



GOBIERNO
DE ESPAÑA

MINISTERIO
DE TRANSPORTES, MOVILIDAD
Y AGENDA URBANA

SUBSECRETARÍA DE TRANSPORTES,
MOVILIDAD Y AGENDA URBANA

COMISIÓN PERMANENTE DE
INVESTIGACIÓN DE ACCIDENTES
E INCIDENTES MARÍTIMOS

INFORME CIAIM-06/2021

PINAR DEL RIO's ship grounding in the entrance of the port of Denia (Alicante), 16 August 2019

NOTICE

This report has been elaborated by the Spanish Maritime Accident and Incident Investigation Standing Commission (CIAIM), which is regulated by article 265 of the reformed text of the Law of State Ports and the Merchant Navy, approved by Royal Legislative Decree 2/2011, of the 5th of September, and by Royal Decree 800/2011, of the 10th of June.

The aim of the CIAIM when investigating maritime accidents and incidents is to draw conclusions and extract lessons that allow the risk of future maritime accidents to be reduced, and hence contribute to maritime safety and to preventing contamination from shipping. To this end, the CIAIM carries out a technical investigation in each case in which it attempts to establish the causes and circumstances that, directly or indirectly, may have contributed to the accident or incident and, when necessary, to issue the appropriate safety recommendations.

The elaboration of this technical report is not intended in any way to prejudge any judicial decisions that may be produced, nor does it seek to evaluate responsibilities nor to determine guilt.



Figura 1. Ship PINAR DEL RIO



Figura 2. Accident location

1. SUMMARY

At 23:20 hours on 16 August 2019, the ship PINAR DEL RIO ran aground while entering the Port of Denia (Alicante), having departed from the Port of Ibiza. The ship ran aground against a submerged concrete block that formed part of the North Dock's breakwater construction at the entrance to the port.

The accident occurred as it was manoeuvring to pass a pleasure craft departing the port via the access channel.

No personal injuries were caused. The severity of the damage caused by the accident and the storm which affected the area in the days after the incident made re-floating and repairing the ship infeasible, and eventually, it was scrapped.

1.1. Investigation

The Spanish Maritime Accident and Incident Investigation Standing Commission (CIAIM) was informed of the event on 17 August 2020. On the same day, the case was provisionally classified as an "very serious accident", and it was agreed an investigation would be opened. A CIAIM committee meeting ratified the classification of the incident and the initiation of the safety investigation. This report was reviewed by a CIAIM committee meeting on 31 March 2021 and, following its approval, published on June 2021.

2. FACTUAL INFORMATION

PARTICULARS ON THE SHIP/VESSEL	
Name	PINAR DEL RIO
Flag / Port of Registry	Cyprus / Limassol
Identification	IMO no: 9043952 MMSI: 212888000 Callsign: 5BLQ4
Type	High-speed passenger and wheeled vehicle catamaran
Main Particulars	Length overall: 73.60 m Length between perpendiculars: 71.00 m Width: 26.00 m Gross tonnage (GT): 3,454 Net tonnage (NT): 1,041 Hull material: Aluminium Propulsion: Four 4,018 kW 765 rpm diesel engines
Owner and management	BALEARIA EUROLINEAS MARITIMAS (IMO no: 1151878)
Shipbuilding details	Constructed in 1992 by International Catamarans Pty Ltd, in Hobart (Australia)
Classification society	Registro Italiano Navale (RINA)

