MONALISA 2.0 – Activity 4

Mass Evacuation In Ports Pilot Exercise

Document No: MONALISA 2.0_D4.1.2
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ANNEX 1 Images of exercise performed
1. Document summary

The MONALISA 2.0 project contains sub-activity 4.1 concerning safety in ports, which in turn includes a study about the mass evacuation of a passenger ship berthed at a port.

While the vast majority of merchant ships have crews ranging from 7/8 to 20/25 people, the number of people on board passenger ships can reach 4,000/6,000 on large cruise ships, counting both passengers and crew, and 1,200/1,800 in the case of Ropax ferries.

Such large numbers of people mean that port emergency plans need to have specific procedures to deal with any emergency on board these vessels, and particularly if the ship has to be abandoned for safety or security reasons.

This document covers all the aspects required to carry out a simulation exercise for a mass evacuation on board a passenger ship on 15th June 2015 in the Port of Valencia (Spain).

The document is also intended to be a guide or example for running simulations of this type in other ports tailored to the structure of the port or country for responding to such emergencies.

Finally, the data and findings in this sub-activity may be helpful if the European Union brings in a directive or recommendation to ensure European ports have a minimum response structure in place which is needed for emergencies that may take place on merchant or passenger ships berthed or anchored in the port’s waters.
2. Introduction

2.1 Preliminary considerations

Especially in summer there are usually large numbers of people in ports on cruise ships and ferries and consequently also in the terminals where passengers and their vehicles embark and disembark from these ships.

While the vast majority of merchant ships have crews ranging from 7/8 to 20/25 people, on large cruise ships the number of passengers plus crew onboard may be over 1,200 people.

There may be 1,200/1,500 passengers on regular line passenger ships and/or Ropax ferries while the figure can reach over 4,000 passengers on large cruise ships. In addition, there may be two or more cruise ships berthed at the same quay or at very nearby quays at the same time.

Cruise ship: ADVENTURE OF THE SEAS
Passenger capacity: 3,114
Crew: 1,180

Ro-Pax ferry: MARTIN I SOLER
Passenger capacity: 1,200
Crew: 21 Vehicles: 105

Exterior shots of passenger terminals
Serious emergencies or accidents aboard cruise ships or Ropax ferries are rare in a port. The vast majority of accidents or incidents are minor nautical accidents, especially contact or collision with other ships or quays when arriving/berthing or departing/unberthing, often due to poor weather conditions such as high winds and storms.

However, on occasion serious nautical accidents occur close to the coast or in ports that can result in the loss of the ship and lives.

**Cruise ship COSTA CONCORDIA**
Giglio Island (Italy) – January 2012
32 dead, 64 injured (3 serious)
3,206 passengers and 1,023 crew rescued

**Ropax DON PEDRO**
Departure from the Port of Ibiza - July 2007
0 dead
18 crew and 2 passengers rescued
According to studies carried out in the Safeguard project, the causes of abandonment and evacuation of passenger ships are as follows:

<table>
<thead>
<tr>
<th>BASIC CAUSES OF ABANDONMENT</th>
<th>ABANDON AT SEA (by any means)</th>
<th>DISEMBARK AT BERTH</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLLISION</td>
<td>1%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>CONTACT</td>
<td>2%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>FIRE / EXPLOSION</td>
<td>12%</td>
<td>13%</td>
<td>25%</td>
</tr>
<tr>
<td>FOUNDERED</td>
<td>4%</td>
<td>0%</td>
<td>4%</td>
</tr>
<tr>
<td>HULL / MACHINERY DAMAGE</td>
<td>2%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>WRECKED / STRANDED</td>
<td>21%</td>
<td>8%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>45%</strong></td>
<td><strong>55%</strong></td>
<td><strong>100</strong></td>
</tr>
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1 Safeguard (www.safeguardproject.info) was a medium-scale targeted research project with funding from the European Commission 7th Framework Programme for Sustainable Surface Transport. The project ran for three years from April 2009 to March 2012. Bringing together nine international companies and research institutes based in Europe and Canada, SAFEGUARD performed a series of full-scale ship trials to gather data for calibration and validation of ship-based evacuation models and investigated additional benchmark scenarios to be used in certification analysis.

2 The research included a quantitative study of accident databases and qualitative assessment of accident reports and professional mariners’ feedback. For the quantitative study, 135 relevant accidents from over the last 10 years were studied (2000-2011). Factors to emerge included that 20% of evacuations happened in listing conditions and 12% with smoke having spread in the ship superstructure. 50% of abandonments were at sea, the other 50% took place in port (of origin, destination, or transit). One third of these disembarkations at berth probably happened in hazardous conditions.

Accident reports and testimonies also provided excellent details on past incidents. They revealed, for example, that in addition to accidents, passenger assembly occurred for “man overboard” or security alerts as well.

The research highlighted that the evacuation process on Ropax and cruise ships differs. Another factor to emerge was that evacuation procedures on cruise ships can vary considerably from one ship to another.
It is relatively common for explosions or fires to occur on board large passenger ships when they are sailing the high seas, i.e. outside port waters. Besides the sadly famous *Costa Concordia*, listed below are some other accidents of this type which have taken place this century, some of them in port.

**Cruise ship THE CALYPSO**

Fire in the starboard main engine on 6th May 2006 while sailing in the English Channel 16 miles off Eastbourne on the English coast during its voyage from the Port of Tilbury to St Peter Port on Guernsey.

There were 462 passengers and 246 crew members on board *The Calypso*. During the fire the passengers remained at the muster stations on the boat deck all night while the ship was towed to the port of Southampton by the tug *Anglian Monarch*, where all they disembarked.

**Ropax QUEEN OF SCANDINAVIA**

Fire in the ancillary engine room on 16th April 2009, when the ship was berthed at the Swedish port of Oskarshamn in the Baltic Sea. The ship was being used as a floating hotel for workers at a nuclear power plant.

There were 238 passengers on the ship who were evacuated to shore as well as 36 crew members. The fire was put out using CO2 with the help of the crew and the Swedish fire brigade.

**Ropax LISCO GLORIA**

Explosion and fire on board on 9th October 2010 in the Strait of Femer Bælt, during its voyage across the Baltic Sea from Kiel to Klaipeda (Lithuania) with 204 passengers and 32 crew.

All passengers and crew were rescued by the German Coast Guard rescue services and transferred to other vessels which rushed to the accident site. Three passengers were evacuated by helicopter to hospital for smoke inhalation.
Cruise ship NORDLYS

Fire in the engine room on 15th September 2011 while sailing near the town of Aalesund on the Atlantic coast of Norway.

The accident claimed the lives of two crew members and another two were seriously injured after suffering severe burns and smoke inhalation.

The fire meant the ship, carrying 262 people including 55 crew members, had to be evacuated. The 207 passengers were taken to the upper decks immediately to begin orderly evacuation in lifeboats. The crew remained on board to assist with firefighting operations.

The ship was towed to the port of Aalesund. Heavy smoke forced the evacuation or confinement of part of the town near the quay. When berthed, the ship had minor contact with a building near the quay.

Several fire crews tried to put out the fire, which was not controlled until the afternoon, but the constant pumping of water into the Nordlys meant that it listed to more than the critical point of 20º which raised fears that the ship would sink.

To prevent this, bilge pumps were used to bail out water from inside the Nordlys but their operation was hampered because they were continuously blocked by foreign objects.

The Nordlys is a small cruise ship built in 1994. Its gross tonnage is 11,204 G.T. It is 122 metres long, and has a beam of 23.8 metres and a draught of 6.4 metres.

The ship was engaged in coastal sailing between the Norwegian ports of Bergen and Kirkenes with some passengers on a full cruise and others being carried between intermediate ports.
Cruise ship COSTA ALLEGRA

Fire in the engine room on 27th February 2012 in the Indian Ocean near the Seychelles on its way from the Port of Diego Suarez (Madagascar) to the Seychelles.

