Guidelines for Transiting the Turkish Straits

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Issued by the

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The Oil Companies International Marine Forum (OCIMF)
Founded in 1970, the Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil, oil products, petrochemicals and gas, and includes companies engaged in offshore marine operations supporting oil and gas exploration, development and production.

Our vision is a global marine industry that causes no harm to people or the environment.

Our mission is to lead the global marine industry in the promotion of safe and environmentally responsible transportation of crude oil, oil products, petrochemicals and gas, and to drive the same values in the management of related offshore marine operations. We do this by developing best practices in the design, construction and safe operation of tankers, barges and offshore vessels and their interfaces with terminals and considering human factors in everything we do.

Terms of Use

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Active escort A tug made fast to the stern of a vessel.

Best practice OCIMF views this as a method of working or procedure to aspire to as part of continuous improvement.

By day Between sunrise and sunset.

By night Between sunset and sunrise.

Casualty A casualty includes the death of or injury to a person, loss or material damage to a ship, the stranding of a ship, pollution or the potential for pollution.

Controlled zone An area at the entrance to the Turkish Straits where vessels must register their arrival. As per current rules, it is an area of 20 nautical miles or 2 hours, whichever comes first. There is also an obligation to report as per arrival notification to the Turkish Straits VTS area (TSVTS).

Dangerous cargo According to the IMO's IMDG code, class 3 cargoes and all cargoes described in classes 1, 2, 5.1, 5.2, 6.2 and 7 or those not gas freed.

Deep Draught Vessel A vessel with a deepest draught of 15 metres or more.

Guidance Provision of advice or information by OCIMF.

Hazard Any event or object that could cause harm.

Hazardous conditions Conditions that may directly cause an accident that causes harm to people or the environment.

Large vessel/large tanker A vessel with length overall of 200 metres or more.

Maritime casualty An event or sequence of events that occurred directly in connection with the operation of a ship, and resulted in:

- The death of, or serious injury to, a person.
- The loss of a person from a ship.
- The loss, presumed loss or abandonment of a ship.
- Material damage to a ship.
- The ship being unfit to proceed or requiring Flag State approval or a condition of class before it can proceed.
- At sea, a breakdown of the ship that requires towage.
- The stranding or disabling of a ship, or the involvement of a ship in a collision.
- Material damage to marine infrastructure external of a ship that could seriously endanger the safety of the ship, another ship or any individual.
- Pollution caused by damage to a ship.

Maritime incident An event, or sequence of events that occurred directly in connection with the operation of a ship, that do not meet the criteria to be classified as a marine casualty but that endangered or, if not corrected would endanger, the safety of the ship, its occupants or any other person or the environment. Examples of marine incidents include:

- Close-quarters situations where urgent action was required to avoid collision.
- Any event that had the potential to result in a serious injury.
- A fire that did not result in material damage.
- An unintended temporary grounding on soft mud, where there was no risk of stranding or material damage.
- A person overboard who was recovered without serious injury.
- Snagging of fishing gear resulting in a dangerous heel.

New Instructions New Instructions for the Application of the 1998 Rules.

Pilot An individual employed by a ship, with detailed knowledge of a port approach or dangerous navigational area, and who uses that knowledge to assist with the conduct of that vessel and ensure its safe passage through the area.

Pilotage Navigational passage of a vessel under the conduct of a marine pilot.

Precautionary area An area where vessels should be navigated with caution, but are not managed by the Vessel Traffic Service.

Recommendations OCIMF supports and endorses a particular method of working and procedure.

Vessel Restricted in their Ability to Manoeuvre in the Traffic Separation Scheme A vessel which from the nature of her work is restricted in her ability to manoeuvre as required by COLREGs and is therefore unable to keep out of the way of another vessel. Additionally, this term applies to vessels with LOA of more than 150 metres or draft of more than 10 metres.

Turkish Straits The Istanbul Strait (Bosphorus), the Çanakkale Strait (Dardanelles) and the Sea of Marmara, and the coastline surrounding these areas.

Vessel in transit Under Turkish regulations, a vessel that is not bound for a Turkish port and that does not have a stopover of more than 168 hours, excluding involuntary waiting time.

Vessel operator The owner of a ship or any other organisation or person, such as the manager or the bareboat charterer, who has assumed responsibility for operating the ship from the ship owner, including the duties and responsibilities imposed by the ISM Code.