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Minimum safe manning	Twelve crew members: captain, chief mate, chief engineer, first engineer officer, boatswain, two sailors and five passenger attendants
VOYAGE PARTICULARS	
Departure / Arrival ports	Ibiza / Denia (Alicante)
Type of voyage	Domestic, scheduled trip
Cargo information	393 passengers, 79 vehicles, 1 motorcycle and 1 semi-trailer
Crew	Twenty-two crew members: captain, chief mate, second mate, chief engineer, second chief engineer, first engineer officer, second engineer officer, boiler engineer, boatswain, three sailors, purser and nine passenger attendants and waiters. All had the requisite professional titles and required speciality certifications for their respective roles.
Documents	The vessel had the requisite valid certificates
INFORMATION ON THE INCIDENT	
Type of incident	Vessel ran aground
Date and time	16 August 2019, 23:16:16 local time
Position	I = 38° 50' 52'' N y L = 000° 07' 32'' E
Vessel's operations	Manoeuvring to enter the port
Place on board	Starboard hull
Ship damage	Cracks and structural deformations to the hull. Eventual loss of the whole ship
Fatalities / missing / injured on board	No
Pollution	No
Other non-ship damage	No
Other personal injuries	No
MARINE AND METEOROLOGICAL CONDITIONS	
Wind	South-westerly winds (210° to 240°), between 7 to 10 knots (force 3 on the Beaufort scale) and with gusts of 11 to 16 knots
Sea conditions	Swell with wave height around 0.3 metres and a south-eastern swell (130°) of 1 metre. Average wave interval of 4 seconds.
Visibility	Good (more than 5 miles)
Tide	N/A
INTERVENTION OF LAND-BASED AUTHORITIES AND REACTION OF EMERGENCY SERVICES	
Organisations involved	Valencia Rescue Coordination Centre (CCS Valencia) ¹ National Madrid Rescue Coordination Centre (CNCS Madrid) ¹ Alicante Harbour Master's Office Port Police Command Centre ² Marine Service of the Guardia Civil ³
Means deployed	Tugboat MARTA MATA ¹ Boat SALVAMAR DIPHDA ¹ Patrol boat RIO LADRA ³
Speed of intervention	Immediate
Measures adopted	Mobilisation of marine and land resources to assist the ship and minimise pollution of the marine environment
Results obtained	The passengers and crew were evacuated unharmed

¹ Marine Salvage and Safety Society (SASEMAR)

² Port Authority of Denia

³ Marine Service of the Guardia Civil (SMGC)

3. DETAILED DESCRIPTION

This relation of events is based on the available data, declarations and reports. The times given refer to local time.

On the 16 August 2019, at approximately 23:00 hours, the ship PINAR DEL RIO began the approach manoeuvre to the Port of Denia (Alicante), having departed from the Port of Ibiza to carry out a scheduled crossing between the two ports.

The ship's bridge was being operated by the captain, the chief mate and the chief engineer, who were on duty. The second mate and the second chief engineer, who had joined the crew on 10 June and were undergoing the process of training and ship familiarisation, were also on the bridge ready to relieve the chief mate and the chief engineer, respectively. The remainder of the crew were on deck or in the engine room, waiting to carry out the docking manoeuvre.

The ship was being controlled by the autopilot, with a heading of 280° and an average ground speed of 29 knots. Course changes were manually entered as needed to maintain the route. The vessel's position was displayed on the ECDIS screen⁴. Surveillance of maritime traffic was being carried out visually and with the help of two 9 GHz radars and the ECDIS, since the latter supersedes the AIS data⁵. The probe and anemometer were also in operation.

At 23:10 hours, the captain of the ship PINAR DEL RIO contacted Denia's maritime pilot by radiotelephone (VHF channel 14) to inform him that they were 2 miles from the port entrance and moderating the engine to perform the entry manoeuvre to port.

The maritime pilot informed him that the ship RAMON LLULL was arriving at its berth at the Pansa 1 quay and warned him to keep an eye out for lights (from smaller vessels) in the entrance channel because a fireworks display was scheduled to take place in the port.

The captain of the ship PINAR DEL RIO had an exemption from the mandatory use of the port's pilotage service, and, in practice, he was merely requesting confirmation from the maritime pilot that there was no impediment to carrying out the port entry manoeuvre.

At 23:11 hours, the captain of the ship PINAR DEL RIO reduced the speed, changed the steering mode to manual and ordered the chief engineer to moderate the speed of the propulsion system.

At 23:12 hours, the captain of the ship RAMON LLULL called the captain of the ship PINAR DEL RIO to inform him that a catamaran⁶ was leaving the port dock and that he should take it into account.

At 23:14 hours, the ship was following the route into the channel entrance that was pre-programmed in the journey plan. However, feeling they were at risk of colliding with the departing catamaran, the captain manoeuvred to the starboard side to pass it port to port. The ship continued sailing outside the specified route, waiting for the catamaran to pass at a safe distance.

Finally, at 23:16:16 hours, the starboard hull of the ship PINAR DEL RIO collided with one of the North Breakwater's submerged concrete blocks. The grounding produced intense vibrations and a loud noise, taking the crew and the passengers by surprise.