The fire confined to the engine was put out, leaving the ship adrift without propulsion and without power except minimum emergency power.

There were 636 passengers and 413 crew on board.

The captain sent an SOS and as a precaution ordered the passengers to gather at the evacuation points. They were told not to stay in their cabins because of the heat and lack of ventilation.

The Costa Allegra was slowly towed to the island of Mahe by the French tuna fishing boat Trevignon which came to help the cruise ship first. Two ocean-going tugs were to join the operation but they needed time to reach the Allegra.

Food, satellite phones, radios, torches and “relief goods” for passengers were dropped from a helicopter.

In tropical temperatures, the passengers and crew stayed on the upper deck of the ship for almost 72 hours, eating only uncooked food and sleeping in hammocks. They had no water for washing or toilet facilities.
Ropax SEWOL

The ship sank on 16th April 2014 about two kilometres off Byungpoong Island (South Korea) on its journey of about 550 km from Inchon to Jeju Island, when it was three hours’ sailing from the latter.

It was the result of a build-up of successive causes: a sharp and prolonged turn, a ship with little stability as ballast had been replaced by cargo, and cargo shifting which allowed water to flow into the ship through the side door of the cargo loading bay and the car entrance located at the stern. The ship listed heavily which caused her to capsize and sink.

The ship was carrying 476 people and 300 of them died or were unaccounted for, many of them secondary school pupils from Seoul.

When the ship was already in danger, the passengers were ordered to stay in their cabins and they did not move.

When capsizing became imminent the evacuation order could not be given to the passengers as the ship's public address system was no longer working.

All 15 surviving crew members were arrested and charged with negligence and failure to render aid to passengers.

Ropax NORMAN ATLANTIC

On 28th December 2014, the ship caught fire in the Strait of Otranto in the Adriatic Sea.

The fire started in the cargo hold (garage) at about 6 am, half an hour after leaving the port of Igoumenitsa, an intermediate stop en route from Patras (Greece) to Ancona (Italy).

At the time of the fire, the ship was carrying 487 passengers, 55 crew members and 222 vehicles.

The passengers said they were not given the order to abandon ship until four hours after the fire had started, and even though there was smoke in their cabins, no alarm was sounded. They also claimed that the Norman Atlantic’s crew gave them little help, being overwhelmed by the crisis.
A group of 49 people managed to escape in a lifeboat and were rescued by the container ship *Spirit of Piraeus*. The other lifeboats could not be used for various reasons.

International SAR resources directed and coordinated by the Italian Coast Guard began evacuating passengers and crew on board, who were on the upper decks of the ship.

The rescue lasted more than two days in conditions of strong winds and very rough seas.

The bodies of nine victims were recovered from the sea, while another 19 are still unaccounted for.

In addition, two members of the crew of the Albanian tug *Illyria* died during rescue operations when the towing cable attached to the ship snapped and hit them.

The Italian authorities opened a criminal investigation into the fire to determine whether it was due to criminal negligence.

**Ropax SORRENTO**

On 28th April 2015, the ship caught fire 17 miles from the Port of Palma de Majorca (Spain) when sailing to the Port of Valencia.

A fire in a vehicle stowed on a cargo deck that could not be brought under control made it necessary to abandon ship.

160 passengers and crew abandoned it in lifeboats and were rescued at sea by the Ropax ferry *Puglia* that had come to the rescue.

A helicopter evacuated three crew members suffering from smoke inhalation. The rescued people disembarked that afternoon at the Port of Palma de Majorca.
Other relevant accidents:

Cruise ship **ECSTASY**
Fire 1998

Cruise ship **TROPICALE**
Fire 1999

Cruise ship **STAR PRINCESS**
Fire 2006

Cruise ship **GRANDEUR OF THE SEAS**
Fire 2013

The wide variety of actual accidents or incidents involving passenger ships which have been described above shows that sometimes ports are also scenarios where events of this kind can take place.

This may be because the accident happens in the port when the ship is berthed there or alternatively because the port is a safe haven for a passenger ship involved in an emergency. In the latter case, the ship may still have passengers on board or they may have been evacuated prior to arriving in the port.

Also worth mentioning is the possible mass evacuation of a passenger ship berthed in port for reasons unrelated to safety but rather on security grounds: a bomb threat, attempted hijacking, etc.
Based on these premises, this mass evacuation exercise is proposed at the Port of Valencia (Spain) involving a passenger ship, a passenger terminal, and national, regional, municipal and port search and rescue, civil defence (firefighting) and marine oil pollution services.
2.2 Training for crew and passengers concerning what to do in emergency situations on board

Regulation 19: “Emergency training and drills” in Chapter III (Life-saving appliances and arrangements) of the SOLAS Convention is applicable to all vessels whether passenger or not and regulates the minimum training and information for crew and passengers concerning what to do in emergency situations on board and which in particular may lead to abandonment.

Regulation 19: “Emergency training and drills”
Chapter III (Life-saving appliances and arrangements)
SOLAS Convention

2.2.1 Emergency training and drills for the crew

Essentially:

- Every crew member with assigned emergency duties shall be familiar with these duties before the voyage begins.

- Every crew member shall participate in at least one abandon ship drill and one fire drill every month. The drills of the crew shall take place within 24 hours of the ship leaving a port if more than 25% of the crew have not participated in abandon ship and fire drills on board that particular ship in the previous month.

- On-board training in the use of the ship’s life-saving appliances, including survival craft equipment, and in the use of the ship’s fire-extinguishing appliances shall be given as soon as possible but not later than two weeks after a crew member joins the ship.

- In abandon ship drills, every crew member will report to station and prepare for the duties described in the muster list.

Each abandon ship drill shall include: .1 summoning of passengers and crew to muster stations with the alarm required by Regulation 6.4.2 followed by drill announcement on the public address or other communication system and ensuring that they are made aware of the order to abandon ship.

Each abandon ship drill shall include checking that passengers and crew are suitably dressed, checking that lifejackets are correctly put on and lowering of at least one lifeboat after any necessary preparation for launching.
2.2.2 Instructions and drills for passengers

Since 1st January 2015, on a ship engaged on a voyage where passengers are scheduled to be on board for more than 24 hours, it is recommended that the muster of newly-embarked passengers should take place prior to the departure at every port of embarkation. In cases where new passengers arrive after the above muster has been completed, they should be promptly provided with individual or group safety briefings.

In its circular MSC.1/Circ.1446/Rev.2, the IMO recommended that emergency instructions to be given to passengers when mustering drills are performed should include the following:

1) when and how to put on a lifejacket;
2) description of emergency signals and appropriate responses in the event of an emergency;
3) location of lifejackets;
4) where to muster when the emergency signal is sounded;
5) method of accounting for passenger attendance at musters both for training and in the event of an actual emergency;
6) how information is provided in an emergency;
7) what to expect if the Captain orders an evacuation of the ship;
8) what additional safety information is available;
9) instructions on whether passengers should return to cabins prior to mustering, including specifics regarding medication, clothing, and lifejackets;
10) description of key safety systems and features;
11) emergency routing systems and recognizing emergency exits; and
12) who to seek out for additional information.

During the drill, passengers gather at their muster stations with each one usually being assigned a specific station. In general, the muster stations are in public areas of the ship or on the boat deck. They are normally close to the ship’s lifeboats.
Some companies also have passenger safety instruction videos. On embarkation day, the cabin steward leaves the television on tuned to the appropriate channel so the video is played on a loop when passengers arrive at the cabin for the first time.

The SOLAS Convention also says that illustrations and instructions in appropriate languages shall be posted in passenger cabins and be conspicuously displayed at muster stations and other passenger spaces to inform passengers of:

1) their muster station;
2) the essential actions they must take in an emergency; and
3) the method of putting on lifejackets.
2.3 Muster list and emergency instructions in passenger ships

Evacuation and action procedures in case of abandonment are set out in the “Muster list and emergency instructions” which all passenger and cargo ships must have.