Abbreviations

AIS	Automatic Identification System
BTC	Baku-Tbilisi-Ceyhan
COLREGs	International Regulations for Preventing Collisions at Sea
CPR	Common Pool Resource
DGCS	Directorate General of Coastal Safety
ECDIS	Electronic Chart Display and Information System
ERV	Emergency Response Vessel
ICS	International Chamber of Shipping
IMO	International Maritime Organization
LNG	Liquefied Natural Gas
LOA	Length Overall
LOF	Lloyd's Open Form
NUC	Not Under Command
OSRL	Oil Spill Response Limited
RAM	Restricted in Ability to Manoeuvre
SAR	Search and Rescue
SLA	Service Level Agreement
STS	Ship-to-Ship
TSS	Traffic Separation Scheme
TSVTS	Turkish Straits Vessel Traffic Service (also abbreviated as TBGTH in Turkish)
TUBRAP	Turkish Straits Reporting System
TURKS 2015	Turkish Salvage Agreement
VLCC	Very Large Crude Carrier
VTS	Vessel Traffic Service

Bibliography

Bridge Procedures Guide (ICS)

Turkish regulations

Maritime Traffic Regulations for the Turkish Straits and the Marmara Region (1994)

Maritime Traffic Regulations for the Turkish Straits and the Marmara Region (1998)

New Instructions for the Application of the 1998 Rules (2002)

New Instructions for the Application of the 1998 Rules (2012)

Turkish Salvage Agreement (TURKS 2015) (2015)

New Instructions for the Application of the 1998 Rules (2018)

UK Hydrographic Office

Chart 5506: Mariners' Routeing Guide, Turkish Straits, Strait of Istanbul and Southern Approaches

Chart 5507: Mariners' Routeing Guide, Turkish Straits, Strait of Çanakkale

Useful websites

Directorate General of Coastal Safety (Kıyı Emniyeti Genel Müdürlüğü)
Provides Turkish Straits maritime traffic information, transit times and information on emergency response services. www.kiyiemniyeti.gov.tr

International Petroleum Industry Environmental Conservation Association (IPIECA)
Tiered preparedness and response.
https://www.ipieca.org/resources/good-practice/tiered-preparedness-and-response/

Republic of Turkey – Ministry of Foreign Affairs
Note on Turkish Straits and includes vessel transit statistical information.
http://www.mfa.gov.tr/the-turkish-straits.en.mfa

Turkish Naval Forces Office of Navigation, Hydrography and Oceanography (ONHO)
www.shodb.gov.tr

1 Introduction

1.1 Purpose and scope

This information paper provides guidance for vessel operators considering a transit of their tankers through the Turkish Straits. OCIMF neither endorses nor discourages transiting the Turkish Straits, but this information paper provides additional guidance for companies when developing their own risk assessments.

OCIMF member companies and some ship managers develop their own guidelines for transiting Turkish Straits based on detailed risk assessments. These guidelines comply with Turkish Straits regulations and may contain additional measures to mitigate specific risks identified based on risk assessments.

The effect of the interaction of company guidelines with the regulations can be unhelpful to all parties (for example, if vessels forego their allotted transit slots and interrupt scheduling, because transit conditions do not meet specific company criteria). To avoid this, OCIMF recommends that members work to the common guidelines described in this information paper, which are consistent and fully integrated with the Turkish regulations. It is important to note that Turkish Straits regulations are revised from time to time and the latest versions are to be adhered to before planning for any transit.

1.2 The Turkish Straits

Figure 1: *Map of the Turkish Straits*

The Turkish Straits are some of the busiest waterways in the world. They are the only waterway connection between the Black Sea and the Mediterranean Sea and more than 3% of the global oil supply passes through them. On average, 50,000 vessels per year transit through the Istanbul Strait (also referred to as the Bosphorus) and the Çanakkale Strait (also referred to as the Dardanelles), or approximately 130 vessels per day, with around 20% being oil tankers or gas carriers. The average size of vessels and cargo carried has steadily increased and, therefore, so has the overall level of risk.

1.2.1 The Istanbul Strait (the Bosphorus)

Figure 2: *Map of the Istanbul Strait*

The Istanbul Strait is approximately 17 nautical miles long and about 700 metres wide at the narrowest point. It contains several major turns that can obscure oncoming traffic and requires course alterations of up to 80 degrees.

Companies are advised to monitor weather forecasts in advance and include details of wind direction and expected current flow in the passage plan, particularly when it comes to un-piloted ships.

Currents in the Strait can be strong and variable in direction. The general surface current flows from the Black Sea to the Mediterranean at an average speed of two to four knots but can reach seven knots in strong northerly winds. Strong southerly winds can weaken or even reverse the surface current (called the 'Orkoz'). A northbound sub-surface current, caused by the Black Sea's lower density compared to the Aegean Sea, flows between two and nine metres below the surface at speeds of up to three knots. There is significant turbulence and eddies where the currents mix. This can result in unpredictable navigational conditions, which can cause the waterway to close.