At 23:17 hours, the captain gave instructions to prepare the passengers. First the purser, and then the captain himself made a public address to inform the passengers that the ship had run aground, that everything was under control and there was no danger, and that they should follow the crew's instructions. He then notified the maritime pilot, requesting assistance from both the pilot and the port tug.



Figura 3. The ship Pinar del Rio at the accident site

⁴ Electronic Chart Display and Information System.

⁵ Automatic Identification System.

⁶ The departing catamaran was the MUNDO MARINO DOS, a tourist excursion catamaran, 25 m long and 12 m wide

At 23:19 hours, the captain ordered the chief engineer and the chief mate to carry out a quick inspection of the hull voids and engine room. Upon their return, they reported that all the starboard voids were damaged and flooding, but the engine room and port hull compartments were intact, and they hadn't observed any fuel (diesel) in the water. The captain thought the starboard hull might be trapped between the concrete blocks and decided to stop the engines and await help.

At 23:20 hours, the captain reported the incident to the company's designated person, the company's fleet manager, and the Valencia Rescue Coordination Centre (CCS Valencia), from whom he requested the assistance of a tugboat. After inquiring about the structural damage to the ship and the number of passengers and crew on board, the RCC mobilised the SALVAMAR DIPHDA rescue vessel and the MARTA MATA tugboat.

The maritime pilot disembarked from the RAMON LLULL, boarded the pilotage service boat (the MARINA CARMEN), and went to assist the PINAR DEL RIO. On route, at 23:29 hours, he telephoned CCS Valencia to report the incident and request that the SALVAMAR DIPHDA rescue vessel be mobilised from its base in Jávea. He also called the Cabo de San Antonio Marine Reserve coast guard vessel (the Guadalupe) to come to the aid of the Pinar del Rio. Lastly, he informed the Harbour Master's Office in Alicante, who was already aware of what had happened.

At 23:28 hours, the chief engineer informed the captain that water was entering the engine room. The captain ordered the fuel supply valves and electricity supply to be shut off in that area.

At 23:44 hours, the MARINA CARMEN and GUADALUPE were alongside the ship PINAR DEL RIO.

At 23:55 hours, the tug OCEANO XV pulled alongside the damaged ship.

At 00:10 hours, the vessel SALVAMAR DIPHDA pulled alongside the damaged ship.

At 00:20 hours, they began evacuating the passengers in groups of fifteen, transferring them to the OCEANO XV tugboat and the vessels SALVAMAR DIPHDA and MARINA CARMEN, which took them to the Maritime Terminal.

At 00:35 hours, the captain ordered the anchor to be lowered 7 metres on brake.

At 00:45 hours, the Civil Guard arrived on the RIO LADRA patrol boat and assisted with the evacuation.

At 02:00 hours, the evacuation of the 393 passengers on board the ship PINAR DEL RIO had been completed, with no injuries.

At 02:05 hours, the ship's officers carried out a more detailed inspection of its stability and condition. The chief engineer reported the water levels in the starboard hull voids. The jet room was undamaged and the ship was stable in its position.

At 03:00 hours, the officers who were present on the bridge when the accident occurred took a breathalyser test. All produced negative results.

At 03:00 hours, the nine passenger attendants and waiters disembarked.

At 03:40 hours, the company's inspection personnel boarded. It should be noted that the ship's company is based in a facility within the Port of Denia.

At 03:48 hours, the company's fleet director contacted CCS Valencia to request an anti-pollution barrier be deployed around the vessel. He then contacted an underwater works company to request an urgent underwater inspection of the condition of the starboard hull.

At 06:30 hours, the rescue tug MARTA MATA arrived.

At 08:30 hours, the vessel SALVAMAR DIPHDA and the MARTA MATA's auxiliary boat began delimiting the incident area with buoys.

That morning, a specialist underwater works firm hired by the company carried out an inspection to assess the magnitude of the damage. The ship was resting on a cubic concrete block in the area between hull void No. 5 and the engine room. No oil spill was detected.

