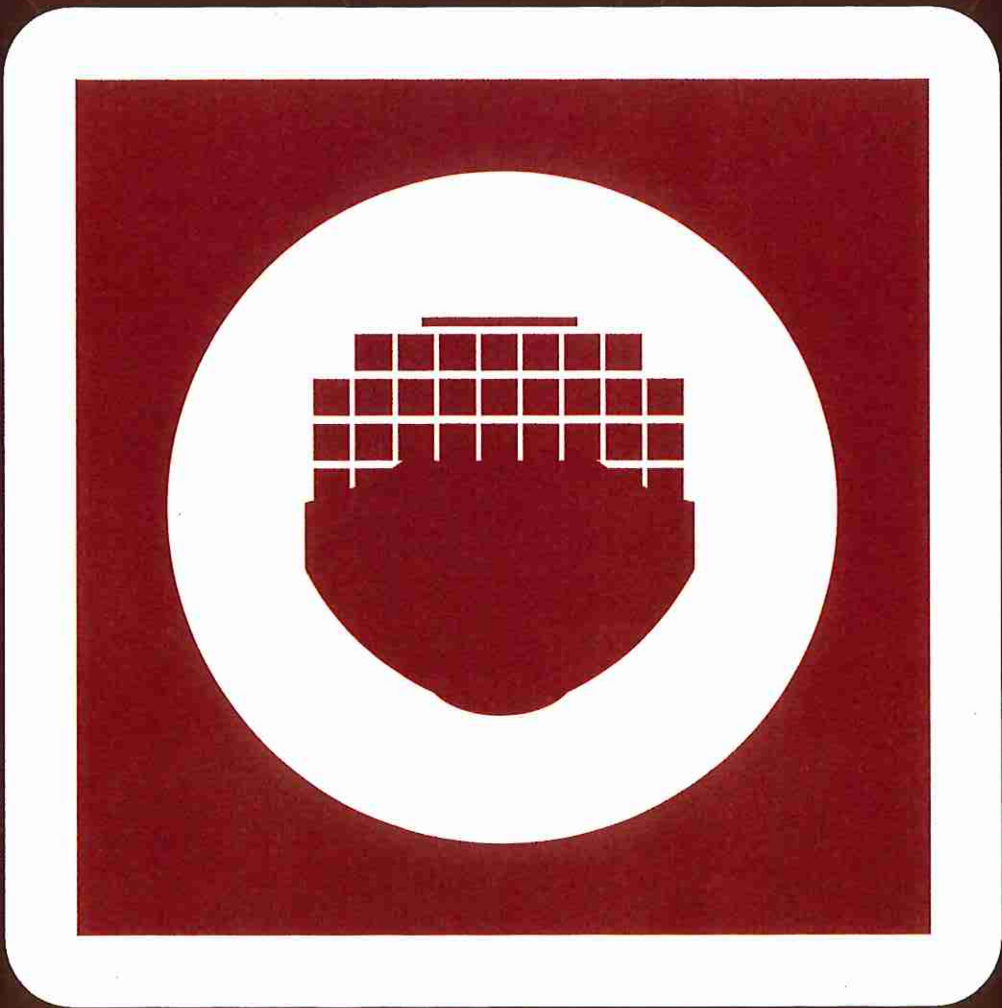
s List
igence | informa

WWW.LLOYDSLIST.COM
MAY 2017

he Intelligence



digitalisation overhyped?

Stellar Daisy: What went wrong?

Six serious deficiencies were found in the vessel this February but it was allowed to sail without detention. By Inderpreet Walia, Nidaa Bakhsh and Max Tingyao Lin

Questions are being raised over why the very large ore carrier *Stellar Daisy* reportedly split and sank after taking on water following a hull crack 2,000 miles off Uruguay, leaving 22 of the 24 crew members unaccounted for.

The investigation is expected to take a long time and is likely to be inconclusive, with the 1993-built vessel apparently lost in high seas on March 31 along with the 260,000 tonnes of iron ore it was carrying from Brazil to China.

Shipowner and operator Polaris Shipping declined to comment on possible causes. Vale, the reported cargo owner, did not replied to emails from Lloyd's List.