The Strait bisects the city of Istanbul (which has a population of over 17 million). The conurbation extends along the Strait and results in considerable background light at night, in which the navigation lights of vessels can be obscured, and navigational lights, buoys and beacons are not easily spotted. Ferries and other local traffic conduct around 2,500 crossings a day. These craft are required to give way to transiting vessels. Fishing takes place within the Straits both by day and night (although fishing is not permitted in the designated traffic lanes).

1.2.2 The Çanakkale Strait (the Dardanelles)

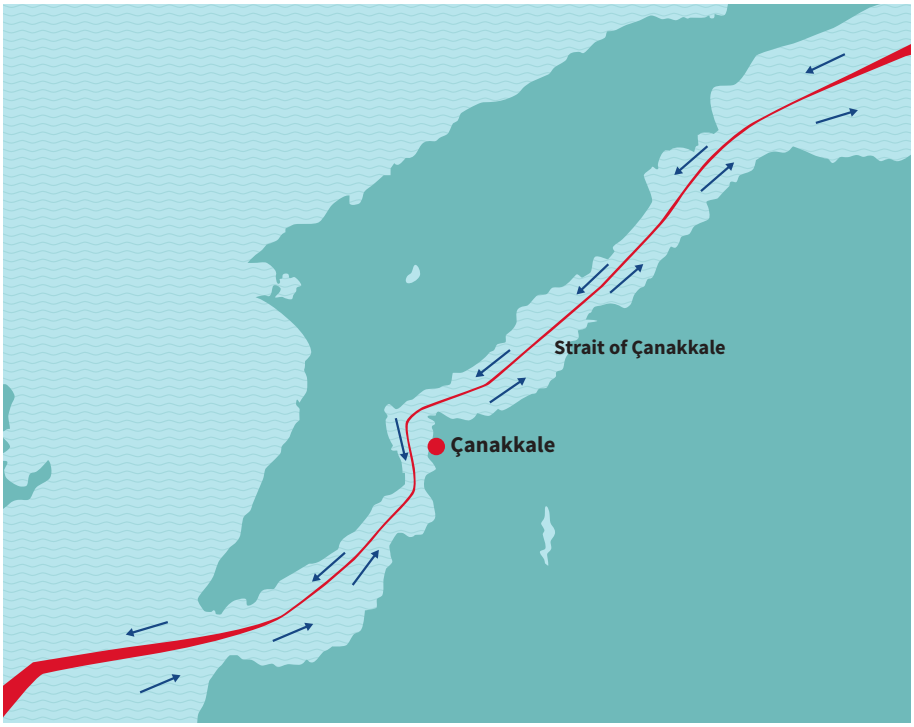

Figure 3: *Map of the Çanakkale Strait*

The Çanakkale Strait is approximately 37 nautical miles long. The passage is generally straightforward except for two significant turns near the city of Çanakkale, where the Strait reaches its narrowest point (about 1,300 metres). Navigation is therefore less hazardous than in the Istanbul Strait, although there are strong currents (up to 5 knots), eddies and countercurrents throughout.

A limited number of passenger and car ferries run daily between Çanakkale on the eastern side and Eceabat and Kilitbahir on the western side. The rest of the Strait passes through a sparsely populated region, with very little shore background light at night.

A new bridge is under construction close to the northern end of Çanakkale Strait and navigators should be aware of the construction activity ongoing as well as future impact on navigation including air draft and safe water considerations.

1.2.3 Open sea approaches

The open sea approaches to the entrance of each strait have no serious geographical hazards. However, current Vessel Traffic Service (VTS) rules require vessels to enter a controlled zone to register their arrival before entering the Straits. Vessels may then either anchor or return to sea while waiting for their allotted transit time. The anchorages and offshore waiting areas are exposed to the prevailing weather and are subject to significant congestion in the event of closure of the Straits, for example, due to poor visibility. The largest congregation of waiting vessels tends to be at the Aegean entrance to the Çanakkale Strait.

Masters have reported that while waiting for passage northbound through the Çanakkale Strait during the winter, there is a predominant northeasterly wind. Bozcaada Island offers good shelter for anchoring in ballast condition, if prolonged waiting period is envisaged.

The Black Sea entrance to the Istanbul Strait has only limited anchorage areas, all of which are unprotected from the prevailing weather. Large tankers approaching this entrance are usually fully loaded and wait well offshore for their allocated transit time.

Masters have reported that ships are adrift north of the Traffic Separation Scheme (TSS) entrance. Care is required to avoid close quarters with other vessels during periods of low visibility. There might be fog in the approaches, but not in the Istanbul Strait itself. In an emergency, anchoring is possible on the European side of the Strait entrance, although the area is overcrowded with very little sea room.

Transits are suspended for vessels carrying dangerous/hazardous cargo when visibility is less than 1 mile and for all vessels when visibility is less than 0.5 miles. When normal transits resume, the number of vessels preparing to enter the Straits increases the risk of collision.