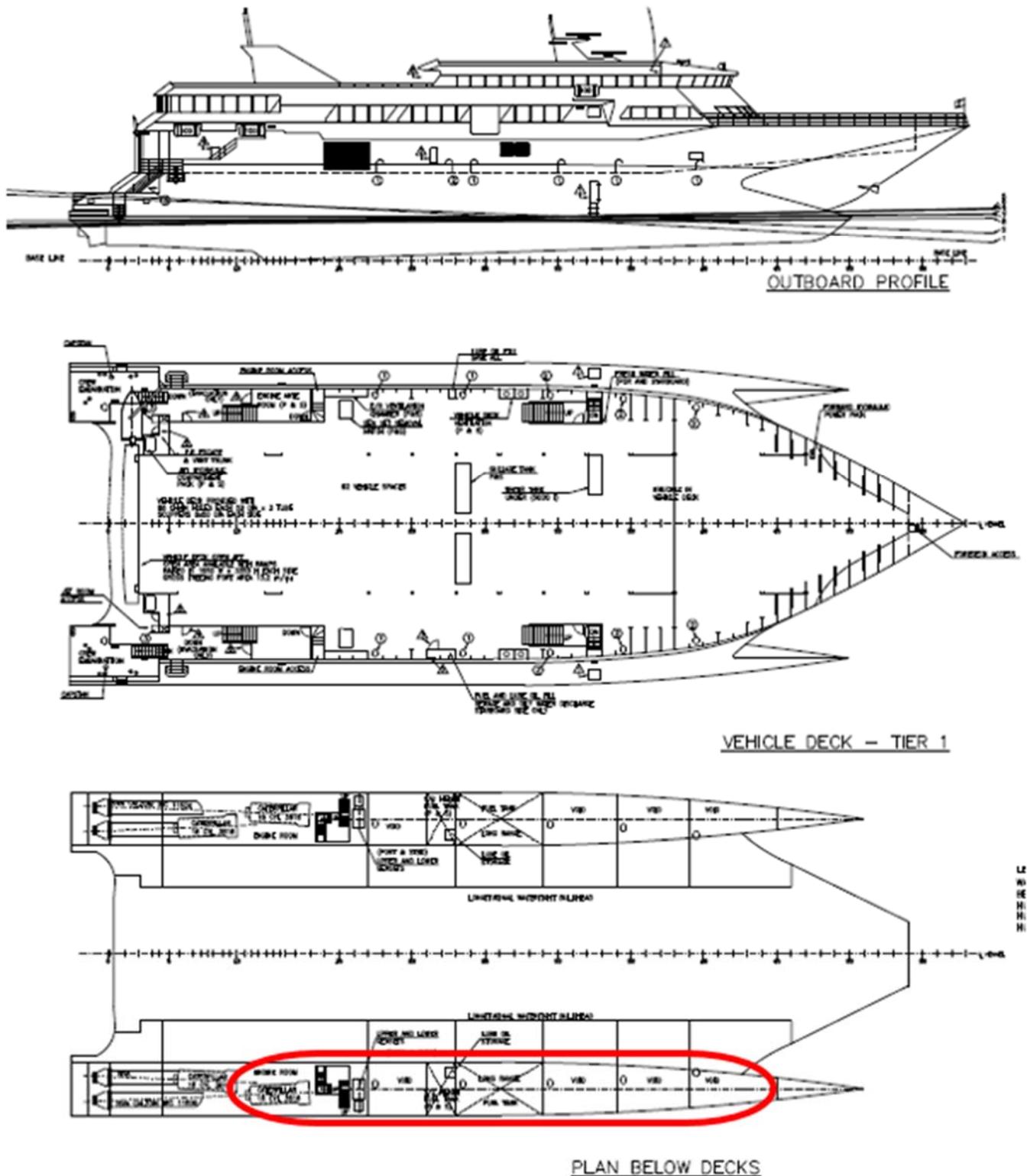


Figura 4. Location of damage to the starboard hull of the ship PINAR DEL RIO

At 15:10 hours, the anti-pollution barrier brought from the Castellón BEC (Strategic anti-Pollution Base) was deployed as a preventive measure. Furthermore, as soon it was possible to do so, the fuel and oily water from the ship's tanks were transferred to a tanker.

The ship's position was stabilised by securing the manoeuvring ropes to the concrete blocks of the breakwater. The ropes were reinforced with wires in the days after the incident (see Figura 3).

As a result of the accident, the ship PINAR DEL RIO incurred significant damage to its starboard hull, specifically, the deformation, breakage and loss of aluminium panels and structural elements in voids No. 1, 2, 3, 4 and 5, and the engine room (see Figura 4). In addition, the flooding in the engine room caused the failure of the propulsion engines and other critical equipment.