The muster list shall specify details of the general emergency alarm and public address system prescribed by section 7.2 of the Code and also action to be taken by crew and passengers when this alarm is sounded. The muster list shall also specify how the order to abandon ship will be given.

Clear instructions to be followed in the event of an emergency shall be provided for every person on board. In the case of passenger ships, these instructions shall be drawn up in the language or languages required by the ship's flag State and in English.

Muster lists and emergency instructions shall be exhibited in conspicuous places throughout the ship including the navigation bridge, engine-room and crew accommodation spaces.
Among other requirements, Regulation 37 in Chapter III of the Solas Convention states that:

- The muster list shall specify details of the general emergency alarm and public address system prescribed by section 7.2 of the Code and also action to be taken by crew and passengers when this alarm is sounded. The muster list shall also specify how the order to abandon ship will be given.

- Each passenger ship shall have procedures in place for locating and rescuing passengers trapped in their staterooms.

- The muster list shall show the duties assigned to the different members of the crew including:
  1) closing of the watertight doors, fire doors, valves, scuppers, sidescuttles, skylights, portholes and other similar openings in the ship;
  2) equipping of the survival craft and other life-saving appliances;
  3) preparation and launching of survival craft;
  4) general preparations of other life-saving appliances;
  5) muster of passengers;
  6) use of communication equipment;
  7) manning of fire parties assigned to deal with fires; and special duties assigned in respect to the use of firefighting equipment and installations.
• The muster list shall specify which officers are assigned to ensure that life-saving and fire appliances are maintained in good condition and are ready for immediate use.

• The muster list shall specify substitutes for key persons who may become disabled, taking into account that different emergencies may call for different actions.

• The muster list shall show the duties assigned to members of the crew in relation to passengers in case of emergency. These duties shall include:
  1) warning the passengers;
  2) seeing that they are suitably doped and have donned their lifejackets correctly;
  3) assembling passengers at muster stations;
  4) keeping order in the passageways and on the stairways and generally controlling the movements of
  5) the passengers; and
  6) ensuring that a supply of blankets is taken to the survival craft.

• The muster list shall be prepared before the ship proceeds to sea. After the muster list has been prepared, if any change takes place in the crew which requires an alteration in the muster list, the Captain shall either revise the list or prepare a new list.

The format of the muster list used on passenger ships shall be approved by the authorities in the country of registration of the ship.
2.4 **Procedures for organising evacuation on board passenger ships**

The muster list on passenger ships may include a number of procedures for organising the evacuation.

In the event of a real onboard emergency the ship’s Captain decides whether evacuation is to be carried out in accordance with the muster list or has to be amended due to the circumstances of the emergency, such as smoke in cabins and passageways, the ship listing, need to disembark to shore if the ship is berthed, etc.

**Procedure 1**
Widely used on cruise ships. Passengers go to their cabins, pick up and put on their lifejackets, and are guided to the muster stations.

**Procedure 2**
Passengers are guided to the muster stations where they are given their lifejackets.

**Procedure 3**
Widely used on ferries. All passengers go their accommodation places (cabins or seat lounges). Passengers in cabins pick up and put on their lifejackets and are guided to the muster stations.
Passengers in seat lounges are guided to the muster stations where they are given their lifejackets.

Procedure 4
Crew members pick up the lifejackets from the passengers’ cabins and take them to the muster stations where they are given to the passengers.

Procedure 5 (evacuation to shore).
On some passenger ships the procedure may vary if the evacuation is to shore with the ship berthed. The objective is to save time by preventing passengers being guided to muster stations normally located close to the boat deck, which is at a higher level than the deck where the embarkation gate or gates are.

The crew will be in the boat deck halls where they will tell the passengers whether they should go up or down the stairs to reach the disembarkation gate which leads to shore.
2.5 Means of escape on board passenger ships

2.5.1 Survival craft at sea

The means of rescue in case of abandonment of passenger ships at sea and out of port are survival craft, which may include the following types as specified percentages of the total:

**Fully or partially enclosed lifeboats**

![Lifeboats](image1.png)

**Inflatable or rigid liferafts**

![Liferafts](image2.png)

**Marine Evacuation Systems (MES)**

A Marine Evacuation System consists of a kind of slide or tube which passengers slide down to inflatable liferafts that are automatically deployed once the system is activated.

![MES](image3.png)
Evacuation times are significantly shorter with these systems than in those using lifeboats and liferafts. They can also be deployed with greater listing angles than those required for lowering lifeboats.

2.5.2 Means of abandonment and escape from the ship when berthed in port

In case of an emergency on board a passenger ship which is berthed in port and which requires it to be abandoned with evacuation to shore of passengers or crew, survival craft will not be used unless there is a very good reason that prevents exit through the doors, sidescuttles or side shell doors leading to shore.

In port the ship should be abandoned using the doors, sidescuttles or side shell doors used by passengers, crew and any Ro-ro cargo to board and leave the ship.

Passenger embarkation gates

Passenger embarkation gates may be at different heights of the ship’s hull and need accommodation ladders or ramps from the ship or terminal or passenger boarding bridges.
Other boarding gates of the ship

Other doors or sidescuttles in the hull at the same height as the quay for embarking or disembarking the crew or pilot, loading stores or supplies, disposing of rubbish, embarking or disembarking at sea, picking up rescued people, etc.

Doors for embarking or disembarking Ro-ro cargo

In Ropax ships the doors for embarkation and disembarkation of Ro-ro cargo (cars, HGVs, flatbeds, etc.) located at the stern, bow or side of the vessel.
2.6 Evacuation plans in passenger terminals

Passenger terminals are extremely important port facilities in terms of safety. They handle passenger traffic in the port for different types of passenger ships on international, domestic or local routes.

They usually consist of a building providing services: arrival and departure halls, departure lounges, ticket sale offices, shops, administrative offices, café and/or restaurant, information desks, lavatories and government offices: border agency, Customs, foreign health, etc.

In most cases, the building is connected to passenger ships berthing at the nearby quays via boarding bridges with mobile walkways which are connected to the ship’s embarkation gates and used by passengers to board or leave the ship.

In other cases, the ship is boarded and left from the quay using ramps, accommodation ladders or stairs.

In almost all cases, passengers use the passenger terminal building to board or leave the ship.
Passenger terminals may also have concourses adjoining the quays for parking cars, heavy goods vehicles and flatbeds to be loaded on or unloaded from Ropax ships.

In these cases, the Emergency Plan sets out the procedure for evacuating the building and the people in charge of carrying it out. This procedure essentially consists of the evacuation alarm, leading and gathering people towards the escape routes, controlling the flow of people in doorways and accesses to stairways, preventing the use of the lifts, keeping areas outside escape doors clear, bringing evacuees together at muster points and counting them, supporting reception of external assistance services, etc.

In the case of a mass evacuation of a passenger ship through the passenger terminal building, the facility’s Emergency Plan must be activated to assist with passenger transit and evacuation to a safe area outside the building or inside if it has sufficient capacity.
2.7 **Means of escape in passenger terminals**

As noted in the previous section, the main means in passenger terminals for evacuating passengers from ships are:

**Boarding bridges with mobile walkways which connect the ship’s embarkation gate and the passenger terminal building**

![Boarding bridges with mobile walkways](image1)

**Boarding bridges consisting of ramps which may or may not have mobile walkways that connect the ship’s embarkation gate and the passenger terminal building**

![Boarding bridges consisting of ramps](image2)

**Accommodation ladders, ramps, and escalators between the ship and the quay**

![Accommodation ladders, ramps, and escalators](image3)
Accidents with the means at passenger terminals

These means may break or collapse if they are overloaded or hit by vehicles or equipment moving or operating in the area.
2.8 Port emergency plans

Spanish law requires the entity (Port Authority) managing a port to have an Emergency Plan in place which can handle any accident or incident taking place in the port.

