Safety and Security around the Egyptian Coasts
(Security and Safety in Short Sea Shipping Operations)

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Abstract

Increase of marine causalities due to lack of implementations for Safety and Security standards for Short Sea Shipping Operation along the Egyptian Coasts and erroneous fulfillment of the required procedures.

Egyptian Coasts either on the Red Sea or The Mediterranean Sea operate Short Sea Shipping Voyages, especially the Container Feeder and General Cargo at The Mediterranean Sea & Ferry Passengers Ships at The Red Sea. Those Short Sea Shipping Voyages are always accompanied with hazards and difficulties. One of the major hazards facing Short Sea Shipping Voyages is the tight schedules for those ships, which affect negatively at the safety and security drills. Thus, the preparedness & the ability to avoid consequences during accidents are reduced. And that could be clearly demonstrated by the two ferry ship accidents which took place at The Red Sea where the crew failed to use the safety equipments efficiently to rescue the passengers, the ship or even themselves.

This paper will discuss the hazards & difficulties affect the safe navigation on the Red sea & Mediterranean Sea. And, it illustrates the emerging of new concept of Safety Management System & its implementations that cope with the international safety and security measurements. Finally, it highlights the most important recommendations to reduce the accidents around the Egyptian coasts.

Key Words: Safety measures, Security, Egyptian Coasts, Drills, Maintenance, Ferry, Tide schedule

1- Introduction

Egypt is part of the Mediterranean Basin (995km of coastline), and it embraces two biogeography corridors, the Red Sea (1,941km) linking the tropical seas of the Indian

Ocean with the temperate Mediterranean, the Nile River linking equatorial Africa with the Mediterranean Basin. It is also part of the Sahara of North Africa. The Gulf of Aqaba is one of the two northern extensions of the Red Sea separating the Sinai Peninsula from Arabia. It is approximately 260km long, 14-26km wide, has an average depth of 800m and joins the main body of the Red Sea via the narrow (6km) Tiran straight.

The Mediterranean Sea is the major route for transportation of crude oil from the oil fields in the Middle East and North Africa, and oil ports in the Black Sea towards major consumption centers in Europe and North America. The most important oil traffic lane (90 % of total oil tanker traffic) connects the Suez Canal and the Sidi Kerir terminal of the SUMED pipeline in Egypt with Gibraltar, passing between Sicily and Malta and then following the coasts of Tunisia, Algeria and Morocco (REMPEC, 2002). Naturally, such heavy naval traffic brings with it many risks of accidents such as collision, and marine pollution.

In addition, the huge movements of container carriers took place through the Mediterranean from Arabian and Far East countries to Europe and vise versa. These trips create the need for using the container mother ships and Feeders, thus a very high traffic for those feeders around the Egyptian coasts are found especially after the development occur for the Egyptian new ports (AIN SOKHNA – PORT SAID-EAST). Also, the traffic at RED SEA due to the SUEZ CANAL traffic and the Passenger ships crossing red sea to transfer Egyptians working in Saudi Arabia, and they also included pilgrims returning from the Hajj in Mecca.

Both feeders in Mediterranean and RO-RO passengers in RED SEA are considered Short Sea Shipping Operations which had been affected with hazardous and dangerous and need great care for safety and security of navigation and people.

2- Short-sea shipping operations

Transport between two terminals located in the same country or between two irrespective of the country neighboring countries in which the mode providing the service is registered. Also, Cabotage is often subject to restrictions and regulations. Under such circumstances, each nation reserves for its national carriers the right to move domestic freight or passengers' traffic.

Many cabotage laws were implemented, such as the Passenger Services Act of 1886, which placed cabotage restrictions on ocean borne passenger travel in the United States. In the same line, the Merchant Marine (Jones) Act of 1920 implemented cabotage regulations for freight. The emergence of short sea shipping has challenged this setting in recent years. Defining short sea shipping is complex as it can involve different vessels (container feeder vessels, ferries, fast ships, etc..), tramp or liner operations, a variety of cargo handling techniques (horizontal, vertical or a mixture of both) and different types of ports of loading or discharge. In an intermodal freight context, two major types of short sea shipping can be distinguished:

- **Feeder services** from transshipment hubs to feeder ports and vice versa. These services can be arranged on a direct hub port to feeder port base or can follow a line bundling set-up with several feeder ports of call per vessel rotation. They tend to use regular containerships, but of smaller size (often aptly called feeder ships).
- **Passenger vessels** can be further divided into two categories: passenger ferries, where people are carried across relatively short bodies of water in a shuttle-type service, and cruise ships, where passengers are taken on vacation trips of various durations, usually over several days. The former tend to be smaller and faster vessels, the latter are usually very large capacity ships having a full range of amenities.