The starboard fuel tank in the upper half of void no. 4 was not affected during the grounding, and there was no spillage.

Operations to recover the vehicles in the ship's vehicle deck began immediately. They were unloaded by a heavy-load lifting crane located on land.

At the same time, operations to re-float the ship commenced, but the severity of the damage caused when it ran aground, which was further compounded by the storm that affected the area in the days after the incident, eventually made re-floatation and repair infeasible.

The company requested the vessel be removed from the Cyprus Maritime Administration's national ship registry, and on 5 September 2019, the matter was settled favourably due to the total constructive loss of the ship.

On 12 September 2019, the Valencian Regional Government's Directorate-General of Ports, Airports and Coasts authorised the works to remove and scrap the damaged ship. The process lasted until the beginning of November. The structure was broken down into parts on-site and moved ashore with the help of the same crane that unloaded the vehicles.

4. ANALYSIS

4.1. The manoeuvre to enter the port

Denia's port access channel is approximately 105 m wide and has a directional light that marks a 228° course.

When the captain of the ship PINAR DEL RIO contacted the Denia port pilot, the pilot informed him of the presence of numerous smaller vessels navigating the port access channel. This was because a midnight fireworks display was to take place in the port, marking the end of Denia's Moors and Christians Festival, which ran from 3 - 16 August 2019.

In addition, just a few minutes later, the captain of the ship RAMON LLULL informed him that a catamaran was leaving the port's mooring area. The vessel in question was the MUNDO MARINO DOS, which was 24.99 metres long, 12 metres wide and used to transport passengers on marine leisure excursions. On that particular night, it had 60 passengers on board, according to the information held in its AIS.

As stated by the captain of the ship PINAR DEL RIO, the Port of Denia has an unwritten rule (tacit agreement) which stipulates that when these types of passenger craft are leaving the port, as soon as they reach the red beacon at the far end of the South Breakwater⁷, they should fall to starboard and exit the channel, passing between the red pole-shaped beacon⁸ in the water and the La Androna shallow (see Figura 6). For this reason, he decided not to abort the manoeuvre and continued the approach to the port entrance, adjusting the ship's course and speed to maintain the heading without losing sight of the catamaran's navigation lights.

Shortly afterwards, the captain, wrongly thinking the catamaran was being slow falling to starboard and that they could be on a collision course, manoeuvred again, falling to starboard until he saw the red light on the port side.

The central command post on the bridge of the ship PINAR DEL RIO had a wide horizontal field of vision but the structure itself blocked the view of the surface of the sea immediately surrounding the ship. For this reason, the captain carried out the entry and berthing manoeuvre from the port command post, assisted by the chief mate, who was usually stationed at the command post on the opposite side, 19 metres away.

However, on this occasion, the chief mate was not in his customary position. Instead, he was in the central area of the bridge next to the radar and ECDIS, familiarising the second mate, who was due to take over the watch, with the port entry manoeuvre. Nonetheless, at 23:16:13 hours, he stated clearly, "starboard is clear". The grounding occurred three seconds later.

At first glance, it seemed the ship was on course to clear the breakwater on the surface, but this assessment was misleading. The dock is built on a slope, using concrete blocks stacked on the breakwater to dissipate the energy of the waves. Some of the blocks are located just below the sea's surface but several metres away from where the

⁷ Identified with the national/international numbers 25370 / E-0185 in the publication List of Lights and Fog Signals - Spain: East Coast.

⁸ Identified with the national/international numbers 25362/E-0184 in the publication List of Lights and Fog Signals - Spain: East Coast.

breakwater appears above the waterline. As a result, vessels must steer well clear of the breakwater and stay within the designated channel when navigating in and out of the port (see Figura 5).



Figura 5. Concrete block that caused the ship PINAR DEL RIO to run aground.

The captain of the ship PINAR DEL RIO clearly attempted to execute a manoeuvre that would minimise the risk of colliding with the departing catamaran, with sufficient time and staying as close as possible to the outer limit of the channel, as per rules 8(a) and 9(a) of the International Regulations for Preventing Collisions at Sea (hereinafter the Regulations). By focusing his attention on monitoring the catamaran's departure, he manoeuvred under the mistaken impression that he was sailing inside the channel when, in fact, the starboard hull was already outside its outer limit.

