

Smoothing the interface

With tankers comprehensively regulated, the maritime industry has been looking elsewhere for further safety improvements. Weaknesses in port and waterway management regimes are now being targeted

When in or near the shore interface zone, tankers are at greatest risk. Of the 20 largest tanker oil spills over the last 30 years, all but five occurred within sight of land. Of the 2.4 million tonnes of oil lost in these accidents, 1.7 million tonnes escaped in nearshore waters and wreaked havoc on coastal environments.

When in coastal and port waters, tankers are subject to the vagaries of local waterway management practices, including channel marking arrangements, dredging programmes, pilotage policies and the availability of accurate charts.

A tanker master approaching or leaving port faces a number of pressures and risks not encountered while underway at sea. Not only must rocky shorelines, restricted channels, congested waterways and variations in the weather and currents be taken into account, but also commercial pressures to catch a tide and minimise the time spent in port.

Ship v shore cultures

Port visits constitute the most intense period of activity in a tanker master's work schedule. He must interface with pilots, tug captains, harbour masters, terminal managers, vessel traffic service authorities, the ship's agent, head office superintendents, ship inspectors and cargo surveyors. Good ship/shore communications are essential to a smooth port visit.

It is also at the jetty where the sometimes conflicting cultures of ship and terminal operators come head to head. Communications difficulties can be exacerbated by differences in technical standards between ship and shore equipment. In general tankers have greater cargo-handling capabilities than shore terminals in terms of pump rates and simultaneous transfers of multiple grades. In terms of numbers of oil spills the vast majority involve small volumes of less than 7 tonnes, and it is no surprise that most of these occur during ship/shore transfer operations.

To these acknowledged port risks can now be added another - security. In the aftermath of the September 11 attacks the risk analysts were quick to identify port zones as the point where terrorists targeting ships carrying hazardous and noxious substances could do most to create havoc and further their cause.

The big picture

These are the realities of tanker operations. Unfortunately, when an incident involving a tanker does occur, the ship tends to bear the brunt of the resultant public ire, media attention and legislative zeal for new rules. In recent years the tanker industry has improved its ability to respond in a united way to such onslaughts and deflect the more ill-founded proposals for new tanker design, construction and operational standards.

The tanker industry has also achieved some measure of success in using the pressure for improvements to get rulemaking bodies and governments to take a look at the bigger picture and consider the role of other, shore-based parties in the so-called chain of responsibility in promoting maritime safety.

Disparate shore functions

That said, problems are encountered in tightening the disparate regulatory regimes administered by the land-based agencies responsible for the ship/shore interface, not least due to the large number of agencies and sets of controls involved. Whereas the

shipping industry is relatively homogeneous and virtually all tankers sailing on international routes are built and operated to standards laid down in IMO conventions, the administration of ports and coastal waters is much less harmonised. Often, the powers of harbour masters vary between the ports of a single country, while there are as many different national port and coastal traffic policies worldwide as there are member states of the International Maritime Organisation (IMO). Unlike seafarers, pilots are not subject to a unified, international training and certification process.

While ports must retain the autonomy to lay down the navigation and vessel operating conditions which best meet their own unique needs, there is much that ports, coastal agencies and central governments can do to harmonise their requirements nationally and globally and reduce the risk associated with tanker visits to ports still further.

In recent years there has been increasing pressure to extend the jurisdiction of IMO into port-related functions, particularly in relation to harmonised training schemes for port work of various types. However, for a variety of legal reasons progress in this direction has been slow. Not surprisingly, those land-based authorities with existing maritime jurisdictions have been reluctant to alter the status quo and relinquish control to another agency.

Building on good record

In overall terms, tanker shipping's safety record, with an average of one major accident every 20,000 voyages over the past 30 years, is a good one, and one that has shown particularly good improvement over the past decade. The amount of oil pollution from tankers, both accidental and operational, has been reduced by approximately 80 per cent over the last 20 years.