1.2.4 The Sea of Marmara

The Sea of Marmara lies between the Istanbul Strait and the Çanakkale Strait. The transit distance is about 110 nautical miles and does not have any significant navigational hazards. In the Sea of Marmara, the approaches to the two Straits tend to be more congested than the open sea approaches. The approach to the Çanakkale Strait has limited anchorage space, which is close to the traffic lanes. This can result in hazardous conditions if, for example, a vessel drags its anchor in heavy weather.

Experienced Masters report that, when possible, it is recommended to avoid anchoring north of the southwest-bound lane, and instead to cross the TSS and drift at a safe location south of the TSS. This area offers good protection from the weather conditions and has a lower traffic density. However, on completion of drifting, enough time must be allowed to recross the TSS lane and join the southwest-bound lane.

The approach to the Istanbul Strait is next to the Port of Istanbul and is usually very crowded, with merging traffic lanes and a precautionary area in the immediate approaches. (A precautionary area is an area where Masters are warned to proceed with caution, but it is not managed by the VTS.)

There is a high number of ships including many small vessels and large tankers either anchored or adrift waiting to join the northbound transit.

1.2.5 Services available in the Straits

While ship-to-ship (STS) transfer equipment is not available in the Straits for major operations, it is available in the Black Sea. STS service providers maintain equipment at Sevastopol and additional equipment is available in Piraeus.

Repair facilities are available at Tuzla Shipyard, where the dry dock can accommodate vessels up to Very Large Crude Carrier (VLCC) size. Repair facilities are also available at Yalova Shipyard.

Slop reception facilities are available at Çanakkale and also at Istanbul anchorage.

2 Regulations and traffic systems

2.1 Current Turkish regulations

The Montreux Convention of 1936 set out the general principle of freedom of navigation through the Turkish Straits for all merchant vessels by day and night. However, vessels transiting the Turkish Straits must follow certain regulations and traffic systems. To be considered a vessel in transit, the vessel must not be bound for a Turkish port or have a stopover of more than 168 hours (7 days), excluding any involuntary waiting time.

The transit status of vessels passing the Turkish Straits without any commercial stop will not change if their stay exceeds 168 hours (7 days) due to weather conditions or due to traffic passage planning made by the Turkish Straits VTS (also called TBGTH in Turkish) centres. Pilotage and towage are optional in the Turkish Straits. See latest regulations that make recommendations on this topic.

Turkey introduced two key safety measures in 1994 after several serious marine casualties. The first was a TSS, which was adopted by the International Maritime Organization (IMO) in 1995. The second was the Maritime Traffic Regulations for the Turkish Straits and the Marmara Region. These regulations are designed to control traffic in the Straits to ensure safe navigation and protect life, property and the environment. They are intended to apply to all vessels in the region. These regulations were updated in 1998 and, along with the New Instructions for the Application of the 1998 Rules (New Instructions) issued in 2002, make up the current legislation.

The New Instructions suspend all traffic in poor visibility conditions. One-way traffic is implemented for vessels 150 metres or longer transiting in both the Istanbul and Çanakkale, with the exception of passenger ships, livestock carriers and warships. In practice, however, this is only enforced for vessels that are 200 metres or longer.

The regulations define vessels carrying dangerous cargo as those carrying petroleum and its derivatives, as well as vessels that are not loaded and not gas-free but that have previously carried dangerous cargo. Any such vessel that is more than 200 metres long is also considered a restricted vessel and can only transit in daylight.

This information paper captures recommendations at the time of publishing. Reference must be made to the latest version of Turkish Straits Vessel Traffic Service (TSVTS) for updated regulations and associated changes.

2.2 Turkish Straits Vessel Traffic Service

The TSVTS provides information, navigational assistance and traffic organisation services. Its objectives are marine traffic safety and environmental protection. The TSVTS carries out strategic planning, monitoring and managing traffic, provides information and assistance and coordinates rescue and salvage services.

The TSVTS currently divides the Turkish Straits into seven sectors: four for the Istanbul Strait and three for the Çanakkale Strait. The Sea of Marmara lies between the Istanbul and Çanakkale Straits. Each sector is monitored and controlled by a VTS operator.

Breakdown of Straits is as follows:

- Istanbul Strait: Türkeli, Kandilli, Kadıköy, Marmara.
- Çanakkale Strait: Kumkale, Nara, Gelibolu.

2.3 Traffic Separation Scheme

The scheme provides two clearly defined lanes for vessels using the Straits to help prevent vessels from meeting head-on. The TSS is monitored by the TSVTS, which informs transiting vessels of the traffic situation in their vicinity. When leaving Çanakkale (Gelibolu) to enter the Sea of Marmara, there is a very narrow separation and the VTS sometimes allows vessels to enter the opposite lane. Note that the pilot disembarks well in advance of the charted pilot station and the Çanakkale ferry crossing routes. Ask the pilot to clarify the traffic situation before leaving the bridge.