3- Parameters Influencing Short Sea Shipping Operations

Maritime safety is a crucial issue on the international agenda and specifically in the Mediterranean & Red Sea due to the increasing traffic, recent accidents, and new developments within offshore and facing the challenges in a trans-national perspective. So it is expected to work around the clock and have; an updated risk assessment in the Mediterranean & Red Sea to improve procedures & preparedness, improving the crew adherence to procedures, risk assessment of forecasted offshore obstacles, improved decision support for marine rescue coordination centers and finally increased knowledge about safety measures in the Mediterranean & Red Sea.

Egyptian Coasts either at the Red Sea or The Mediterranean Sea operate Short Sea Shipping Voyages, especially the Container Feeder and General Cargo at The Mediterranean Sea and Ferry Passengers Ships at The Red Sea.

First, Egyptian coast along the Mediterranean Sea nowadays has a high traffic either due to the movement in and out from SUEZ CANAL or due to feeders ships moving from the main ports in PORT SAID, DEMITTA and also MALTA ports to the consignees ports on the north coast of AFRICA and south coast of EUROPE. Moreover, as a result of new GAS exploitations in the east of the Mediterranean, the need of supply boats at this region dramatically increased, which develop a huge movements around the Egyptian coast.

All those types of ships has a very tide schedule which make it difficult for captains of those ships to comply with the safety regulations regarding the safety and security drills, also changing crew should be occurred in very short time (usually not more than 2 months) as it is tough work onboard these ships, thus some ships will have new crew without even a familiarization to safety and security equipments onboard.

As a result, a marine accident occurred 1998 along the west of Egyptian coast near SIDI KERIR where a supply boat was sank losing 12 lives and only 2 survive (jump from the upper deck). It is reported that accident occurred due to bad distribution of pipes on deck, in addition the chief Officer Who is responsible for loading cargo with new appointment not only onboard the boat, but even new in the company and also this type of supply boat, and of course there was no time for him to familiar with this type of ship.

Furthermore, for the security issue at 2005 a terrorist was hidden in a container from south ASIA and that container was unloaded in PORT SAID as a transit and to be loaded again to ITALY in its way to USA as a final destination. For some reasons no one discover the terrorist in PORT SAID while the authority in ITALY discover him, that means the security measures could not be as a proper due to the huge movements of containers through these transit ports, that may cause a security crisis for the Egyptian ports and even the country itself. Thus, implementation of safety and security regulations should be related to the capacity of ports, which means it is not logic to increase the amount of cargo transported or in transit without looking to the capacity and efficiency of the equipments and man force involved in the operations to fulfill the safety and security measurements.

Second, Egyptian coast along the RED SEA, Those Short Sea Shipping Voyages are always accompanied with hazards and difficulties. One of the major hazards facing Short Sea Shipping Voyages is the nature of the seabed especially The Red Sea. This is due to

the coral reefs especially at coast, which affect M/V SALEM EXPRESS when it touched the seabed at the entrance of SAFAGA port and few minutes later it sank and about 400 lives lost at that crisis.

That's besides the difficulties they are facing continuously due to the tight schedules for those ships, which affect negatively at the safety and security drills. Usually the trips between the Egyptian coasts and Saudi Arabian coasts for passenger ships not exceed 40 hours, while for RO-RO passenger only4 to 6 hours including departure and arrival maneuverings, thus there is no time for the crew to implement the STCW requirements for the frequency of safety and security drills. In addition, the nature of the passengers at red sea either labors mostly uneducated or old people visiting the holly places in MECCA whom need great care during embark and disembark from the ship, and also they will not be able to abundant the ship in case of emergency which put more burden on the crew.

Thus, the preparedness and the ability to avoid consequences during accidents are reduced. And that could be clearly demonstrated by the two ferry ship accidents which took place at The Red Sea where the crew failed to use the safety equipments efficiently to rescue the passengers, the ship or even themselves.