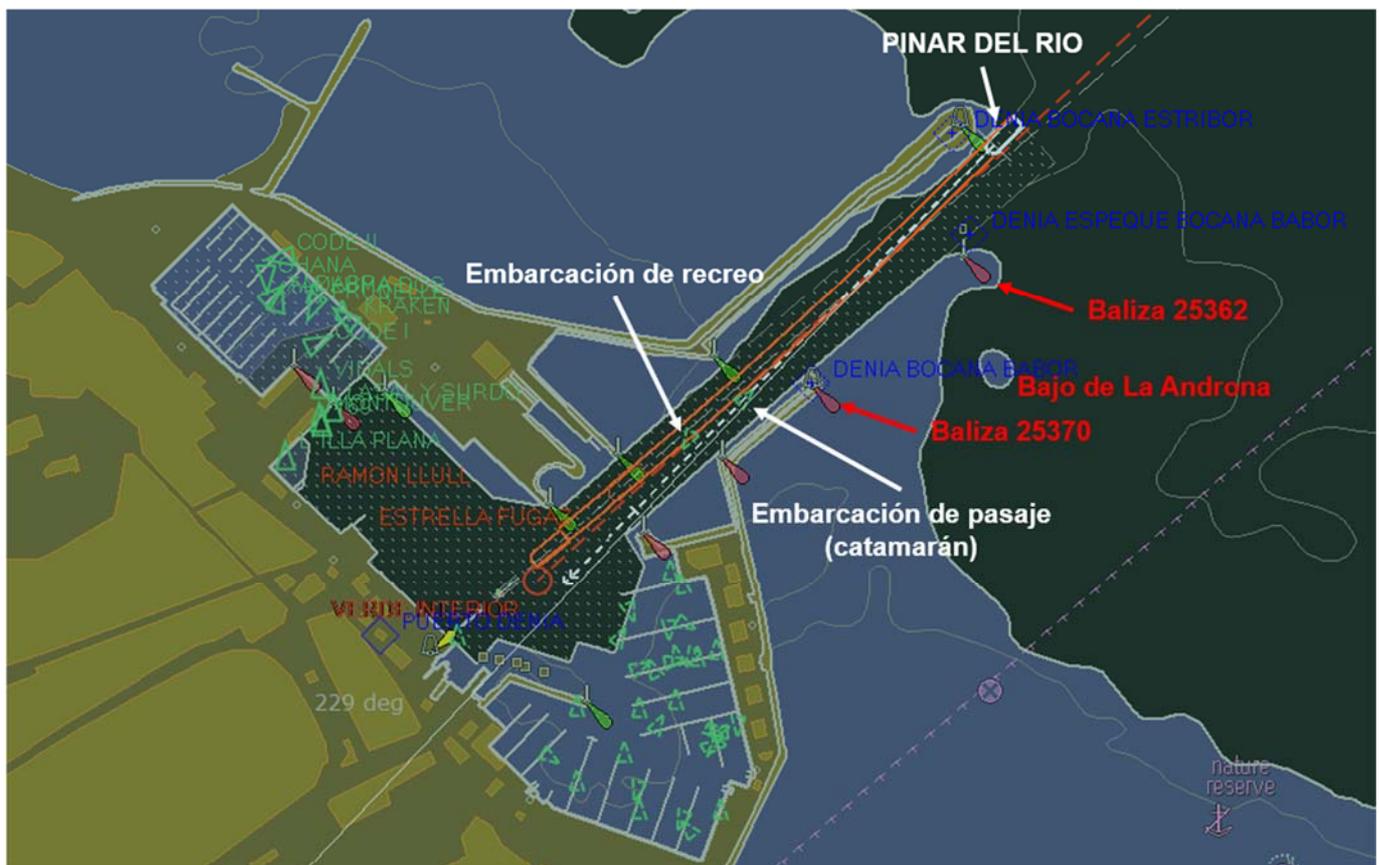


Figura 6. Screen capture of the ECDIS on the ship PINAR DEL RIO, at 23:16:16 hours [Source: Ship's VDR]

At the time of the grounding, the ship was sailing with a heading of 224.2° and a ground speed of 10.7 knots. The vessel's speed had been gradually reduced from the 29 knots it travels at in open water. Despite this still being a relatively high speed, vessels of this type, with low displacement and a large sail area, often approach the entrance channel at high speed to counteract drift and the loss of momentum caused by currents and changing wind directions so as not to lose their ability to manoeuvre. Hence the importance of ensuring the channel is clear when entering Denia's port (see Figura 6).