While the reasons why this incident took place remained unclear, some insurance officials have pointed out that the speed of sinking and the high loss of life mirrored casualties related to liquefaction of cargoes such as iron ore and nickel ore.

With a high moisture content, iron ore has a propensity to liquefy during a voyage, which causes serious stability problems with a high possibility of capsizing.

"Incidents due to liquefied cargoes can lead to serious perils, as the liquefied slush mounts quickly, brought on by vibrations and motions of the vessel, and the ships sink fast," said a P&I club official.

"The wet cargoes change their state from ore fines or mineral concentrate to a viscous fluid that can undermine the balance of the ship."

London P&I club says in its new guide on managing the risk of cargo liquefaction that the liquefied cargo can flow to one side in a roll in heavy seas, and that it would not return with the roll the other way, which progressively leads to the vessel capsizing.

Consignments that are prone to liquefying have to undergo proper testing of moisture content before being loaded, a measure described under the International Maritime Solid Bulk Cargoes Code.

The code as it stands would possibly prevent many incidents due to liquefaction if it is followed strictly, as it sets out a maximum moisture content of the cargo which is considered safe for carriage in ships, known as total moisture limit.

The onus for these lab tests lies with the charterer, as it must provide the master of the vessel with written evidence that the moisture content does not exceed the TML.

TIMELINE Mar 31 | Apr 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09

MAYDAY: Polaris Shipping received a distress signal saying that the ship was taking on water about 3,700 nautical miles off Uruguay. The ship then reportedly listed, split and sank. The Uruguayan Navy reported finding an oil sheen and flotsam along with a strong smell of fuel.

SEARCH AND RESCUE: Brazilian and Uruguayan navies launched search and rescue operation, along with four Polaris ships. Two of 24 crew members — both of them Filipinos — were found on a life raft. Polaris began to investigate the incident.

RESPONSE: The International Maritime Organization and Intercargo called for a full probe to be concluded soon.

RECALL: Polaris launched an immediate, special inspection programme for all vessels in its fleet. Another Polaris VLOC converted from a VLCC, *Stellar Unicorn*, reported a 15 cm crack on the outer hull of a tank and needed to be repaired off Cape Town.

Stellar Daisy: The speed of sinking and the high loss of life mirrored tragedies related to liquefaction of cargoes, insurance industry officials have stated.

Upon the failure to provide such a certificate, the master should not load the cargo, said a Singapore-based vessel owner and operator.

"But unfortunately, the results from these tests are sometimes modified and false figures for the moisture content are presented, which leads to emergencies," he said.

"However, the lab centres have an obligation to keep the sample of the cargo inspected by them for a period of two months," he conceded, adding that in the case of *Stellar Daisy* this could provide essential evidence for an investigation.

Other theories

Stellar Daisy was originally built as a single-hull very large crude oil carrier at the Nagasaki Shipyard owned by Mitsubishi Heavy industries and was converted to a VLOC at the Cosco (Zhoushan) Shipyard in China in 2009.

Insurance officials have questioned whether the conversion process would have caused the incident, as it would have been carried out under class inspections.

According to Korean Register, its current classification society, the ship had undergone an annual survey on August 12 last year.

Asked by Lloyd's List whether the vessel had undergone a condition survey by a surveyor in the last three years, the Korean P&I Club, which has provided protection and indemnity cover to the VLOC, declined to comment.

In February, the China Port State Control authorities identified six serious deficiencies related to watertight and weathertight doors, indicating potentially leaking hatches or doors. Yet the vessel was allowed to sail without any detentions.

Some market participants also suggested there were other possible causes of the vessel sinking, such as its age, loading stress, or uneven loading that can have structural effects on vessels which can cause damage to the frames and cause a hull failure.

The Marshall Islands-flagged vessel had changed hands several times before ending up with Polaris in 2007.

According to Lloyd's List Intelligence, Korean Register of Shipping has classified the vessel since 2007 and Korea P&I Club has been providing its protection and indemnity cover since 2013.

HUMAN TOLL: The 14 South Korean and eight Filipino seafarers onboard *Stellar Daisy* remain missing.