The Port Emergency Plan is the highest level of the emergency plans of the facilities in the port and the ships that are berthed or anchored in its waters.

In turn, the Port Emergency Plan has a higher level External Emergency Plan for the Port which is activated when the means and resources to manage the emergency are insufficient or there are risks to people outside the port.

The External Emergency Plan for a Spanish Port is the responsibility of the Regional Government and can call on all city, regional and, if need be, national means and resources.
3. Specification of the pilot exercise

3.0 Preliminary note on the joint performance of MONALISA 2.0 Project Activity 4 exercises

This mass evacuation exercise on a passenger ship at port, coming under MONALISA 2.0 Project Sub-activity 4.1 and organised by the Port Authority of Valencia, is conducted in conjunction with the mass rescue operation exercise on a passenger ship at sea, under MONALISA 2.0 Project Sub-activity 4.2 and organised by the Spanish Maritime Safety Agency (SASEMAR).

The joint exercise is called the SAREX 25-15 exercise.

Both exercises involve mass (large-scale) evacuations or rescue which can be defined as the need to evacuate large numbers of people in a single or multiple operational area affected by an emergency.

In addition, other areas are needed to accommodate rescued or evacuated people and which provide them with immediate shelter where they can receive any kind of care.

Serious incidents involving mass evacuation operations have not been uncommon and may happen anywhere and anytime.
An effective response to such serious incidents calls for immediate, large-scale, well planned and closely coordinated actions together with using resources from multiple organisations.

The reasons for carrying out the two exercises together are as follows:

- The same port emergency plans are used:
  - To assist passengers rescued at sea.
  - And to assist passengers evacuated from a ship berthed at the port.

- Performing the two exercises separately in short time would have meant:
  - Port, city and regional emergency services would have to be mobilised and deployed twice.
  - Many Monalisa 2.0 Project people could not have witnessed both exercises.

- Economic savings for the Monalisa 2.0 Project.

- Compliance with the objectives of each exercise.
**3.1 Scope**

The exercise consists of handling a maritime accident on a passenger ship (fire) entering a port to berth at one of its passenger terminals which involves abandoning the ship and mass evacuation of all passengers to shore in an accident with multiple victims (injured and dead).

The exercise is intended to provide planners of exercises or drills for accidents of this kind in ports with guidance about possible procedures and responsibilities in design and implementation.

This exercise sets out everything required for its implementation under Spanish civil defence legislation and using the existing emergency plans for the ship (*Juan J. Sister*), the facility (Cía. Trasmediterránea, S.A., passenger terminal) and the port (Port of Valencia).

Some parts of the exercise may be helpful in addressing mass evacuations of passenger ships in security incidents at the port: a bomb threat, attempted hijacking, etc.

**3.2 Type of emergency**

The exercise seeks to cover the following emergency scenarios at a port.

- Fire on board a passenger ship berthed in port and putting out the fire.
- Abandoning the ship in port. Mass evacuation of passengers.
- Accident with multiple victims in the port (injured and dead on board).
  - Rescue of those injured and dead on board.
  - Rescue of those injured and dead in the water.
  - Triage and medical care for multiple numbers of injured people in the scenario.
  - Possible swamping of hospital and mortuary services.
  - Psychological care for passengers and their families.

These accident risks are classified separately as follows:
## Fire on board a passenger ship berthed in port and putting out the fire

<table>
<thead>
<tr>
<th>Risk exposure</th>
<th>Habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk frequency (probability)</td>
<td>Possible (low / very low)</td>
</tr>
<tr>
<td>Risk severity (magnitude, consequences)</td>
<td></td>
</tr>
<tr>
<td>For people</td>
<td>Fatal / Catastrophic</td>
</tr>
<tr>
<td></td>
<td>Significant / Very Significant</td>
</tr>
<tr>
<td>For property</td>
<td>Localised air or sea pollution</td>
</tr>
<tr>
<td>For the environment</td>
<td></td>
</tr>
<tr>
<td>Risk category</td>
<td>Acceptable with SOLAS Convention compliance</td>
</tr>
<tr>
<td>Port emergency services response time</td>
<td>&lt; 20 m.</td>
</tr>
</tbody>
</table>

## Abandoning the ship in port. Mass evacuation of passengers

<table>
<thead>
<tr>
<th>Risk exposure</th>
<th>Habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk frequency (probability)</td>
<td>Possible (very low)</td>
</tr>
<tr>
<td>Risk severity (magnitude, consequences)</td>
<td></td>
</tr>
<tr>
<td>For people</td>
<td>Injuries / Fatal</td>
</tr>
<tr>
<td></td>
<td>Significant / Very Significant</td>
</tr>
<tr>
<td>For property</td>
<td>Insignificant</td>
</tr>
<tr>
<td>For the environment</td>
<td></td>
</tr>
<tr>
<td>Risk category</td>
<td>Acceptable with SOLAS Convention compliance</td>
</tr>
<tr>
<td>Port emergency services response time</td>
<td>&lt; 15 m.</td>
</tr>
</tbody>
</table>

## Accident with multiple victims in the port (injured and dead on board)

<table>
<thead>
<tr>
<th>Risk exposure</th>
<th>Habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk frequency (probability)</td>
<td>Possible (very low / remote)</td>
</tr>
<tr>
<td>Risk severity (magnitude, consequences)</td>
<td></td>
</tr>
<tr>
<td>For people</td>
<td>Catastrophic</td>
</tr>
<tr>
<td></td>
<td>Insignificant</td>
</tr>
<tr>
<td>For property</td>
<td>Insignificant</td>
</tr>
<tr>
<td>For the environment</td>
<td></td>
</tr>
<tr>
<td>Risk category</td>
<td>Acceptable with establishment Emergency Plans in the port.</td>
</tr>
<tr>
<td>Port emergency services response time</td>
<td>&lt; 30 m.</td>
</tr>
</tbody>
</table>
The classification of all accident risks in the exercise is as follows:

<table>
<thead>
<tr>
<th>Risk exposure</th>
<th>Habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk frequency (probability)</td>
<td>Possible (remote)</td>
</tr>
<tr>
<td>Risk severity (magnitude, consequences)</td>
<td></td>
</tr>
<tr>
<td>For people</td>
<td>Catastrophic</td>
</tr>
<tr>
<td>For property</td>
<td>Significant / Very Significant</td>
</tr>
<tr>
<td>For the environment</td>
<td>Localised air or sea pollution</td>
</tr>
<tr>
<td>Risk category</td>
<td>Acceptable with SOLAS Convention compliance and the establishment of Emergency Plans in the port.</td>
</tr>
<tr>
<td>Port emergency services response time</td>
<td>&lt; 30 m.</td>
</tr>
</tbody>
</table>

The priorities for emergency services in accidents with multiple risks will be to save lives followed by protecting the environment and then protecting or salvaging property.
3.3 **Location of the scenario**

3.3.1 **Port of Valencia**

The exercise will be conducted at the Port of Valencia and the ship will enter the port to berth at the Transversal Quay. Every effort will be made to minimise the impact the exercise may have on port operations in the area.

![View of the Port of Valencia. Location of the Transversal Quay and the Passenger Terminal.](image-url)
3.3.2 Cía. Trasmediterránea S.A.: shipping company & passenger terminal

Embarkation and disembarkation for passenger ships (cruise ships, ferries and Ropax) that berth at the Poniente and Transversal Quays takes place at the passenger terminal run by the shipping company Cía. Trasmediterránea S.A., using the building and the walkways and boarding bridges connected to the ships’ embarkation gates.

Embarkation and disembarkation of vehicles (cars, lorries and flatbeds) on passenger ships (ferries and Ropax) on these quays takes place through the ship’s roll-on/roll-off doors whose ramps rest on the quay.