The ECDIS of both the ship PINAR DEL RIO and the CCS Valencia show that the MUNDO MARINO DOS catamaran sailed along the channel with a heading of 47.3° and a speed of 2.9 knots. At 23:16:20 hours, after the ship PINAR DEL RIO had run aground, the MUNDO MARINO DOS began to change course, falling to starboard and increasing its speed to 5 knots (see *figure 7*). At 23:16:59 hours, it passed and cleared the far end of the South Breakwater to fall further to starboard and exit the channel (see *figure 7*). Ultimately, the catamaran MUNDO MARINO DOS manoeuvred out of the port exactly as the captain of ship PINAR DEL RIO had anticipated.

By 23:17:29 hours, the catamaran was leaving the channel on a heading of 91.1° and with a speed of 3.9 knots, passing between the red sea beacon (25362) and the La Androna shallow.

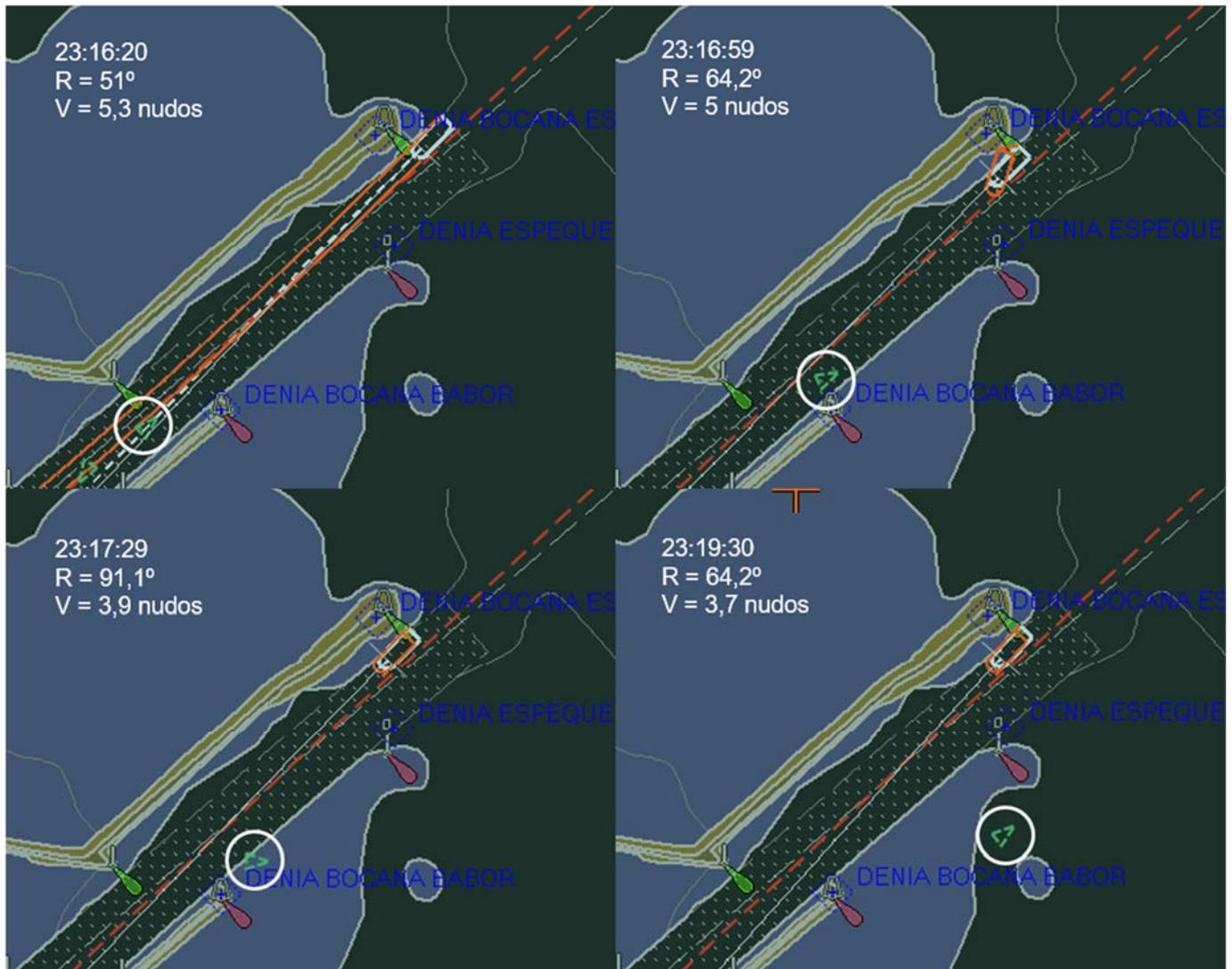


Figura 7. The course followed by the MUNDO MARINO DOS catamaran [Source: VDR on board the PINAR DEL RIO ship]

