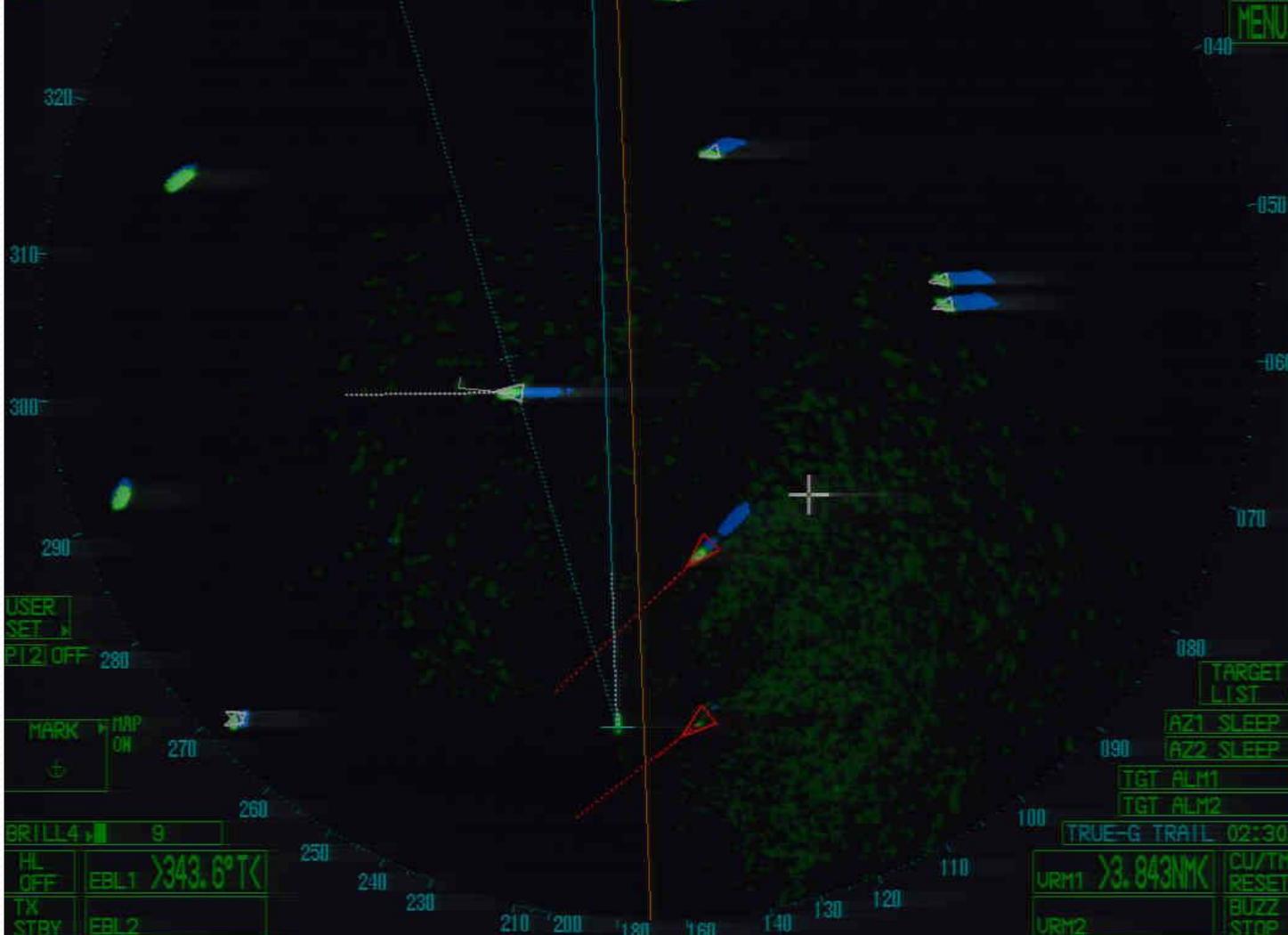
06.01.2018

1945

- Sanchi duty officer start assessing the situation of CF Crystal. CF CRYSTAL was about 2 nm away bearing 025° .
- Sanchi 3/O: Ok, give a signal to this one. We had this one on our starboard side, we should take action. But what actually can I say, in this situation? My starboard side is full. It was five?
- Crystal:
- 1- course steady on 226°
- 2- Watch keeping Shift Change (Chief Officer to 3rd Officer).

