



# **OCIMF Safety Bulletin**

Sanchi and CF Crystal Collision Incident



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## **Bibliography**

*IMO Code of the International Standards and Recommended Practice for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) (IMO Resolution MSC.255(84))*

*IMO Revised Guidelines for the Onboard Operational Use of Shipborne Automatic Identification Systems (AIS) (IMO Resolution A.1106(29))*

*Sanchi-CF Crystal Official Investigation Report (Maritime Safety Administration of P.R. China, 10 May 2018)*

*Summary of OCIMF Member Analysis of Incident*

## 1 Purpose

This safety bulletin highlights the importance of verifying the level of awareness and familiarity vessel personnel have with key learnings, procedures and regulations affected by this incident. This safety bulletin is based on facts, contributory factors and learnings identified in the official investigation report of the collision between the Sanchi and the CF Crystal. It is also based on an analysis by OCIMF members of information available from the official reference documents. This safety bulletin does not in anyway seek to apportion blame or liability for the incident.

## 2 Background/Incident description

At about 1950LT (1150 UTC) on 6 January 2018, in position 30°51.1'N/124°57.6'E in the East China Sea, the Sanchi (oil tanker, 164,160 tonnes DWT) collided with the CF Crystal (bulk carrier, 75,725 tonnes DWT). The Sanchi, the give-way vessel, was loaded with condensate oil on voyage from Assaluyeh, Iran to Daesan, South Korea. The CF Crystal, the stand-on vessel, was loaded with sorghum in bulk on voyage from Kalama, USA to Dongguan, China.

The collision breached the cargo tanks of the Sanchi resulting in fire, explosion and the subsequent sinking of the vessel. The CF Crystal suffered extensive structural damage to her bow area and fire damage to other areas on the ship.

There were 32 casualties onboard the Sanchi, 3 of which were confirmed dead and 29 declared missing. The incident was declared a “very serious marine casualty” as defined in the *IMO Code of International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Incident (IMO Resolution MSC.255(84))*.

## 3 Contributory factors

The following primary and secondary factors that contributed to the incident have been identified:

### 3.1 Primary factors

#### 3.1.1 Navigation

- Failure to comply with the *Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs)*.
  - Both vessels failed to comply with Rule 5 (lookout), Rule 7 (risk of collision) and Rule 8 (action to avoid collision) of the *COLREGs*.
  - The Sanchi failed to comply with Rule 15 (crossing situation) and Rule 16 (action by give-way vessel) of the *COLREGs*.
  - The CF Crystal failed to comply with Rule 17 (action by stand-on vessel) of the *COLREGs*.
- Improper use of Automatic Identification System (AIS) as a navigational/collision avoidance aid.
  - Both vessels relied excessively on AIS to identify, monitor and assess the risk of collision.
  - The CF Crystal used AIS as the only means of information for collision avoidance.
- Ineffective use of Automatic Radar Plotting Aids (ARPA), radar or other appropriate means to evaluate the developing situation and risk of collision.
- Alteration of course to starboard taken by the CF Crystal (the stand-on vessel) 16 minutes before the collision. The Chief Officer stated that he made minor alterations of course from 217 to 225 over 9 minutes, with the intention to bring the ship back on-track. Because of this, the CF Crystal did not “keep her course and speed” as required by *COLREGs* Rule 17 (action by stand-on vessel).
- It was not clear from evidence gathered whether the Officer of the Watch (OOW) on the Sanchi was following any minimum closest point of approach (CPA) requirements when dealing with developing crossing situations.

### **3.1.2 Bridge Resource Management (BRM)**

- Evidence that BRM principles such as speak-up and response, ensuring situational awareness, common understanding of collision avoidance options available were not practiced onboard.
- Handover procedures and bridge watch-keeping practices on board the CF Crystal were not robust as the Chief Officer handed over to the watch with a statement that “the traffic was clear”.

### **3.1.3 Human factors**

- The bridge team manning levels may have been inadequate for the developing situation.
- The decision to call the Master was made too late by the OOW on the Sanchi.
- The advice given/intervention made by the lookout was ignored by the OOW on the Sanchi.

## **3.2 Secondary factors**

**3.2.1** Discrepancies between AIS information on Course Over Ground (COG) and Speed Over Ground (SOG) data as received by other vessels compared with what was transmitted from the Sanchi - up to 25 deg in COG and 3 kts in SOG.

**3.2.2** Distractions (OOW staying in the chart room and discussing non-navigational matters for a length of time) on the bridge of the Sanchi drove the focus of the bridge team away from their navigational duties.

**3.2.3** Reluctance by the OOW on the Sanchi to positively identify and take action for a fishing vessel on the starboard side. The OOW on the Sanchi expected smaller vessels to take action even when the Sanchi was the give way vessel.

## **4 Learnings**

1. Awareness that equipment such as AIS and ECDIS are electronic aids to navigation – the purpose of AIS is to help identify ships, assist in target tracking and in search and rescue operations, simplify information exchange (e.g. reduce verbal mandatory ship reporting) and provide additional information to assist with situational awareness. These are additional sources of information and should not replace the use of established navigational procedures such as Radar/ARPA and visual bearings for the purposes of collision avoidance.
2. The use of electronic aids to navigation does not release the OOW from their responsibility of complying with the *COLREGs* at all times and using all other available means to judge navigational situations.
3. Awareness and familiarity with procedures for backing up Voyage Data Recorder (VDR) information – the limitations of VDR and associated procedures for backing up VDR data should be fully understood and practiced so as to ensure that as much relevant data as possible is available post-incident. This ensures that the causes and learnings from all incidents are extracted to the fullest extent possible.

### **Note to inspectors**

This incident highlights the importance of complying with the *COLREGs* and adhering to navigation best practices and procedures. The bridge team should have a high level of awareness and familiarity with navigational aids and other bridge equipment. For this safety bulletin to accomplish its aim, inspectors need to be familiar with current industry best practices, guidance and regulations related to all areas of ship operation.

Inspectors should note that the SIRE VIQ addresses the issues highlighted in this bulletin through questions in chapter 4 (Navigation). In particular, it addresses the awareness and familiarity of the ship's officers and crew with equipment such as AIS, ECDIS, Navtex, echo sounders, magnetic and gyro compasses and navigational practices. Inspectors should, when answering the questions in chapter 4 of the VIQ, check the contents of the Master's standing orders including references to minimum CPA requirements.



A voice for safety

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