The TSS has been adopted by the IMO and is subject to rule 10 of the International Regulations for Preventing Collisions at Sea (COLREGs). Although OCIMF are not aware of significant rogue traffic, vessels should always be aware of the fact that other vessels might not be complying with the rules and regulations for transit.

Traffic grouping for vessels transiting in the same direction is strictly enforced each day, as long as there are enough vessels waiting at the entrance. Traffic switches direction to make the best use of daylight hours. There are now intervals of at least 75 minutes between restricted vessels, and non-dangerous/hazardous cargo vessels are allowed to transit between these slots. The time interval depends on the speed of the transiting vessels. Many of the vessels that are less than 200 metres in length are river going with shallow draft and are underpowered. Unfortunately, many Masters declare higher transit speeds than their vessel can realistically achieve under the influence of strong currents during northbound transit. The minimum required distance between vessels is 8 cables. This is subject to change and at the discretion of the VTS, depending on congestion.

When one-way traffic is imposed by the VTS in the Istanbul Strait, the TSS is suspended. When this occurs, all vessels are no longer bound by the TSS as laid down on the chart and may navigate in any part of the Strait, in accordance with COLREGs rule 9. This is usually the case when a loaded Suezmax tanker transits the Istanbul Strait southbound.

2.4 IMO recommendations 1995

The percentage of vessels that do not use a pilot is still only around 50%, regardless of whether they are tankers or large vessels. Any collision in the Straits affects other ships' passage and result in closure of the Straits for a considerable length of time. Turkish coastal traders, including shallow draft river-going ships, do not tend to use a pilot consistently. Communication between pilots and the VTS is carried out in Turkish, so companies may wish to hire a translator.

3 Causes of transit delays

The New Instructions, even without their strict application to vessels of 150 metres or longer, have led to substantial delays to tankers and to their commercial operations. Commercial implications are not addressed in this information paper, as they are beyond OCIMF's remit. However, awareness of these rules and their effects is important in order to understand their potential impact on safety and environmental protection.

The New Instructions have limited the total number of restricted vessel transits during winter to a maximum of seven per day. Poor weather, particularly fog, can also restrict the number of transits and cause even more delays. During the summer, the number of restricted vessels is usually capped at about nine or ten per day to allow other vessels to transit, including smaller dangerous/hazardous cargo vessels.

The delays lead to overcrowding in the anchorages and surrounding areas at the ends of each Strait, increasing the risk of collision. While vessels are drifting off Bozcaada Island or east of the Istanbul Strait TSS while waiting for their transit time, they tend to display Not Under Command (NUC) lights at night, while keeping their mast lights, side lights and stern lights on. Very few ships display Restricted in Ability to Manoeuvre (RAM) lights. This seems to be the usual accepted practice being adopted in the region. Vessels should verify with the VTS which lights need to be displayed. Vessels must display navigation lights as per COLREGS.

Risk assessment studies of incidents in the region, carried out by the Turkish authorities, have identified that many casualties originated from equipment or human failures on vessels carrying non-dangerous cargo, registered with Flag States associated with lower safety standards. Consequently, efforts to improve the quality of vessels that transit the Turkish Straits would reduce overall casualty risk in the Straits. This suggests that a robust regional inspection regime to enforce international conventions and regulations would be of benefit.

The current system requires restricted vessels and vessels carrying hazardous cargo to clear specific points in the Straits before similar vessels can enter from the opposite direction. Because the Çanakkale Strait is twice the length of the Istanbul Strait, the changeover from one direction to the other takes much longer. If there is a change of direction during the day, fewer restricted vessels can pass the Çanakkale Strait. Approximately 13% more restricted vessels calling at ports in the Sea of Marmara enter at the Çanakkale Strait than at the Istanbul Strait, which increases traffic congestion. Consistent traffic scheduling and transit direction is made even more difficult by the priority given to restricted vessels bound for Turkish ports. While Liquefied Natural Gas (LNG) vessels bound for Marmara ports have priority over other vessels according to Turkish Straits rules, other types of vessels do not have such priority. The Çanakkale Strait therefore has more traffic and presents more risks to vessels than the Istanbul Strait, even though the Istanbul Strait has more navigational hazards. Traffic in the Çanakkale Strait has been eased by restricting vessel transits to a single direction on alternate days.