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF



GAIN 57
SEA MAN 40
RAIN 0
TUNE AUTO

HOG 358.1°T
SPD 10.5kn^{BT}_{GPS}
SB -0.0kn
COG 358.0°T
SOG 10.5kn_{GPS}
OS POSN 30°50.232 N
GPS W84 124°57.632 E

30°52.552 N
+ 124°59.836 E
TTG: 039.1°T
00+17 2.993NM

MENU

TTG18:17:27
WPT202 190.2NM 358.1°T
DATE JAN/06/18 11:45 UTC

USER SET
PI2 OFF 280

MARK MAP ON 270

BRILL4 9

HL OFF EBL1 >343.6°T
TX STBY EBL2

TARGET LIST

TT AUTO MAN AIS DISP
VECTOR TRUE-G SHIN
PAST POSN TRUE-G OFF
CPA LIMIT 0.9NM 15MIN
CPA AUTO ACTIVATE OFF
LOST TARGET ALERT FILT
AIS ALERT
AIS COLLISION

AZ1 SLEEP
AZ2 SLEEP
TGT ALM1
TGT ALM2

TRUE-G TRAIL 02:30

URM1 >3.843NMK CU/TH RESET
URM2 BUZZ STOP TARGET DATA & ACD / CURSOR

06.01.2018

1946

- **Crystal Chief Officer left the bridge.**
- **3rd officer on watch.**
- **Question:When Crystal chief officer hand over the watch,did he mention the situation?**
- **3/O answered:No,he only said “ the traffic was clear”. [interview on 25 Jan 2018]**
- **Question:How much time passed after you took over your watch when the collision happened?**
- **Crystal 3/O: At 1943LT on 6 Jan I came out of my cabin and went up to bridge .At about 1945LT.I took over my watch .Chief mate did not tell me the situation of the other vessel.When the accident happened,I didn't check the time.**

06.01.2018

1946

- Sanchi Lookout identifies CPA zero with CF Crystal (distance about 1.6 NM).
- - Fishing vessel cleared from Sanchi astern.
- - Signals to CF Crystal (5 short flashes by ALDIS Lamp) to attract attention.

- AB:Charlie is passed, right? A little to starboard?
- 3/O:Starboard? Why?
- AB:What's the CPA? CPA is ... zero, zero.

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM

ANT2(M) X-BAND

PULSE M3

PICTURE 3

TR 2

ES OFF

EAV 2 330

AUTO RAIN

OFF

320

310

300

290

USER SET

P12 OFF 280

MARK MAP ON 270

BRILL4 9

HL OFF EBL1 >343.6°TK

TX STBY EBL2

000

010

020

030

040

MENU

050

060

070

080

090

100

110

120

130

140

150

160

170

180

GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30°52.814 N
+ 124°59.821 E

TTG 039.1°T
00 x 17 2.993NM

HDG 358.1°T
SPD 10.5kn^{BT}GPS

SB -0.2kn
COG 357.0°T

SOG 10.5kn^{GPS}

OS POSN 30°50.494 N
GPS W84 124°57.617 E

TTG18:15:58
WPT202 190.0NM 358.1°T
DATE JAN/06/18 11:46 UTC

TARGET LIST TT AUTO MAN AIS DISP ALL

AZ1 SLEEP VECTOR TRUE-G 9MIN

AZ2 SLEEP PAST POSN TRUE-G OFF

TGT ALM1 CPA LIMIT 0.9NM 15MIN

TGT ALM2 CPA AUTO ACTIVATE OFF

TRUE-G TRAIL 02:30 LOST TARGET ALERT FILT

URM1 >3.843NM CU/TM RESET

URM2 BUZZ STOP TARGET DATA & ACC / CURSOR 61

MENU

06.01.2018

1947

- - Sanchi 3/O: It's a small vessel, right?
- - AB: No, It's a big vessel.
- - 3/O: So why is she intending to take action like this?
-
- Crystal Duty officer and look out haven't seen Sanchi.