Some of the evacuees from the ship will have to enter the passenger terminal via the boarding bridge. Passenger terminal staff will receive them and lead them to the muster point that is chosen.

Every effort will be made to minimise the impact the exercise may have on the operations of the passenger terminal and its quays.
3.3.3 Ship Juan J. Sister

The exercise will be conducted using a Ropax ferry, the Juan J. Sister, owned by shipping company Cía. Trasmediterránea S.A.

Main specifications:
Length: 151 m
Breadth: 26 m.
Draught: 6 m.
Propulsion power: 17,130 hp
Speed: 17 knots
Capacity: 672 passengers
148 vehicles
1,290 linear m.
The extras who will take part in the exercise as passengers will embark on the ship beforehand. The crew will assign accommodation on board to each one.

Given that the vessel does not routinely undertake voyages lasting more than 24 hours, there will be no specific mustering exercises for passengers and they will not be given instructions about using lifejackets or what to do in an emergency.

They will, however, receive instructions or training identical to that given to passengers on the ship’s usual routes.

Once accommodation has been assigned to each passenger (seats and cabins) they will be allowed to move around all the ship’s public areas: café, shop, swimming pool, solarium, restaurant, self-service restaurant, games room, reading room, etc.

When the fire alarm goes off on the ship and the order to abandon ship is given, the crew will gather and guide the passengers to the various exits of the ship as planned in a later section.
3.3.4 Passengers to be evacuated

Approximately 300 extras will take part in the exercise as passengers, and 40 of them will play people who are injured.

3.4 Classification of the people who will take part in the exercise

The people who will take part in the exercise can be divided into the following three groups or levels:

1) Extras and staff in the various emergency plans (ship, passenger terminal and port) which would be activated for an actual incident as well as in the scenario in the exercise.
2) Monalisa 2.0 exercise evaluation team.
3) People invited to watch the exercise: Monalisa 2.0 people, media, others.

3.5 Checklist of the main objectives for the exercise

The checklists for the main exercise objectives are detailed in section 6.9 of this document.
4. Information for getting ready for the exercise

The members of the Port Authority of Valencia taking part in this sub-activity have held meetings with captains and officers of cruise ships that usually call at the port to obtain the information they need to get ready for the exercise and to find out their views should a real emergency take place on board their vessels.

The information covered at these meetings has been mainly about the following issues:

- The ship’s procedures in its “Muster list and emergency instructions” for guiding passengers to the exits from ship to shore.
- Suggestions for the port for this type of evacuation.

Tabletop exercise conducted on the COSTA CLASSICA cruise ship on 29-10-2014.
5. Tabletop exercise

Tabletop exercises are practical exercises held in a room where intervention and response team members meet in an informal and relaxed atmosphere to discuss the scope of their involvement and their role in an emergency as well as their actions and interventions in a particular emergency.

A facilitator or coordinator guides the participants through the discussion of one or more scenarios. The length of this type of simulation exercise depends on the number of participants, the complexity of the issue concerned and the exercise’s objectives. Many simulation exercises can be done in just a few hours, and this means they are very cost-effective tools for corroborating plans and coordination between the parties involved and their roles and the response capability required.

In this exercise for mass evacuation in a passenger ship berthed in the port, a tabletop exercise will be held beforehand, scheduled for 25th May 2015 at Port Authority of Valencia’s offices.

All tiers of government, organisations and companies whose staff are to take part in the planned emergency will be involved in the tabletop exercise.

The objectives to be met by each participant, the extent of their involvement in the large-scale exercise and their roles in it will be specified in the tabletop exercise.
6. Plan for the exercise to be carried out

This section identifies the procedures, participants with their roles and responsibilities, and administrative requirements planned to carry out the exercise.

6.1 Narrative of the accident planned for the exercise

At 11:00 on 15th June 2015, a fire breaks out on the ferry JUAN J. SISTER at sea while it is sailing towards Valencia.

The ship’s Captain tells the Valencia Search and Rescue Coordination Centre about the fire in the engine room and that the ship is out of control and drifting. He requests firefighting support.

At 11:30 the Captain reports that he has given passengers the order to abandon ship and that three passengers are unaccounted for, having been seen for the last time on board at around 08:00 hours.

At 11:45 the Captain reports that there are some walking victims on the ship’s deck and requests their evacuation by helicopter.

At 13:00 the Captain reports that the fire on board is under control. Some of the passengers (about 40) have abandoned the ship on liferafts but about 300 passengers are still on board. He requests towing for the ship and clearance for berthing at the Port of Valencia to evacuate these passengers.

Once some of the passengers have been evacuated to SASEMAR boats (approximately 40 people), the ship enters the Port of Valencia to dock and carry out a mass evacuation of the other passengers (approximately 300 people) through Acciona Trasmediterrânea’s Passenger Terminal in the Port of Valencia.

On Deck 7 five disoriented passengers have a panic attack and decide not to wait and dive into the water. Two of them do not come up to the surface again after they have dived in.

The passenger count after the evacuation shows there are 15 people unaccounted for who are presumed to be injured or dead on board.

These 15 passengers, the two crew members who remained in the engine room and the two passengers whose bodies have not surfaced after diving overboard have to be found.
6.2 Scope

The exercise in the port will start around 14:00/14:30 (local time) on 15th June 2015 and is expected to end around 16:00.

The exercise will start with a call from the ship's Captain to the Port Authority of Valencia’s Emergency Control Centre.

The completion of the exercise will be ordered by the Emergency Director in accordance with developments.

A meeting with all participants will be held within the fortnight following the exercise to study how it went, the number of objectives achieved, and aspects of participation and involvement that should be corrected in the future to eliminate any lack of coordination or mistakes so that the experience gained is much more effective in cases of real emergencies of this type.

The conclusions drawn from the previous meeting will be included in the exercise assessment and analysis document. (See FINAL CONCLUSIONS PILOT EXERCISE FOR A MASS EVACUATION OF A PASSENGER SHIP AT A PORT: CONDUCTED IN THE PORT OF VALENCIA ON 15-06-2015)

6.3 Exercise management structure

The exercise is to be conducted in line with the emergency plans for the ship Juan J. Sister, the Acciona-Trasmediterránea Passenger Terminal and the Port of Valencia.

6.4 Tiers of government, organisations and private companies taking part in the exercise

The following tiers of government, organisations and private companies are to take part in the exercise.

National government
(Spanish Ministry of Development. Maritime Administration, Directorate General for Merchant Shipping)
- Valencia Harbormaster
- Valencia Rescue Coordination Centre, Spanish Maritime Safety Agency (SASEMAR)

(Spanish Ministry of Development. Port Administration) State-Owned Ports Body
- Port Authority of Valencia

(Central Government Office in Valencia) Spanish Home Office
- Civil Defence
- Civil Guard
- National police
Regional government (Valencian Regional Government)

(Valencian Regional Home Office Ministry)
- Valencian Regional Government’s Emergency Coordination Centre (Service 112)

(Valencian Regional Health Ministry)
- Valencia Emergency Information and Coordination Centre (CICU)
- Emergency Medical Aid Service (SAMU) ambulances

Local government (Valencia City Council)
- Valencia fire brigade
- Local police

Private companies

(Cía. Trasmediterránea, S.A.)
- Passenger terminal
- Ship JUAN J. SISTER

UTE Remolcadores Boluda-Remsa
- Port of Valencia tug boats

6.5 Main events and their details

The following main events and their details will be included in the exercise control plan.

6.5.1 Activation of the plans

Ship
APB01: Activation of the ship’s Emergency Plan.
APB02: Emergency reported by the ship.

Passenger Terminal
APT01: Report of ship emergency received.
APT02: Activation of the Terminal’s Emergency Plan.
APT03: Terminal Emergency Plan teams deployed.

Port
APP01: Report of ship emergency received.
APP02: Activation of the Port’s Emergency Plan.
APP03: Port Emergency Plan teams deployed.
APP04: Emergency reported to activate the External Emergency Plan for the Port.