4 Risks of transiting the Turkish Straits

OCIMF members have assessed the risks of transiting Turkish Straits. From the assessments, the following conclusions have been drawn:

- The current combination of the TSS, traffic rules and the VTS means that a casualty in the Straits involving tankers over 200 metres long is now much less likely.
- While vessels 200 metres or longer can cause the largest oil spills, casualty data shows that the number of incidents that they cause and their overall pollution risk are both significantly lower than for smaller vessels. This is likely because of the current rules requiring one-way traffic.
- Analysis of incident data shows that spills are caused more often by tankers that are less than 200 metres long. Tankers of this length are less rigorously restricted and are often treated like non-dangerous/hazardous cargo vessels. Their casualty rate is about the same as that of non-dangerous/hazardous cargo vessels. Although they only account for about 10% of the transiting population, they make up 80% of the oil spill risk.
- There may be vessels transiting the area that may not be double-hull ships. Some of them may have a double-bottom cargo area but bunker tanks may not be in a protected location. This remains an area of concern.
- Tankers transiting in ballast, mainly northbound, have a much lower risk of pollution. This is partly because northbound tankers have very little cargo on board, as well as their added manoeuvrability and ease of anchoring when navigating against the prevailing currents.
- Currently, tug escort is strongly recommended for ships >200m Length Overall (LOA) for Istanbul Strait and for ships >250m LOA for Çanakkale Strait. This is especially applicable to tankers. If tug assistance is required during a transit, it takes a long time to make the connection and for the tug to influence the vessel's speed and direction. This limits the tug's ability to avert or mitigate an incident and therefore timely action is needed to ensure escort tug is asked to make fast in good time.

5 Recommendations for transiting the Turkish Straits

5.1 High-level risk management

Despite both planned and existing bypass pipelines, petroleum and other dangerous/hazardous cargo from Black Sea ports are expected to continue to pass through the Turkish Straits on their way to world markets. If new oil and gas projects are developed then transits of tankers may well increase.

Experience shows that the Turkish Straits can be transited safely. However, because of their topography and marine traffic density, the Straits have unique navigational challenges. The risks can be minimized by selecting the appropriate vessel and good navigational planning.

Recommendations:

- Senior Navigating Officers should have suitable experience and knowledge of transiting Turkish Straits.
- Vessel tonnage and carriage capacity should be optimized to reduce the total number of transits and lower overall risk.
- Conventional Suezmax class tankers 275-300 metres LOA is the maximum size that can safely navigate the Istanbul Strait with acceptable margins under normal circumstances. Tankers greater than 300 metres in length pose additional risks when transiting the Istanbul Strait. These may, however, transit through the Straits subject to strict application of additional restrictions by the administration and risk assessment by the company.
- Qualified pilot should be utilized for north and southbound transits of the Istanbul and Çanakkale Straits.
- Embarkation and disembarkation of pilots should be undertaken at IMO-designated pilot transfer locations.
- Vessels should be suitably trimmed to optimize manoeuvrability during transit. While laden, this generally means using a slight stern trim, when squat at transit speed is considered.
- Navigational best practices should be followed with particular focus on bridge manning and proper position fixing.
- Cargo and ballast operations such as ballast transfer, tank cleaning or gas freeing should not be undertaken during transit and all cargo tank lids should be secured.
- Anchoring in Istanbul anchorage should be avoided unless it is specifically needed or if calling into port.

Vessel operators with ships transitting regularly should consider approaching the Turkish Straits pilotage service provider, Turkish Maritime Incorporated, to use pilots with good understanding of vessel types and local conditions. This would include assigning a small group of pilots to the company vessels so that they become more familiar with their vessel manoeuvring characteristics and bridge procedures. This system could also be used to promote English as the usual working language for communications between the VTS and the bridge.

More detailed simulations would be needed to understand whether escort tugs should be made fast to the vessel during transit.

5.2 Passage planning

The below are all parts of the *Turkish Straits Vessel Traffic Service User Guide* and Bridge Team Management best practices and should be followed.

A transit plan should follow the best practices described in the International Chamber of Shipping (ICS) publication *Bridge Procedures Guide* and *The Turkish Straits Vessels Traffic Service User Guide*, and should carefully consider the following:

- Consulting the following admiralty routeing charts:
  - 5506: Mariners' Routeing Guide, Turkish Straits, Strait of Istanbul and Southern Approaches.
  - 5507: Mariners' Routeing Guide, Turkish Straits, Strait of Çanakkale.
- The requirements of the Turkish Straits Reporting System (TUBRAP).
- The latest information available from the VTS.
- Timings of staged arrival for critical areas, including the Istanbul and Çanakkale Straits.
- Whether one-way or two-way traffic applies.
- Whether the vessel will transit by day or night, and choosing the right day or night conspicuous leading lines, head marks, transits, beam bearings or other equipment.
- Restricted visibility is possible in the passage, so suitable parallel indexes, clearing bearings and ranges and contingency anchorages should be chosen.
- Using an Electronic Chart Display and Information System (ECDIS) with radar overlay and selecting no-go areas/safety contour and the display of Automatic Identification System (AIS) information. If ECDIS is not carried, radar mapping the no-go areas is recommended.
- The vessel's manoeuvrability.
- Vessels navigating sharp turns with the current astern will tend to overshoot the bends and can drift out beyond the channel centreline. With the current astern, the bow and stern of long vessels may be in significantly different current regimes when they negotiate a sharp bend. This may lead to the stern being swept out towards the centre of the channel and consequently, the bow swinging in towards the shore, on the inside of the bend.
- Vessels navigating against a strong current will set rapidly to one side or the other if the vessel's head develops a significant angle to the stream. The effect is very noticeable in both Straits, particularly if the corners are cut (also called 'straight-lining' the bends). For this reason, particular care should be taken to ensure a suitable track and adequate clearance from the grounding line when approaching the points forming the inside of sharp bends.
- Local traffic (ferry routes and fishing areas). Low-powered vessels, including passenger ferries, often gather around weaker currents next to headlands. Keeping good clearance from these points helps avoid conflict with this traffic.
- Under Keel Clearance. The Straits are generally deep but ledges and isolated dangers at lesser depths within the lanes could affect deeper draught vessels.
- Engine readiness, electrical power configuration and steering configuration.
- The minimum bridge management team should consist of a Master, officer of the watch, helmsman and lookout, as well as the pilot, during any transit of either Strait.
- A senior engineer should be in the engine control room during the entire passage and the propulsion equipment should be operated so that it can respond immediately to engine orders. A qualified member of the engineering staff with understanding of emergency steering procedures should also be stationed in the steering flat when access from the engine room is difficult.
- Work rest hours should be planned and managed to avoid fatigue during transit.
- Weather, tide and current information with regular updates should be referred to.
- Service, stores and crew relief requirements should be planned to take into consideration work rest hour management, handover periods and experience of onboard personnel.

- Because the many sharp turns in the Straits can obscure navigational aids, parallel indexing should always be used to monitor the vessel's progress against the passage plan, even if ECDIS is fitted. The use of Radar Interface Overlay is recommended.
- The passage plan must be prepared well before the pilot joins and discussed in detail with the pilot after boarding. Pilot boarding can sometimes be delayed, so the passage plan must allow extra time for this. A full Master/Pilot exchange should take place before the passage is started.
- Unless absolutely necessary, the engine/steering/power configuration should not be changed during a transit of the Istanbul or Çanakkale Strait. Any routine maintenance should be undertaken 24 hours before transit to avoid potential risks of machinery failure.

5.3 Recommendations for pilotage service

Turkish Straits pilots have made a major contribution to safety. However, information from OCIMF members indicates that the Turkish Straits pilotage service could consider further measures such as:

- Creating a formal pilotage scheme, including training and certification.
- Improving Bridge Team Management practices, to ensure the Pilot and Bridge Team work together as one cohesive team. The Master plays a key role in setting that tone during the Master/Pilot exchange:
  - Pilots boarding and disembarking far enough seaward off the entrances to the Straits to allow a proper Master/Pilot exchange to take place before the vessel is committed to entry and facilitate a smooth Master/Pilot handover for safe pilot disembarkation. Historically, the charted position of the pilot station has been moved further into the channel. In addition to this, the pilots board/disembark even further into the channel. Weather conditions play a significant role on boarding/disembarking positions and the Bridge Team needs to assess on a case by case basis to determine the safest position to conduct these operations. As example, it may be sometimes more dangerous if pilot disembarks late and vessel needs to alter course significantly to make a lee.
- These factors should be taken into account:
  - Çanakkale inbound: Pilots tend to board the vessel further inward of the charted pilot boarding position.
  - Çanakkale outbound: Pilots tend to disembark few miles before the pilot station and could lead to misunderstanding with crossing ferries.
  - Istanbul inbound: Pilot boarding position could be shifted further seaward to allow for safe pilot transfer and information exchange.
  - Istanbul outbound: Pilots tend to disembark few miles before the pilot station.
- While the VTS operators and pilots are fluent in English, communication between them takes place in Turkish. This decreases the effectiveness of bridge teams, since the bridge team and any non-Turkish unpiloted vessels in the vicinity will not be able to understand the verbal communications.
- Measures to reduce congestion at or near approaches to the Straits should be considered including optimizing one-way traffic protocols.

6 Emergency services

6.1 Emergency response capabilities

There are several strategically positioned Emergency Response Vessels (ERVs), tugs and Search and Rescue (SAR) boats in the Straits. These boats can carry out salvage, SAR, firefighting and towage and can respond to marine pollution.