When the PINAR DEL RIO ran aground, the AIS indicated that the closest point of proximity to the catamaran was 0.01 miles and 1 minute and 33 seconds away. Therefore, if it had escaped the accident and continued sailing, its capacity to manoeuvre would have been compromised and limited by having a breakwater to starboard and an area of shallow water to port, which would have generated excessive proximity, contrary to good seamanship practices.

4.2. The management, coordination and control of maritime traffic in the Port of Denia

Navigation through narrow channels is provided for in rule 9 of the Regulations. Thus, paragraph d) establishes that: "Vessels should not cross a narrow passage or channel if by doing so they impede the transit of another vessel that can only navigate safely within said passage or channel".

In the Port of Denia, especially in summer, a large number of smaller, predominantly recreational boats and roll-on roll-off passenger ships covering the various scheduled crossings to the Balearic Islands converge. The port has four mooring areas for leisure boats, a fishing dock and a dry dock for medium-sized craft.

This raises the question of how the skippers of all these vessels are informed about the maritime traffic entering and leaving the port so as to assess whether the manoeuvres they intend to carry out pose any kind of danger either to their vessel or the larger ones that can only navigate safely inside the narrow channel.

Also, relative to the management of maritime traffic in the Port of Denia but not directly related to this accident, it should be noted that it's not uncommon for the smaller boats sailing through the channel to compromise the manoeuvring and safe transit of commercial vessels, leading to a risky scenario. Such is the extent of the problem that the Maritime District of Denia has registered several complaints from captains of passenger ships, and both the Maritime District of Denia and the Alicante Harbour Master's Office have repeatedly informed the Denia Port Authority of the existence of those complaints and the need to regulate maritime traffic inside the port.

The Port of Denia is run by the Valencian Regional Government's Ports System, which is responsible for the management, coordination and supervision of maritime port traffic⁹. Despite this, there is no approved port regulation, provision or ordinance to regulate said service.

Despite the problem being well-recognised, the only control measure in force is the maritime pilot service. However, only commercial vessels with a gross tonnage equal to or greater than 500 are obliged to use the service when entering and leaving the port unless the vessel's captain has an exemption. By contrast, the navigation of smaller vessels through the port's access channel is subject only to the greater or lesser degree of prudence exhibited by their skippers, which can sometimes lead to perilous situations.

⁹ Art. 53(2)(a) of Law 2/2014, of 13 June, on Ports of the Generalitat

5. CONCLUSIONS

Following an objective analysis of the data and circumstances involved in this accident, we have concluded that it was not caused by any technical malfunction or issue but by the fact that the ship PINAR DEL RIO manoeuvred out of the port's entrance and exit channel, positioning itself in excessive proximity to the dock's breakwater. The captain failed to adequately assess all the surrounding elements when making the decision to enter the port.

The fact that the bridge officers were focused on the training and familiarisation of the bridge and engineer officers who were to take over the watch, rather than on the port entry manoeuvre, is considered a contributing factor.

Given that nobody was responsible for monitoring traffic and authorising the ship PINAR DEL RIO to enter the port while a 25 m vessel with 60 passengers on board was leaving via the access channel, we have concluded that a failure to coordinate and control the maritime traffic in the Port of Denia also contributed to the accident.

6. SAFETY RECOMMENDATIONS

To the ship's owner company BALEARIA EUROLINEAS MARITIMAS:

1. That, as long as the Port of Denia remains without a traffic control service, its port entry procedures should be amended to include the obligation to wait outside the port if vessels of a certain size are departing and establish radio contact with those vessels before accessing the channel.

To the Valencian Regional Government's Directorate-General of Ports, Airports and Coasts:

1. That it should develop and establish an effective system for the management, coordination and supervision of maritime traffic in the Port of Denia.