National, regional and city emergency services
APE01: Report of ship emergency received.
APE02: Activation of the External Emergency Plan for the Port.
APE03: External Emergency Plan for the Port teams deployed (national, regional and city).

6.5.2 Actions

**Passengers:**
- PAX01: Passengers guided and evacuated by the crew.
- PAX02: Passengers guided to the muster station in the Terminal.
- PAX03: Uninjured passengers gathered at the muster station and counted.
- PAX04: Psychological care for uninjured passengers at the muster station.
- PAX05: Other care provided to uninjured passengers (food, warm clothes, accommodation, etc.).
- PAX06: Rescue of injured or deceased passengers inside the ship.
- PAX07: Rescue of injured or deceased passengers in the water.
- PAX08: Medical care for injured or deceased passengers on the quay: triage, stabilisation, etc.
- PAX09: Injured passengers taken to hospital and background information for them.
- PAX10: Actions with deceased passengers.

**Fire on the ship:**
- FIRE1: Putting out the fire in the ship’s engine room.

**Closing access to the emergency area:**
- ENTRY: Closing access to the emergency area, control of access by responders, and people not involved in the emergency leaving the area.

**Media briefing.**
- MEDIA Information about the accident given to the media.

6.6 Exercise assumptions

The following assumptions are to be made in order to ensure that the exercise is as realistic as possible:

- Although the scenario for the exercise is that it takes place on a passenger cruise ship, it will actually be run on a Ropax vessel whose structure is quite different.
- The exercise events are intended to take place in a logical and realistic manner and all the exercise’s objectives should be achieved during the time it lasts.
- Exercise participants are well versed in their own emergency plans, the intervention and coordination procedures in them and actions to be taken in response to the emergency.
- The term “participants” includes planners, controllers, simulators, evaluators and all those involved in responding to the kind of emergency in the exercise.
• Participants will use real-world data and their usual sources of information for the emergency in the exercise.
• Participants will respond in accordance with existing plans and their policies and procedures. In the absence of appropriate written instructions, participants will be expected to use their own personal initiative when responding to the emergency.
• Response procedures and actions in the accident will be those established in the respective Emergency Plans, reproducing the actions which would be undertaken in real response conditions and thus providing a solid basis for evaluation of the exercise.
• If an actual emergency occurs when the exercise is on, participants required to respond to this actual emergency will stop what they are doing in the exercise to address it.

6.7 Exercise artificialities

It is recognized that the following artificialities and constraints will detract from realism; however, exercise planners should accept these artificialities as inevitable means of facilitating accomplishment of the exercise’s objectives, since on the day it is carried out there may be unforeseen circumstances arising from port operations on the site.

Artificialities foreseen for the exercise include the following:

• The exercise will be played in near-real time; however, to meet exercise objectives, some events may be accomplished by participants before the exercise, and other events may be accelerated in time to ensure their consideration during its development.

• The actions taken by some response teams may not have the strength or number of resources (personnel, equipment, vehicles, etc.) that they would have in an actual accident or event or due to a real emergency taking place somewhere else to which they have to respond.

• A response team may be pre-positioned at exercise areas rather than moved in real-time during the exercise, and they will enter play at predetermined times from their pre-positioned areas.

• Drama students will be used to simulate people injured in the accident.

• Volunteers from local Civil Defence groups will be used to simulate passengers evacuated from the ship.

• Smoke-generating machines and smoke canisters will be used on the outside decks of the ship to simulate the smoke from the fire on board and the LNG tanker.

All artificialities carried out during the exercise will be referred to in the exercise evaluation and analysis document.
### 6.8 Exercise simulations

The following simulations for the intervention of people and organisations not taking part in the exercise, but who would intervene in the event of an actual accident or event, will be required in the exercise.

- Simulation of sending information to the media about the accident and handling telephone calls from them.
- Simulation of taking people injured in the accident to hospitals and prior contact with the medical teams in them.
- Simulation of psychological care for evacuees and their relatives or those of the injured or dead victims.
- Simulation of taking evacuees to reception facilities.
- Simulation of telephone contact with relatives of evacuees and the deceased.
- Simulation of relatives of the evacuees and the deceased coming to the scene of the exercise.
- Simulation of calls to the duty court to remove the bodies of deceased victims.

All simulations carried out during the exercise will be referred to in the exercise evaluation and analysis document.
6.9 Exercise objectives

Every emergency exercise or drill needs objectives that provide the foundations and guidance for its planning, performance and the evaluation and analysis of its results.

The objectives are designed to reflect the validity of the emergency plans for the ship, facility (passenger terminal) and the port in the event of a mass evacuation of a passenger ship resulting in multiple casualties.

In particular, the following specific objectives are identified for this exercise:

- Demonstrate that the passenger ship’s emergency plan is applicable and effective in mass evacuation to the doors, sidescuttles or side shell doors and not to the life-saving appliances (lifeboats and liferafts, marine evacuation systems, etc.).

- Demonstrate that the passenger terminal’s emergency plan is applicable and effective for a mass evacuation of a passenger ship through its boarding bridges or other sidescuttles or side shell doors leading to land.

- Demonstrate that the port’s internal and external emergency plans are applicable and effective in managing a mass evacuation of a passenger ship resulting in multiple casualties.

- Demonstrate the ability to coordinate the various plans.

- Demonstrate the ability to conduct rapid situational assessment.

- Demonstrate the instruction and training of all personnel involved in the response teams from the various plans and their coordination.

- Demonstrate the ability to provide immediate medical assistance to meet the health needs of disaster victims.

- Demonstrate the ability to prioritise and use the resources and assets needed for maximum effectiveness during response operations.

- Demonstrate the collection and dissemination of information to the public during emergency operations.

- Evaluate and analyse the results to adopt appropriate corrective measures to provide a more effective response in the future to this type of accident.
6.10 Personnel taking part in the exercise. Rules and procedures

This pilot mass evacuation exercise or drill will be held following the rules and procedures established by Spanish legislation.

6.10.1 Emergency plans to be used during the exercise

During the exercise the following specific plans will be activated successively:

<table>
<thead>
<tr>
<th>EMERGENCY PLAN</th>
<th>EMERGENCY DIRECTOR IN THE PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Plan of the ship JUAN J. SISTER (Ship Plan)</td>
<td>Ship’s Captain</td>
</tr>
<tr>
<td>Self-Protection Plan (SPP) of the ACCIONA-TRASMEDITERRÁNEA Passenger Terminal in the Port of Valencia (Terminal SPP).</td>
<td>Company’s representative in the port</td>
</tr>
<tr>
<td>Self-Protection Plan of the Port of Valencia (Port SPP). Maritime accident (Red Phase)</td>
<td>Valencia Harbormaster</td>
</tr>
<tr>
<td>External Emergency Plan of the Port of Valencia and the companies TEPSA and GALP. (Port PEE) Category 2, Situation 2 Accident</td>
<td>(1) Regional Minister of the Home Office and Justice in the Valencian Regional Government, or Director General of Fire Prevention, Fire Fighting and Emergencies</td>
</tr>
</tbody>
</table>

(1) They will be the Emergency Director during the drill when the External Emergency Plan of the Port of Valencia is activated.

The Emergency Director of each plan will be responsible for alerting and mobilising the response teams from each plan which are required to carry out the exercise.

6.10.2 Emergency Control and Coordination Centres to be used during the exercise

The following Emergency Control and Coordination Centres in each Plan will coordinate the actions of the response teams and the reception, processing, assessment and forwarding of all information to the other centres:
### 6.10.3 Incident Command Post to be used during the exercise

The Incident Command Post (ICP) handles and coordinates the emergency in the place where it occurs. It will be physically sited in a suitable location: near to the emergency area so it can follow developments with precise knowledge of the situation, and safe so it is protected against foreseeable accidents that might injure its members.