06.01.2018

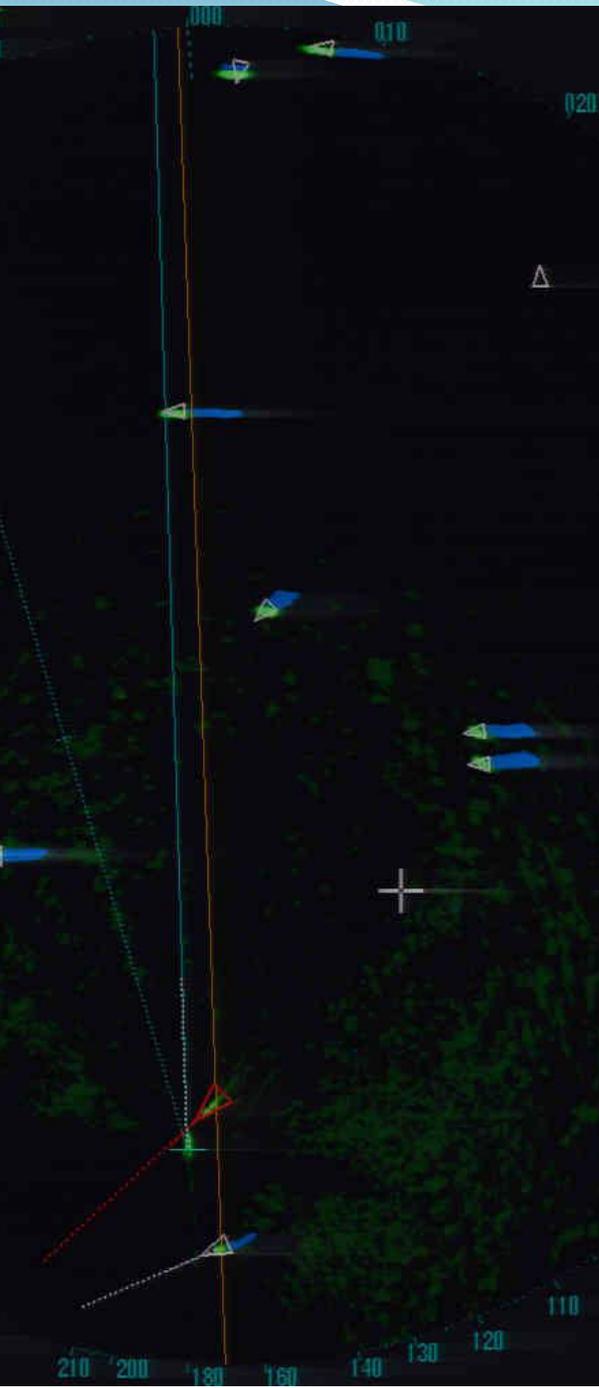
1948

- **Sanchi OOW: calls Captain**
- **3/O: hello captain ,we have a target at Starboard Side. The CPA is zero .the distance is very short distance is short.**
- **Captain ,it is very big ship.**
- **Crystal Duty officer and look out haven't seen Sanchi.**

6 NM /1 DISPLAY RADAR REF POINT ANT 350

NORTH UP RM
ANT2(M) X-BAND
PULSE M3
PICTURE 3
IR 2
ES OFF
EAV 2
AUTO RAIN OFF

340
330
320
310
300
290
280
270
260
250
240
230
210 200 180 160 140 130 120 110



GAIN 67
SEA MAN 40
RAIN 0
TUNE AUTO

30° 53.251 N
+ 124° 59.800 E
TTG 039.1° T
DB 17 2.993NM

HDG 358.3° T
SPD 10.5kn^{BT}_{GPS}
SB -0.0kn
COG 358.0° T
SOG 10.5kn_{GPS}
OS POSN 30° 50.928 N
GPS W84 124° 57.595 E

MENU

TTG18:13:24
WPT02 189.5NM 358.1° T
DATE JAN/06/18 11:49 UTC

USER SET
PT2 OFF 280
MARK MAP ON 270
BRILL4 9
HL OFF EBL1 >343.6° T
TX STBY EBL2

080 TARGET LIST
TT AUTO MAN AIS DISP
AZ1 SLEEP VECTOR TRUE-G 9MIN
AZ2 SLEEP PAST POSN TRUE-G OFF
TGT ALM1 CPA LIMIT 10.9NM 15MIN
TGT ALM2 CPA AUTO ACTIVATE OFF
TRUE-G TRAIL 02:30 LOST TARGET ALERT
URM1 >3.843NM CU/TH RESET
URM2 BUZZ STOP TARGET DATA & ACQ / CURSOR

06.01.2018

1949

- Sanchi 3/O: Oh, why is she not doing anything? Oh man, he's judging
- 3/O: Go to port side, full port side. Oh, man! Full starboard side, full starboard
- side. Full, full, please.
- Captain comes to bridge at 11:49:28
- 3/O:captain she did not take any action.
- Cap: Hard to starboard, hard to starboard
-
- Crystal Duty officer and look notice a ship but still not aware that she was Sanchi.
- - Turn to Starboard ordered by 3rd
-

06.01.2018

1950

- **Sanchi Captain: we are being hit.**
- **Captain: Hard to port. Hard to port**
- **Crystal : Hard to Starboard**