SURVEY: Polaris launched a fleet structural survey programme with Korean Register of Shipping and Lloyd's Register as independent consultants.

11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

> *Incidents due to liquefied cargoes can lead to serious perils, as the liquefied slush mounts quickly, brought on by vibrations and motions of the vessel, and the ships sink fast*

Stellar Daisy casualty sparks Karatzas warning on conversions

When shipyards were chasing newbuilding orders by the dozen, conversion work was done by mostly second-tier yards, analyst warns

There are around 47 very large ore carriers trading worldwide, which were converted into VLOCs in the past decade or more, according to Lloyd's List Intelligence data.

Most of these vessels have already reached their demolition age of close to 27 years.

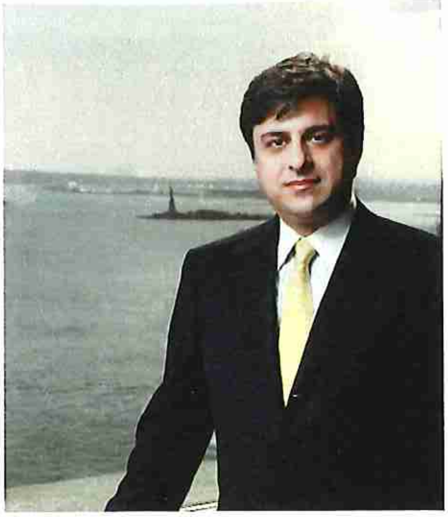
A significant number of those conversions occurred when yards were well stocked with newbuildings contracts, between 2008 and 2011, and conversions were seen to be less profitable work often handled by less-established yards, Karatzas Marine Advisors' chief executive Basil Karatzas said.

"Also, as [markets] were strong in terms of freight rates, to get the vessel on the water fast was much more crucial than good workmanship, craftsmanship, et cetera," Mr Karatzas noted.

"Even newbuildings built during those days from greenfield yards are [substandard] ships."

Mr Karatzas said that when shipyards were chasing newbuilding orders by the dozen, conversion was done by mostly second-tier yards.

Since there was a premium on vessels sold for conversion, many avoided being scrapped since a conversion buyer would pay more compared with a cash buyer, he said.



Karatzas: conversions were seen to be less profitable work often handled by less-established yards.

Moreover, class societies were busy chasing newbuilding orders that would keep paying fees for the whole life of a vessel versus a conversion that was business with lower margins, Mr Karatzas added.

Lim: findings should be brought to the UN body.

IMO and Intercargo call for Stellar Daisy probe

Flag state, class society, P&I club and other stakeholders urged to move swiftly and co-operate fully

INTERCARGO has called on relevant parties in the *Stellar Daisy* incident to submit a casualty investigation report to the International Maritime Organization in a timely matter to address industry safety concerns.

The statement came after the IMO secretary-general Kitack Lim said he expected a full probe into the incident and the results and findings to be brought to the UN body to reduce future chances of similar accidents.

In the statement, Intercargo said it encouraged the flag state, the class society, the P&I club and other stakeholders involved "to be mobilised swiftly and co-operate fully, in order to submit as quickly as possible to IMO a thorough and quality report investigating its causes".

The statement adds: "Lessons need to be learnt promptly after maritime casualties."

"Intercargo stresses the importance of timely submission of the casualty inves-

He pointed out that there was very high stress on the hull when loading high-density cargoes such as iron ore, and the same held true for custom-built newer vessels specially designed to carry iron ore.

There had been cases in the past in which relatively modern capesize vessels snapped in half and sank in port while loading iron ore in Brazil, he said.

The stowage factor was another important issue for these converted vessels. Since the stowage factor related to the space actually taken up by the cargo on the ship, this obviously depended on how well the ship was designed to accommodate the cargo.

Although the incident involving the 1993-built, 266,000 dwt *Stellar Daisy* was a wake-up call for the industry to remove these converted vessels from the trading fleet, most of these vessels were on long-term charters, he said.

However, the increase in spot market earnings lately meant that even older vessels could earn handsome rates, making them attractive alternatives to expensive modern tonnage or newbuildings.