The Incident Command Post will bring together the heads of the various response groups taking part in the exercise and implement mechanisms for coordination and communication between them.

The Incident Command Post Head (ICPH) is the person or unit providing command and coordination of the activities of the response groups at the site of the emergency. The Head communicates with the Emergency Director through the Control Centre.

The following will be assigned for the exercise:

<table>
<thead>
<tr>
<th>EMERGENCY PLAN</th>
<th>EMERGENCY CONTROL AND COORDINATION CENTRE</th>
</tr>
</thead>
</table>
| Emergency Plan of the ship JUAN J. SISTER (Ship Plan) | - SASEMAR Rescue Coordination Centre in the Port of Valencia (RCC-Valencia)  
- Emergency Control Centre of the Port Authority of Valencia (EEC-PAV) |
| Self-Protection Plan of the ACCIONA-TRASMEDITERRÁNEA Passenger Terminal in the Port of Valencia. (Terminal SPP). | Emergency Control Centre of the Port Authority of Valencia (EEC-PAV) |
| Self-Protection Plan of the Port of Valencia (Port SPP). Maritime accident (Red Phase) | Emergency Control Centre of the Port Authority of Valencia (EEC-PAV) |
| External Emergency Plan of the Port of Valencia and the companies TEPSA and GALP. (Port EEP) Category 2, Situation 2 Accident | Valencian Regional Government’s Emergency Coordination Centre (EEC-L’Eliana) |
**ICP location:**

The ICP is to be sited outside the Passenger Terminal in the area looking onto the Poniente and Transversal Quays since the ship to be used in the exercise can berth at either of these quays on the day.

**ICP Head:**

Under the Port EEP, the ICP Head will be the senior commander on the ground from the Valencia City Fire Brigade.

**6.10.4 Response team organisation chart**

The organisation chart for the response teams in the External Emergency Plan of the Port of Valencia is shown on the next page.

It will have to be reviewed in the tabletop exercise in case it needs to be amended for the scenario in the drill.
All possible safety measures will be put in place to prevent damage or injury to participants in the exercise.

The Emergency (Self-Protection) Plans and their safety measures for the port and the passenger terminal will be activated during the exercise.

Any security measure or issue involved in the exercise, its site and participating teams or people will be handled according to Spanish legislation.

6.12 Administrative and logistics support requirements

The complexity of the exercise means that technical, administrative and logistics support will be required for all its stages (organisation, performance and analysis of results).

The level of support required will depend on the length of the exercise, the number of organisations and individuals involved, and the number of objectives to be achieved during it.

This support will consist primarily of personnel, equipment, vehicles, supplies and facilities.

The following specific needs have been identified, although this is by no means a comprehensive list:

• Administrative support at all the stages of getting ready for and carrying out the exercise.
• Port traffic regulation during the exercise.
• Transport and, if need be, food for the extras.
• Staff to help with getting the site ready and making records of the performance of the exercise.
• Other.

6.13 Exercise site preparation

Preparation of the exercise site (Poniente Quay or Transversal Quay in the Port of Valencia and the Acciona-Trasmediterránea Passenger Terminal) will be jointly organised by the Port Authority of Valencia and Acciona-Trasmediterránea.

However, each participating organisation is responsible for preparing their teams and facilities required to take part in the exercise.

The Port Authority of Valencia will also be responsible for getting the extras (about 300) to be evacuated or rescued from the ship. The extras will be covered by an insurance policy for the exercise taken out by the Port Authority of Valencia.
7. Structure of the Monalisa 2.0 project team in the exercise

As noted above, the exercise will take place following the rules and procedures laid down in Spanish legislation. This involves the activation of the indicated emergency plans (ship, terminal and port) with the participation and leadership of the emergency by the authority responsible for civil defence (Regional Government).

Nonetheless, the participation of MONALISA 2.0 project members who have had or will have roles in design, coordination, evaluation, logistics, etc. for the exercise will be required.

This will enable continuation of the tasks in this sub-activity in the project, especially the issue of further documentation about the planning of this kind of accident in ports, supported by the experience gained in the exercise.

The following structure has been implemented for this purpose:

7.1 Exercise design team

This is responsible for coordinating all exercise planning and design activities. The team leader is responsible for developing the exercise objectives, concepts, scenarios, and events list, providing guidelines to the other teams, and logistics and administrative support needs.

7.2 Exercise control team

The control team leader is responsible for the development of the Control Plan. The plan should include but not be limited to the following:

- Exercise control and management.
- Guidelines for exercise controllers.
- Exercise control and reporting procedures.
- Procedures to track the accomplishment of exercise objectives.
- Procedures to record the responses of exercise participants.
- A list of required exercise forms, including instructions for use and preparation.
- Writing the conclusions for this activity once the exercise has been completed.
7.3 **Exercise evaluation team**

The evaluation team leader is responsible for the development of the Evaluation Plan. The plan should include all evaluation activities that should occur before, during and after the exercise. Evaluation activities should include but not be limited to the following:

- Exercise evaluation activity.
- Guidelines for project evaluators.
- Procedures for exercise evaluation.
- Procedures for tracking exercise objectives.
- Procedures to record the responses of participants in the exercise.
- Draw up the forms to be used when evaluating the exercise including instructions for use.
- A list of required exercise forms, including instructions for use and preparation.
- Writing the conclusions for this activity once the exercise has been completed.

7.4 **Exercise support team**

This is responsible for coordinating exercise participant support activities. Support activities should include but are not limited to the following:

- Coordination of control and evaluation teams.
- A schedule of briefings for controllers, evaluators and participants.
- Provide all documentation to its respective recipients.
- Ensure all administrative and logistics needs for the exercise are met.
- Writing the history of actions taken in this activity once the exercise has ended.

7.5 **Team organisation chart**

The organisation chart for the above teams and their members is as follows:
ANNEX 1

Images of exercise performed
Acronyms:

**OSC:** On Scene Coordinator Head of SAR operations at sea

**SAR:** Search & Rescue

**MRCC Valencia:** Valencia Rescue Coordination Centre, Spanish Maritime Safety Agency (SASEMAR)

**SAR SITREP:** Situation report.

**NRCC:** National Rescue Coordination Centre, Spanish Maritime Safety Agency in Madrid (SASEMAR)

**VLC HARMAS:** Valencia Harbormaster.

**RC:** Red Cross

**CSS:** Customs Surveillance Service

**ECC-RGV:** Valencian Regional Government’s Emergency Coordination Centre (L’Eliana)

**Port ECC:** Port Authority of Valencia’s Emergency Control Centre (Port of Valencia)

**IOPCCE:** Integrated Operational Coordination Centre in the External Emergency Plan of the Port of Valencia

**CICCE:** City Coordination Centre in the External Emergency Plan of the Port of Valencia

**Port of Valencia SPP:** Port of Valencia Self-Protection Plan
<table>
<thead>
<tr>
<th>TIME</th>
<th>EVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900</td>
<td>Actors and participants board the <em>Juan J. Sister</em> (300 people).</td>
</tr>
<tr>
<td>0930</td>
<td>40 volunteers board the Salvamar Pollux and Guardamar Caliope</td>
</tr>
<tr>
<td>1000</td>
<td><em>Juan J. Sister</em> sets off from Valencia and sails to the exercise position (3 miles northeast of the port).</td>
</tr>
<tr>
<td>1030</td>
<td>Liferaft deployment and embarkation; actors (40 people).</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1100</td>
<td>Ship on site, contact with MRCC Valencia via DSC and reports fire on board in the engine room. Ship stopped and not under command. Requests firefighting assistance.</td>
</tr>
<tr>
<td></td>
<td>MRCC Valencia deploys SAR Mesana.</td>
</tr>
<tr>
<td></td>
<td>MRCC Valencia deploys Clara Campoamor. Clara Campoamor named OSC.</td>
</tr>
<tr>
<td></td>
<td>MRCC Valencia deploys Guardamar Caliope.</td>
</tr>
<tr>
<td>1115</td>
<td>MRCC Valencia deploys Helimer 200 with 2 firefighters (embarkation in Port of Valencia)</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Start of firefighting operations by SAR MESANA and CLARA CAMPOAMOR</td>
</tr>
<tr>
<td>1130</td>
<td>Captain gives order to abandon ship.</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td></td>
<td>All crew and passengers to muster stations.</td>
</tr>
<tr>
<td></td>
<td>Captain decides to lower lifeboats and deploy liferafts.</td>
</tr>
</tbody>
</table>