6 NM /1 DISPLAY REF POINT
RADAR ANT 350

NORTH UP RM

ANT2(M) X-BAND

PULSE M3

PICTURE 3

IR 2

ES OFF

EAV 2

AUTO RAIN OFF

320

310

300

290

280

270

260

250

240

230

220

210

200

190

180

170

160

150

140

130

120

110

100

90

340

330

320

310

300

290

280

270

260

250

240

230

220

210

200

190

180

170

160

150

140

130

120

110

100

90

80

70

60

50

000

010

020

030

040

050

060

070

080

090

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

570

580

590

600

610

620

630

640

650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

1180

1190

1200

1210

1220

1230

1240

1250

1260

1270

1280

1290

1300

1310

1320

1330

1340

1350

1360

1370

1380

1390

1400

1410

1420

1430

1440

1450

1460

1470

1480

1490

1500

1510

1520

1530

1540

1550

1560

1570

1580

1590

1600

1610

1620

1630

1640

1650

1660

1670

1680

1690

1700

1710

1720

1730

1740

1750

1760

1770

1780

1790

1800

1810

1820

1830

1840

1850

1860

1870

1880

1890

1900

1910

1920

1930

1940

1950

1960

1970

1980

1990

2000

2010

2020

2030

2040

2050

2060

2070

2080

2090

2100

2110

2120

2130

2140

2150

2160

2170

2180

2190

2200

2210

2220

2230

2240

2250

2260

2270

2280

2290

2300

2310

2320

2330

2340

2350

2360

2370

2380

2390

2400

2410

2420

2430

2440

2450

2460

2470

2480

2490

2500

2510

2520

2530

2540

06.01.2018

1950

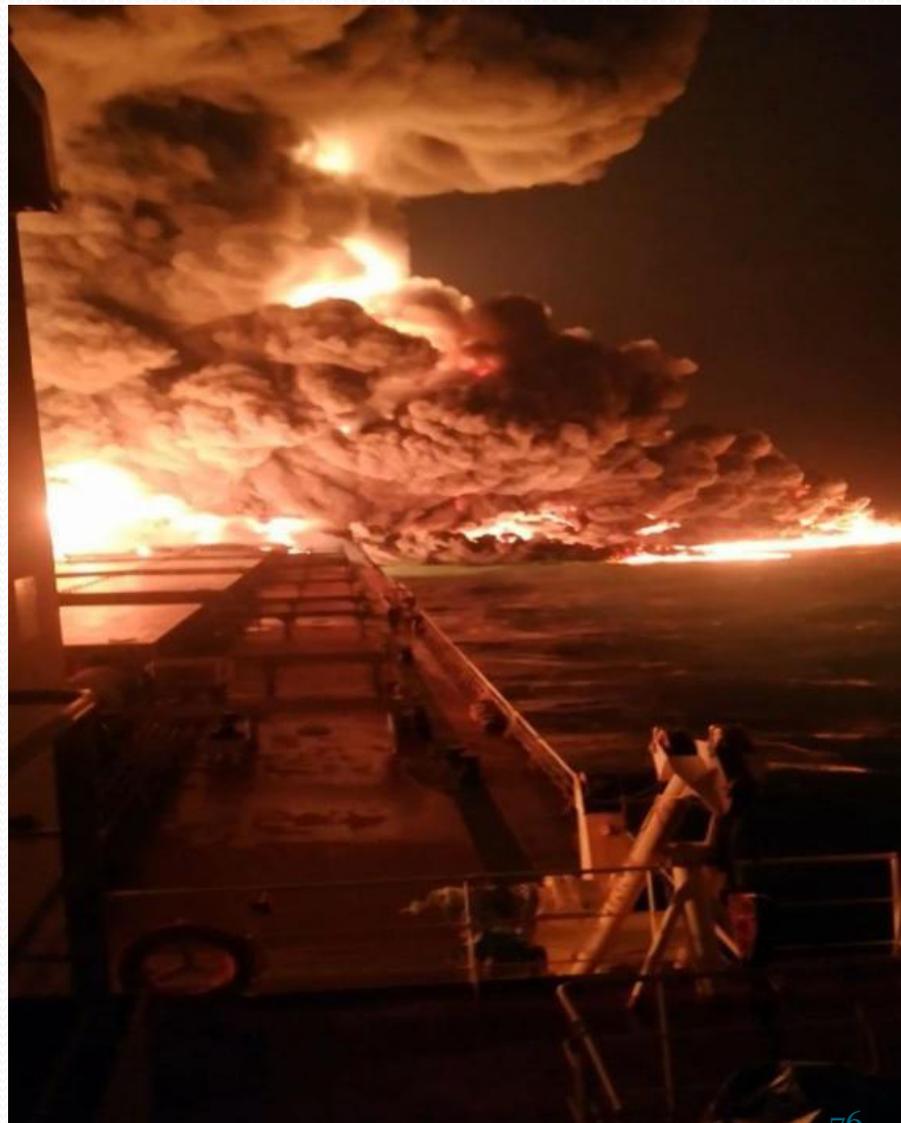
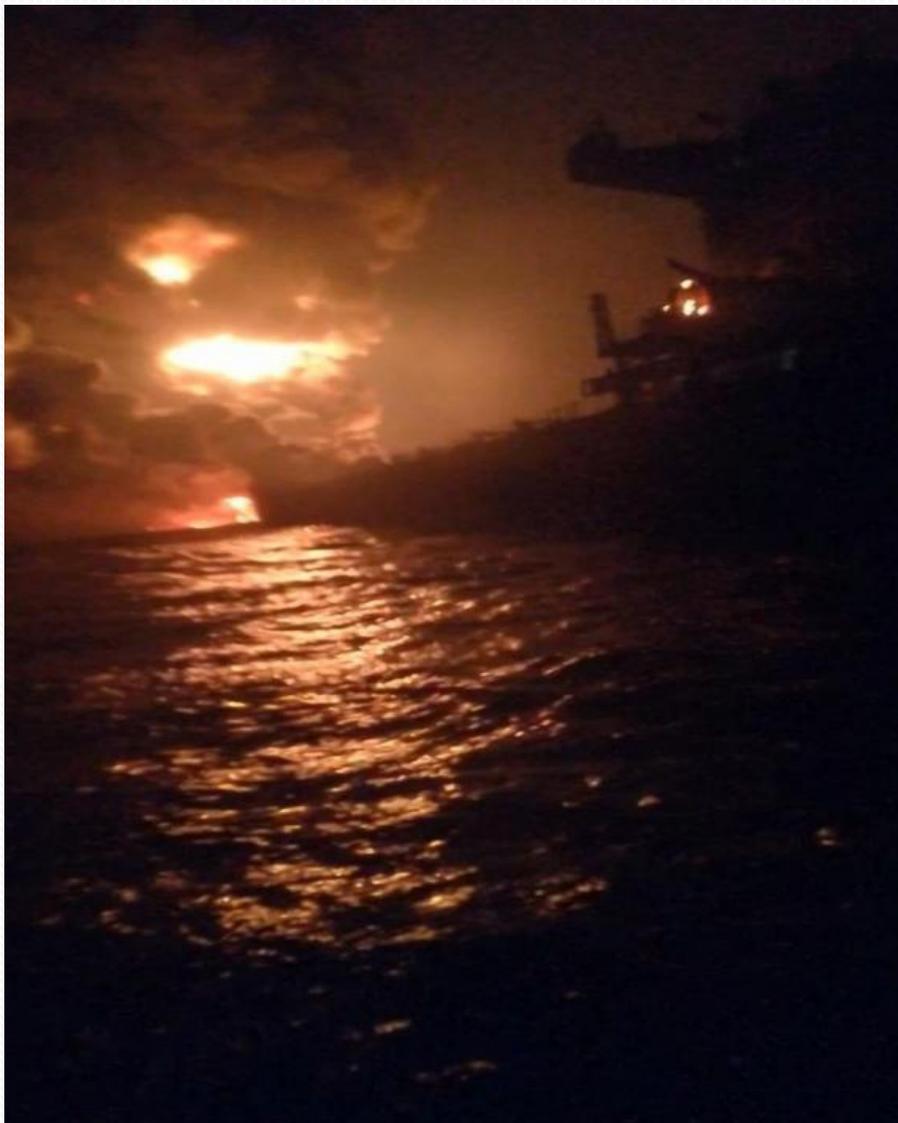
- **Collision (LT19:50:03)**
- **Captain instruct to activate GMDSS**

06.01.2018

1951

- **Fire on board Sanchi. Captain instructs fire pumps starting.**
- **Fire on Bow Crystal**
- **Captain to the bridge and order for full stern.**

انفجار و حریق تانکر سانچی بلافاصله در زمان تصادم



06.01.2018

1952

- **Explosion and fire engulfing bridge & accommodation, followed by suffocation sounds.**

06.01.2018

1953

- **Big fire on Sanchi and GMDSS signaling stopped. Main Engine and E-Generators Stopped.**
- **Crystal all the crew moved toward the astern free fall lifeboat. Abandon ship.**

Now Initializing...