4- The emerge need of Safety and Security along the Egyptian Coasts.

An expansion in the level of international trade over the last few decades has highlighted the importance of the maritime sector to the global economy. Estimates suggest that more than 90 percent of global trade is transported by sea. Maritime activity extends beyond the international transport of goods to national revenue generating activities that include fishing and aquaculture, recreation and tourism, as well as extraction of non-renewable marine-based resources, and can be a critical source of income and food for populations at the community level.

The maritime realm defined for these purposes as encompassing oceans, seas, lakes, rivers, coastlines and harbors is vulnerable to a wide array of threats, including illegal, unreported, and unregulated fishing; environmental degradation; smuggling; trafficking in persons; narcotics trafficking; piracy; proliferation of weapons of mass destruction; and aggressive actions, including terrorism. These maritime threats all have significant land-based dimensions, whether related to the origin of the threat, the locus of its effects, or the land-based capabilities required for preventive or enforcement interventions. As a result,

land-based actors and capabilities are as important to maritime security as the specialized maritime capabilities usually associated with maritime activities and institutions.

Maritime safety and maritime security are two important parameters for Arab and Egypt's future. They should not be regarded solely as statically protective, as they require a dynamic engagement with evolving challenges and therefore require adaptive responses based on the best available knowledge and technologies. Arabian citizens and economic interests may expect their authorities to take up these challenges in their interest.

An effective maritime safety and security policy requires better assessment of which ports, vessels and maritime routes are currently most vulnerable, whether the risks are increasing, what the potential damage of different traffic patterns might be and how ports and ship owners are complying with safety and security legislation.

Expected results from the implementation of all safety and security legislation lead to better understanding to the cause of accidents, established guidelines for emergency response and pollution prevention and control as well as provided technical solutions for advanced safer vessels.

5- A Case Study on M/V. Al Salam Boccaccio 98

The M/V al-Salam Boccaccio 98 was an Egyptian Ro/Ro passenger ferry, operated by El Salam Maritime Transport, that sank on 3 February 2006 in the Red Sea en route from Duba, Saudi Arabia, to Safaga in southern Egypt. Its last known position was 100 km (62 miles) from Duba, when it lost contact with the shore at about 22:00 EET (20:00 UTC).

The ship was carrying 1,312 passengers and 96 crew members. The majorities are thought to have been Egyptians working in Saudi Arabia, but they also included pilgrims returning from the Hajj in Mecca. The ship was also carrying about 220 vehicles. No SOS had been heard from the ship and poor weather conditions hampered the search and rescue operation. 388 people were rescued.

The sinking

First reports of statements by survivors indicated that smoke from the engine room was followed by a fire which continued for some time. There were also reports of the ship listing soon after leaving port and that after continuing for some hours the list became severe and the ship capsized within 10 minutes as the crew fought the fire. The fire had

started in a storage area, was controlled, but then started again. The significance of the fire was supported by statements attributed to crew members who were reported to claim that the firefighters essentially sank the ship when sea water they used to battle the fire collected in the hull because drainage pumps were not working.

Weather conditions

The Red Sea is known for its strong winds and tricky local currents. The region had been experiencing high winds and dust storms for several days at the time of the sinking. These winds may have contributed to the disaster and may have complicated rescue efforts.

The closest maritime weather report for 3 February 2006 00:00 UTC was from M/V Glasgow Maersk, call sign MZGK7. Reporting from 27.00°N 34.40°E, approximately 150 km north-north-west of the sinking, the container ship shows winds of 24.1 kt from 320 degrees, with a surface pressure of 1005 hPa. Sea temperature was 25°C and a significant wave height of only 45 cm. Visibility was good (10 km), with 7/8 cloud cover. There was also an active weather front overlying the area.

Possible causes

There have been several theories expressed about possible causes of the sinking.