<p>| 1130 | Operations Director activates the command and control system. |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 1130 | Port ECC asks TRASMEDITERRÁNEA:  
- To activate Passenger Terminal SPP.  
- For list of passengers and crew on board the ship *Juan J. Sister*. |
<p>| 1145 | Captain reports non-ambulatory victims on deck. Requests evacuation. |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800</td>
<td>MRCC Valencia deploys Helimer 200 and Rescue 21</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia deploys Sasemar 101</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia deploys Salvamar Pollux</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia requests deployment of Spanish Navy patrol boat.</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia requests deployment of Spanish customs patrol boat.</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia deploys Red Cross rescue boat.</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia requests deployment of Spanish Civil Guard patrol boat.</td>
</tr>
<tr>
<td>0800</td>
<td>MRCC Valencia reports to OSC, VLC HARMAS, ECC-RGV, CNCS and Port ECC.</td>
</tr>
<tr>
<td>0800</td>
<td>ECC-RGV and Port ECC agree to deploy port ambulance to pick up 1st non-ambulatory victim.</td>
</tr>
<tr>
<td>1100</td>
<td>First planning meeting. Operations plan.</td>
</tr>
<tr>
<td>1200</td>
<td>Helimer 200 in position. Evacuates 1st non-ambulatory victim. Lands in the earmarked area at the Port of Valencia</td>
</tr>
<tr>
<td>1230</td>
<td>Liferaft rescue operation.</td>
</tr>
<tr>
<td>1230</td>
<td>MRCC Valencia sends search action plan for three missing passengers.</td>
</tr>
<tr>
<td>1230</td>
<td>Sasemar 101 deploys self-locating datum marker buoy.</td>
</tr>
<tr>
<td>1230</td>
<td>MRCC Valencia deploys makeshift boat acquired using SafeTrx.</td>
</tr>
<tr>
<td>1230</td>
<td>TRASMEDITERRÁNEA provides law enforcement agencies deployed in the IOPCCE/CICCE with 5 printed copies of the passenger and crew list.</td>
</tr>
<tr>
<td>1230</td>
<td>TRASMEDITERRÁNEA also emails the list to the Port ECC.</td>
</tr>
<tr>
<td>1230</td>
<td>Port ECC forwards the list to MRCC Valencia and 112.</td>
</tr>
<tr>
<td>1230</td>
<td>SAR helicopter evacuates the 2nd non-ambulatory victim. Landed on the Clara Campoamor.</td>
</tr>
<tr>
<td>Time</td>
<td>Event Description</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>1230</td>
<td>Sasemar 101 begins search for three people overboard.</td>
</tr>
</tbody>
</table>
1230  The Port Police tell the Port ECC that there is a fire in an LNG tanker on Levante Quay (free area between bollards 51 and 52). The tanker was waiting to supply a ship and the leak and fire are the result of a major collision with another port heavy goods vehicle.
1230/1300 Sequenced arrival of rescue boats/vessels on the Passenger Terminal quay carrying evacuees rescued from the ship (CSS, RC with evacuees, Navy patrol boat, Civil Guard, Salvamar Pollux, Guardamar Caliope)
1230/1300 People disembarked counted. Count information sent to IOPCCE/CICCE. Medical and psychological care on the quay. Bus takes disembarked people to a safe place. Care for disembarked people in the safe place and they are identified (with psychological care). Transfer to hotels/accommodation indicated by the City Council or shipping company.

1300 Captain reports fire under control. Reports there are still some 300 passengers left on board awaiting evacuation; some are
injured with bruises, broken bones or bleeding wounds. Three are disabled in a wheelchair. Some are pregnant women and others are carrying very young children. Requests towing assistance and clearance for berthing in the Port of Valencia.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300</td>
<td>Emergency towing operation starts.</td>
</tr>
<tr>
<td></td>
<td>MRCC Valencia informs VLC HARMAS. It will send Situation Report (SAR SITREP).</td>
</tr>
<tr>
<td></td>
<td>Through ECC Valencia VLC HARMAS asks PAV for berthing for the ship and reports about the passengers still on the ship.</td>
</tr>
<tr>
<td></td>
<td>Asks for the Fire Brigade to attend in case the fire breaks out again and they are needed.</td>
</tr>
<tr>
<td>1245</td>
<td>Emergency towing operation starts.</td>
</tr>
<tr>
<td>1300</td>
<td>ECC Valencia informs VLC HARMAS about berth for the ship assigned at Transversales Quay.</td>
</tr>
<tr>
<td></td>
<td>Salvamar Pollux finds and picks up the three missing passengers who fell into the sea in the crossing and brings them to the Port of Valencia. Informs MRCC Valencia.</td>
</tr>
<tr>
<td>Time</td>
<td>Event Description</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1350</td>
<td>Just before berthing there is an explosion followed by a fire caused by a leak of diesel fuel in the auxiliary engine room, with total loss of electric power generated by the auxiliary engines. The ship’s captain reports the accident by contacting the port’s Emergency Control Centre, VHF channel 16, and the Passenger Terminal indicating that he will give passengers the order to abandon ship and monitoring subsequent actions taken on board. The ship’s alarm sounds and its crew start to gather up the passengers and guide them to the embarkation gate connected to the Passenger Terminal mobile boarding bridge.</td>
</tr>
</tbody>
</table>
The Emergency Director asks the Fire Brigade to attend in case they are needed.
The Emergency Director asks for help from a SASEMAR tug boat and another one from the port to spray water using firefighting monitors on the ship’s hull to cool down the area affected by the fire.
<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>Ship alongside at Valencia.</td>
</tr>
</tbody>
</table>
Start of evacuation of remaining passengers from the ship to the Transversal Quay via the mobile walkway and boarding bridges and passenger terminal building.
5 passengers who are separated from the group have a panic attack and dive into the water from the ship’s deck. Three come up to the surface but the other 2 do not. (They dive from boat near the ship. Dummies are used for the passengers who remain underwater.)

3 passengers floating in the water are rescued by a Red Cross boat that was near the ship. The vessel reports on the situation to Port ECC. VLC HARMAS asks GEAS Civil Guard and Valencia Fire Brigade divers to find and recover the bodies of the two people missing in the water.
Disembarked passengers are counted. Information about the count is sent to IOPCCE/CICCE.
Medical and psychological care on the quay and in the passenger terminal. Injured taken to hospital by ambulance. Uninjured disembarked passengers are taken by bus to a safe place. Care for disembarked people in the safe place and they are identified (with psychological care). Transfer to hotels/accommodation indicated by the City Council or shipping company.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>The bodies of the two passengers who dived into the water in the port are recovered. Emergency Director orders the duty court to be called for the removal of the bodies (fake call).</td>
</tr>
<tr>
<td>1530</td>
<td>Emergency Director of the EXTERNAL EMERGENCY PLAN (EEP) OF THE PORT OF VALENCIA announces emergency is over.</td>
</tr>
<tr>
<td></td>
<td>Port of Valencia EPP is deactivated</td>
</tr>
<tr>
<td>1600</td>
<td>Port SPP of Valencia is deactivated</td>
</tr>
<tr>
<td></td>
<td>Trasmediterránea Passenger Terminal SPP is deactivated</td>
</tr>
</tbody>
</table>
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