خسارات وارده به کشتی فلّه بر کریستال



سوختگی کامل سمت چپ کشتی فله بر کریستال



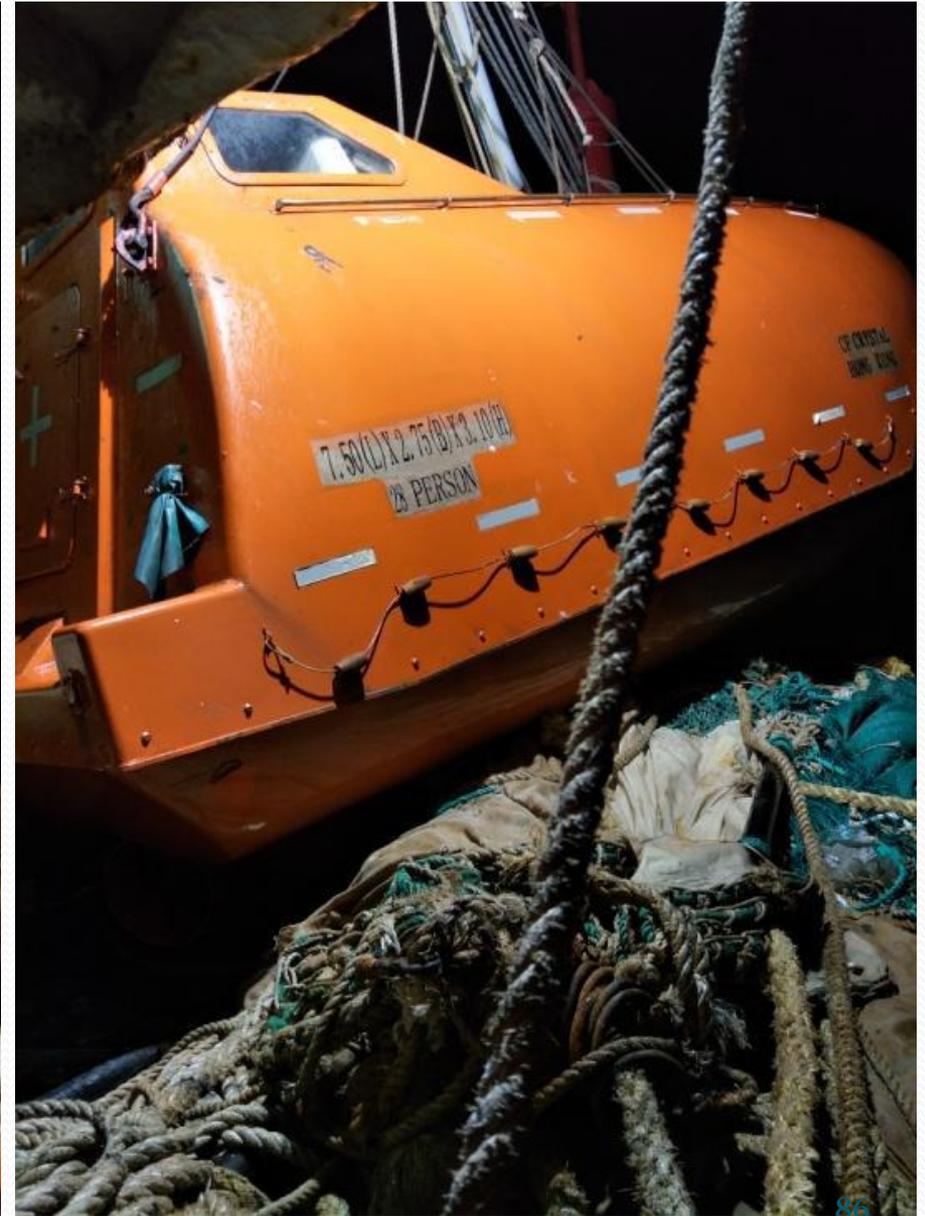
سوختگی قایق نجات سمت چپ کشتی فله بر کریستال