There would probably be some increased scrutiny of these vessels due to the recent casualty, but the freight market and economics would determine when ships were getting scrapped more than anything else, Mr Karatzas said.

"As long as the freight market is cash flow positive for these low-cost vessels, it is to be debated whether there will be an accelerated scrapping schedule."

tigation report to IMO, as a means to identify the causes of the incident and enable corrective actions to be taken," according to the statement, adding that the industry group will make full use of such a report when it is available.

Multinational search and rescue operations have failed to find the 22 out of 24 crew members who are missing after the 1993-built very large ore carrier reportedly split and sank 2,000 miles off Uruguay.

Intercargo and Mr Lim both praised the efforts and called for further reflection.

"In the aftermath, the shipping community should be concerned about the non-availability of sufficient SAR capabilities in the vicinity of busy shipping lanes around the world and revisit this issue," Intercargo said.

Owned and operated by South Korea's Polaris Shipping, *Stellar Daisy* was carrying 260,000 tonnes of iron ore from Brazil to China when the incident occurred.

Spotlight on VLOC conversions

Over 40% of all deficiencies in converted VLOCs over the last five years were found in the Polaris fleet

The Polaris Shipping-owned very large ore carrier *Stellar Daisy* was checked by port state control inspectors in Tianjin, China just a month before it was lost at sea.

In February, six deficiencies related to watertight and weathertight doors were uncovered in the vessel, converted from a 1993-built very large crude carrier. It was, nonetheless, allowed to sail without detention.

Doubtless, this was not the first time that port state control authorities had identified such deficiencies in the Polaris fleet.

Rather, some 43.1% of the total deficiencies found in converted VLOCs by PSC inspectors in ports worldwide over the last five years are linked to the Polaris fleet, according to Lloyd's List Intelligence data.

Polaris owns 36% of converted VLOCs on the water and claims to be the world's largest VLOC company.

In total, an overview of the 1,088 deficiencies reported in 52 converted bulkers in the five-year period shows that 469 deficiencies were found in 19 Polaris converted VLOCs.

Structural problems such as hull corrosion and hull cracks were found only in the Polaris fleet, alongside other deficiencies, LLI data shows.

Approximately 48% of the total auxiliary engine deficiencies and 74% of nautical publication problems were noted in Polaris vessels.

Of all the main engine propulsion deficiencies recorded 45% were with the Polaris fleet, as well as 42% of the fire-related hazards.

Further, among all serious issues reported relating to lifeboats and their inventories, Polaris vessels accounted for 42% and 39% of the total respectively.

Deficiencies identified by PSC inspections tended to increase with age, said a classification society official, who preferred to remain anonymous.

"Inaction as a strategy is a common practice among owners when deficiencies are found, mainly because it involves colossal investment," he said. "Sometimes when the vessels are under repairs it also means substantial loss for owners and charterers."

Most of the converted fleet of Polaris comprises vessels between 22 and 25 years of age, with the 27-year-old *Stellar Fair* reaching the age of scrapping.

LLI reports that Polaris Shipping intends to venture into the tanker market and has two aframaxes on order at Daehan Shipbuilding at $43m each, and scheduled to be delivered in 2018.

The South Korea-based company was also planning a listing on the Korea Stock Exchange, with initial plans for the company to launch its initial public offering in the first quarter of 2017.

Profile

Polaris shipping is a privately owned shipowner, operator and manager with a fleet of 33 bulk carriers.

The company claims to be the first Korean shipping player to own a converted very large ore carrier and was very active in acquiring tankers during 2007 and 2008 for conversion.

Polaris bought its first very large crude carrier, *Stellar Cosmo*, in March 2007 from Japanese interests for a reported sum of $38m.

Four months later, the company purchased another VLCC, *Stellar Daisy*, from Dynacom Tankers of Greece for a reported $48m.

In early 2008, the company acquired *Stellar Eagle* from BW Shipping at an undisclosed price.

Stellar Fair was acquired from Titan Petrochemicals in September 2008 for a reported sum of $40.8m, according to LLI.

The bulker owner operates with around 90 staff, with day-to-day operations headed by its president, Wan-Joong Kim, who holds a 32.3% stake in the business.