1- Fire: Some survivors have reported that there was a large fire on board before the ship sank, and there have been eyewitness accounts of thick black smoke coming from the engine rooms.
2- Design flaws: The al-Salam Boccaccio 98 was a roll on-roll off (RO-RO) ferry. This is a design that allows vehicles to drive on one end and drive off the other. This means that neither the ship nor any of the vehicles need to turn around at any point. It also means that the cargo hold is one long chamber going through the ship. To enable this to work, the vehicle bay doors must be very near the waterline, so if these are sealed improperly, water may leak through. Even a small amount of water moving about inside can gain momentum and capsize a ship, in a way known as the Free Surface Effect.
3- Modifications: In the 1980s the ship was reported to have had several modifications, including the addition of two passenger decks, and the widening of cargo decks. This

would have made the ship less stable than it was designed to be, particularly as its draught was only 5.9m. Combined with high winds, the tall ship could have been toppled easily.

4- Vehicle movement: Another theory is that the rolling ship could have caused one or more of the 220 vehicles in its hold to break loose and theoretically be able to puncture a hole in the side of the ship.

Search and rescue

At 23:58 UTC on 2 February 2006 the air-sea rescue control room at RAF Kinloss in Scotland detected an automatic distress signal relayed by satellite from the ship's position. The alert was passed on via France to the Egyptian authorities. On 3 February 2006 some lifeboats and bodies were seen in the water. At least 314 survivors and around 185 dead bodies were recovered.

Rescue boats and helicopters searched the area, including four Egyptian frigates. Italian Coastal Patrol Unit Ships patrolled for more than 90 hours in severe weather conditions and eight passengers were rescued by MFO vessels "Vedetta" and "Sentinella". Britain diverted the warship HMS Bulwark which would have arrived in a day-and-a-half, but reports conflict as to whether or not the ship was recalled.

The sinking of al-Salam Boccaccio 98 was compared to that of the 1987 MS Herald of Free Enterprise disaster, which killed 193 passengers, and also to other incidents.

- In 1991 another Egyptian ferry, the Salem Express, sank off the coast of Egypt after hitting a small habili reef. 464 Egyptians lost their lives. The bodies were recovered and buried on land, as Islam forbids burial at sea.
- On 17 October 2005, the Pride of al Salam 95 also sank in the Red Sea, after being struck by the Cypriot-registered cargo ship Jebal Ali. In that accident, two people were killed and another 40 injured some perhaps during a stampede to leave the sinking ship. After evacuating all the ferry passengers and crew, the Jebal Ali went astern and the Pride of al Salam 95 sank in about 3½ minutes.

From the previous disasters occurred at the RED`SEA coasts, which clearly present the lack of performance of the crew in all cases especially for the first case where more than 1000 lives lost while the crew were not be able, first to rescue the ship from sinking as they could not take the appropriate action to fight the fire or pumping out the water.

Second, to evacuate the passengers and avoid all this lost, as it is clear from the official report that the captain of the ship did not give an order for abandon ship and use of all safety equipments onboard, also the case presents lack of maintenance and inspection to those equipments, thus non of those equipments were released and operated but they sank with the ship.

Thus, one of the major defects of the short sea shipping operation around the Egyptian coasts is the lack of training and familiarization for the crew with the safety and security measures, which had been reflected in the previous disasters and if the authorities do not take actions to avoid this defects, more disasters may be occurred.

6- Conclusion

Maritime transportation, similar to land and air modes, operates on its own space, which is at the same time geographical by its physical attributes, strategic by its control and commercial by its usage. The main advantage of maritime transportation is obviously its economies of scale, making it the cheapest per unit of all transport modes, which fits well for heavy industrial activities. On the other hand, maritime transportation has one of the highest entry costs of the transport sector.

Red Sea and Mediterranean Sea especially around the Egyptian coasts involved in high traffic affected the safety and security of navigation, ports and ships. Even though, marine disasters are occurred around the Egyptian coasts due to the lack of training and maintenance and also inspection for ships especially the RO-RO passengers due to the tide schedule for those ships.

Thus, this paper is recommending the following:

- Enforce security zones, port state control boarding, protection of military out loads and major marine events, augment shore side security at waterfront facilities, detect WMD weapons/agents, and participate in port level antiterrorism exercises.
- Provide enhanced port safety and security and law enforcement capabilities to the economic or military significant port where they are based.
- Deploy in support of National Special Security Events requiring Coast Guard presence.

- Prototype/employ specialized capabilities to enhance mission performance (Radiation detectors, dive program, vertical insertion, running gear entangling systems).
- Co-operation among the Arabian countries around the Red Sea and Mediterranean Sea in search and rescue operations in case of marine disasters to reduce the loose of life.

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