سوختگی تا انبار سوم و خسارت دماغه کشتی فله بر کریستال



قایق نجات سقوط آزاد کشتی فله بر کریستال



نجات خدمه کشتی فله بر کریستال توسط کشتی ماهیگیری



برگشتن سه نفر به کشتی کریستال در حال حرکت به عقب



اطفاء حریق کشتی فله بر کریستال توسط گروه نجات



توسعه دود و گازهای سمی ناشی از حریق محموله سانچی



امداد دریایی و هوایی برای حریق تانکر سانچی



انفجارات مکرر در تانکر سانچی



عکس هوایی از عملیات اطفاء حریق تانکر سانچی



1420时现场
上海海事局

عکس هوایی از حریق تانکر سانچی

1015时现场
上海海事局 空巡大队



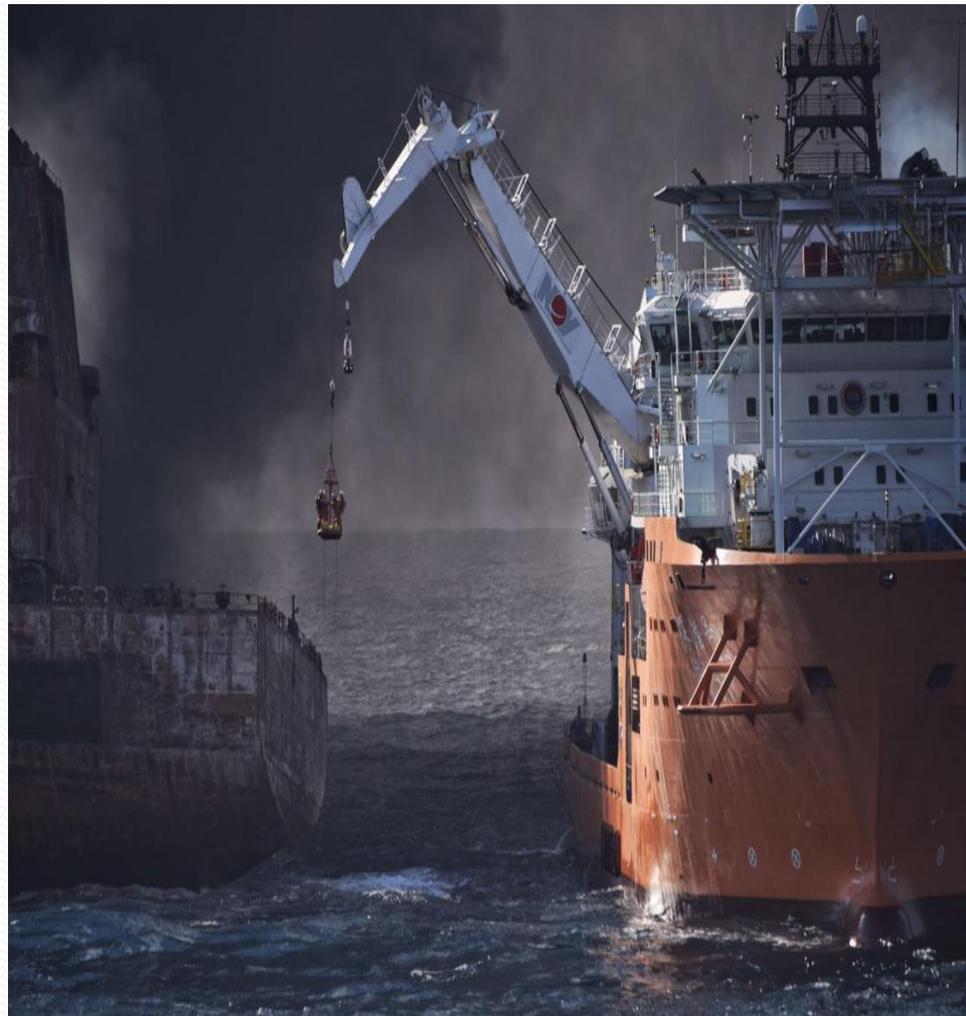
سرایت آتش به تمامی انبارها و توسعه حریق سانچی



سرایت آتش به تمامی انبارها و توسعه حریق سانچی



حضور چهار نفر امدادگر بر روی کشتی تانکر سانچی



عدم امکان حضور تکاوران امداد گر بر روی سانچی



4. ANALYSIS and CONCLUSION

- **4.1 Both vessels didn't comply with the requirements of Rule 5 of the COLREGS to maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions, and failed to make a full appraisal of the situation and of the risk of collision.**
- **4.2 Both vessels didn't comply with the requirements of Rule 7 of the COLREGS to use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists.**
- **4.3 Different statements are given regarding the causal factors of the accident as follows:**

Chaina & Hong Kong

- **This accident happened in open waters with good visibility (about 10 nm) . Both SANCHI and CF CRYSTAL were power-driven vessels underway. According to COLREGS, the two vessels were in a crossing situation, in which SANCHI was the give-way vessel and CF CRYSTAL was the stand-on vessel.**
- **As a give-way vessel in a cross situation of Rule 15, SANCHI did not take actions as required. This is the main contributing factor to the collision.**

Chaina & Hong Kong

- (1) During avoiding collision with small vessels, the 3/O attitude was negative. He expected the small vessel to take action even SANCHI is give way vessel.
- (2) Before the accident, the AB on duty repeatedly reminded the 3/O to take action, but the latter was too confident and did not take action.
- (3) The 3/O stayed in the chart room for too long leaving only the AB as the sole lookout in the bridge.
- (4) 3/O talked with the AB about things that had nothing to do with navigation.
- (5) There were 20 to 25 degrees differences of COG and 2 to 3 knots differences of SOG between the SANCHI's AIS information received by other vessels and the readout of SANCHI's VDR.