Tier Response Capability definitions:

- Tier 1 events use locally held resources and are less severe spills allowing the containment and addressing by a company's internal spill management team. These accidents tend to be operational in the cause and happen at or near the operator's facility. This team provides the initial response and include trained on-site staff and local contractors.
- Tier 2 spills are accidents which may require national or regional response teams with specialized knowledge to intervene. These events extend outside the operational area of the oil or gas facility. A higher number of people are involved in a Tier 2 response. This team has access to additional training and equipment such as aircraft, communication, and the ability to institute mutual aid agreements between groups and government bodies.
- Tier 3 accidents are global in need for necessary, available, large-scale resource response. Tier 3 spills usually require resources from stockpiles of national or international cooperatives. In most cases, these co-ops will be subject to governmental control. The third tier will respond with industry-controlled, cooperatively-held equipment, stockpiles, and personnel. Examples of the type of common pool resources (CPR) and equipment available with a Tier 3 response include the high-volume aerial dispersant, at-sea and large-scale containment equipment, and specialized shoreline and inland clean-up capabilities. This team can respond to remote drilling sites which may not have access to extended local capabilities. Personnel on this level are equipped to train and direct large numbers of workers through wide-spread logistics.

The Directorate General of Coastal Safety (DGCS) has Tier 1 response capabilities, along with accredited spill response companies through Coastal Safety https://www.itopf.org/knowledge-resources/countries-territories-regions/countries/turkey/.

These resources have been used at various relatively small oil spills in the Straits. However, the strong currents generally limit how effectively they can contain on-water oil.

The marine terminals in Izmit Bay also have Tier 1 equipment.

There is a substantial quantity of oil spill response equipment in Turkey dedicated to the Baku-Tbilisi-Ceyhan (BTC) pipeline (four bases). However, these are located in the east of the country, and release and mobilization to incidents in the Straits has not been tested.

Currently, there are limited Tier 1 capabilities in country. Even though the responsibility for managing the resources sits with DGCS, they do not have trained personnel to deploy equipment. Few of the local oil companies (TUPRAS) have Tier 1 resources on site to handle small spills.

In the year 2017, the Turkish government (Ministry of Transport) suspended licences for all Tier 2 providers in country following the failed response to few spills in proximity of Istanbul and Izmit. The most up to date information is that 3 companies were able to get the licence back valid for 4 years. They are: MOST, Mare, and Marti. Meke who was previously a leader in the market, has not been able to fulfil the requirements and is not yet fully licenced for Tier 2 events.

The Oil Spill Training Centre has recently opened in Tekirdag (Istanbul), which is meant to serve as a Tier 2 base, training centre and emergency centre. Although this facility has been set up, they did not have any response capabilities as in 2019. This should be rechecked from time to time and in preparation ahead of transits.

6.2 Oil spill response

The Emergency Response Law (Pollution of the Marine Environment in Oil and Other Harmful Substances in Cases of Emergency Response and Compensation of Losses under the Law on the Principles relating to Goods and Services Procurement Regulations) was adopted in 2015 to respond to marine pollution from oil and other substances. The Ministry of Environment is the general authority on this subject and is responsible for the spill response along with other various projects that are related. One of these various projects underway include the development of a national contingency plan, including risk assessment, sensitivity mapping and the establishment of regional centres for pollution response. It is unlikely that any major spill could be contained using the current local resources.

The Oil Spill Response Limited (OSRL) base in Southampton, UK would be the primary source for international resources in case of any major (Tier 3) incidents for some OCIMF's members, possibly supported from their Bahrain base with additional resources from Briggs in Baku, SEACOR at BTC and SESMEKE in Ceyhan.

OSRL is a global Tier 3 oil spill response provider with bases strategically positioned around the globe. OSRL's capability includes surface and subsea response equipment resources to enable a response strategy to be mounted for any oil spill scenario using any of the recognised oil spill response techniques. In addition to the equipment resources OSRL's highly trained response personnel remain ready to travel globally at short notice to perform a wide range of activities to support the incident response. Members of OSRL can access these services at any time in accordance with the Service Level Agreement (SLA) which sets out what member can expect, as summarised below. Please note that OSRL can respond to non-member or third party incidents, but the response is not guaranteed and is subject to greater costs as laid out in their scale of fees.

6.3 Salvage

The DGCS has exclusive rights to provide salvage services in the Turkish Straits. Salvors cannot operate without permission of the Turkish DGCS. The DGCS has a limited number of salvage tugs that operate out of different locations in the Straits.

Salvage services are provided on the basis of the Turkish Salvage Agreement (TURKS 2015). It is worth noting that there are differences between the TURKS salvage form and the Lloyd's Standard Form of Salvage, the latest version of which is LOF2020 and is available at https://www.lloyds.com/~/media/files/the-market/tools-and-resources/agency/salvage-arbitration-branch/lof-2020.pdf?la=en. Latest version of the Turkish Salvage Agreement is made available on the Turkish Straits Government website at https://www.kiyiemniyeti.gov.tr/userfiles/editor/pdf/turks2015_en.pdf.

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