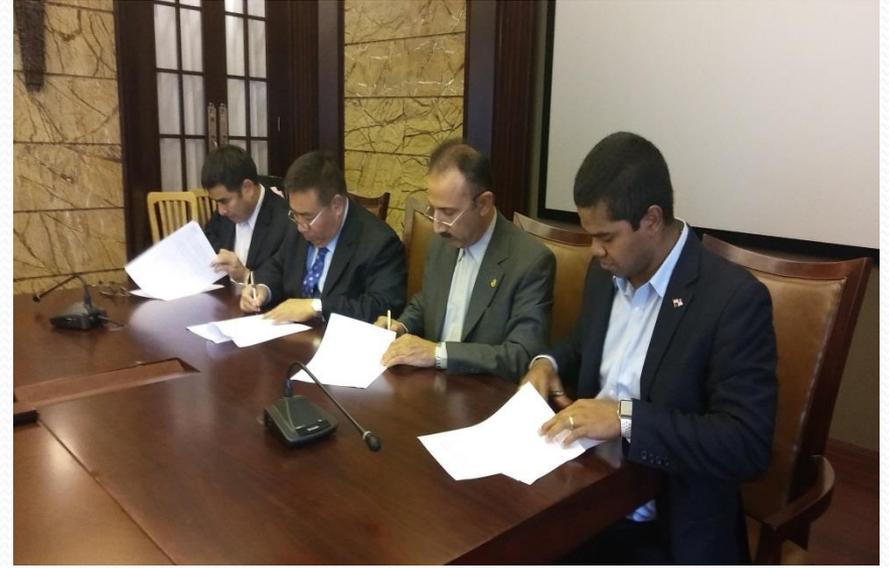
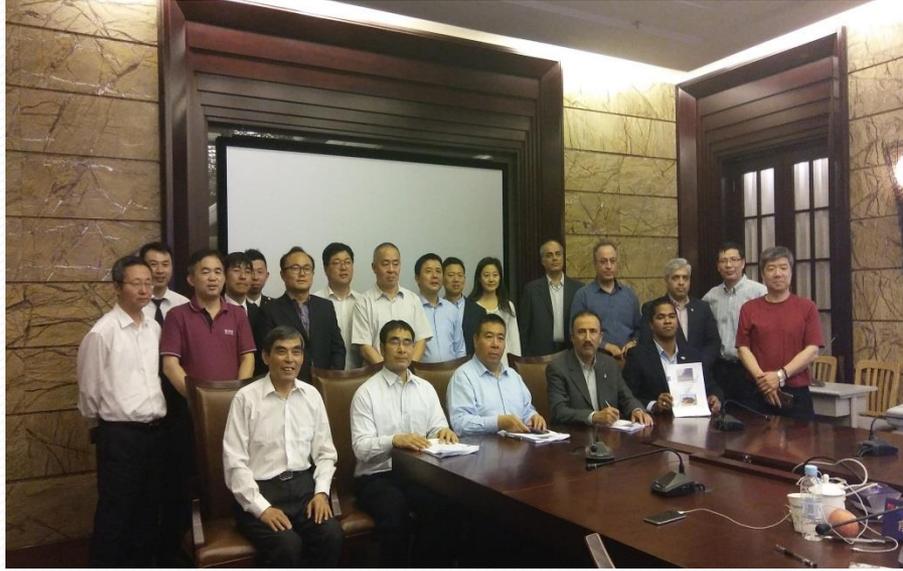
IRAN / PANAMA / BANGLADESH

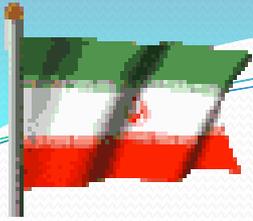
- **4.3.3.1 Main causal factor**
- **1. Alteration of CF Crystal course to starboard starting 15 minutes prior to the collision developed the situation which would otherwise had been clear in to a collision.**

IRAN / PANAMA / BANGLADESH

- 4.3.3.2 Contributory Factors
- 1. CF Crystal's watchkeeping personnel had not noticed the Sanchi's presence up to the time of collision.
- 2. Both of the vessels had not noticed the change in navigational status of the other.
- 3. AIS had been used on board CF Crystal as the sole means of collision avoidance.
- 4. CF Crystal had not noticed the flashing signals given by the Sanchi.
- 5. No proper hand over/take over between the CF Crystal's watchkeeping officers.
- 6. Improper use of the AIS as a navigational aid in not identifying the surrounding vessels.

امضای سند نهایی نتیجه بررسی سانحه توسط بازرسان چهار کشور





THANK YOU

با تشکر از توجه شما

**سازمان بنادر و دریانوردی
معاونت امور دریایی**

اردیبهشت ۱۳۹۷