However, given the media's penchant for intense coverage of oil spills, especially those close to or impacting the shore, for the tanker industry, a single tanker spill is one too many. With tankers already heavily regulated, in order to make further progress towards the goal of 'zero accidents', greater attention will have to be paid to advance planning by all the parties responsible for the safe operation of shipping in coastal waters. Such planning encompasses everything from port risk assessments and optimal configurations for vessel traffic services to passage preplanning, pilot training regimes, oil spill contingency arrangements and hydrographic survey programmes.

US marine transport system

In many countries the opportunity to consider an optimum approach to waterway management is coinciding with a reappraisal of their overall port system. Most notably, the United States, which handles more tanker traffic than any other country in the world, is launching a bold initiative to prepare its ports, waterways and intermodal connections for an expected doubling, and possibly tripling, of seaborne traffic by 2020.

Many US ports and waterways have ageing infrastructure and are no longer up to world-class standards. Many facilities lack appropriate vessel traffic systems and charts are outdated. Numerous oil terminals have antiquated jetties and berthing arrangements which are suited to tankers of a bygone age.

In order to ensure the safe and efficient movement of rapidly increasing volumes of freight and numbers of people through the country's port infrastructure, in 1998 13 US federal agencies agreed to work together more closely to implement the Department of Transportation's Marine Transportation System (MTS) initiative.

US Coast Guard role

One of the primary agencies in the initiative is the US Coast Guard. In recognition of the need to take urgent action, the US Coast Guard Authorization Act of 1998

established the MTS Task Force. As regards tanker safety, when the MTS Task Force developed its strategies, recommendations and an action plan, account was taken of tanker owners' concerns about the state of the US waterway management system, as highlighted in the Port and Terminal Safety (PTS) Study prepared by the International Association of Independent Tanker Owners (INTERTANKO) in 1996. The US Coast Guard has since established partnership agreements with a number of the original Task Force participants, including INTERTANKO, in order to identify and remove conditions hazardous to navigation in US waters. Over recent years the liaison with the tanker community has targeted three specific projects, i.e. hazardous condition reporting during vessel transits of ports and waterways; harmonisation of harbour safety committees; and providing vessel operators ready access to timely, relevant and accurate meteorological and hydrographic information.

Safety and security

Technology and training are key elements of the MTS programme to promote the safety of expanding US port traffic. More specifically, emphasis is being placed on the use of accurate, reliable and real-time information management systems tailored to user needs; improved management and coordination to promote safe vessel movements and facility siting; improved management of operations and communications in congested areas; and the prevention of accidents occurring due to human factors.

The tremendous focus on port security in the aftermath of the September 11 attacks has served to accelerate progress towards the MTS goals. Also, by taking its concerns and recommendations on ship and port security to IMO, the US is ensuring that solutions will have an international dimension, not least through adoption of the proposed International Code for Security of Ships and Port Facilities as Chapter XI of the Safety of Life at Sea (SOLAS) Convention. Responsible tanker owners have applauded the emphasis that is now being given to the need for increased transparency of information on ship crews, ownership, historical records and the cargo onboard.

As part of its input to the current round of discussions on security measures, the shipping community has pointed out that identification requirements for port personnel should be made as strict as those that are due to be implemented for seafarers.

Ship/shore communications

Good ship/shore communications are key to improved shipping safety in coastal and port zones, to the US MTS programme and to ship security. Transponders fitted onboard ships will do much to bring about this improvement. It has already been agreed through amendments to SOLAS Chapter V that new ships of 300 gross tons (gt) and above must be fitted with automatic identification systems (AIS), or transponders, from July 1, 2002. Also, existing tankers will have to install an AIS not later than the first survey for safety equipment on or after July 1, 2003. SOLAS requires transponders to have ship-ship and ship-shore communication and interaction capabilities, thus enabling a ship's identity and other details to be given to the shore and other vessels automatically.

At the meeting of the IMO Intersessional Working Group on Maritime Security (ISWG) this past February, it was agreed that the implementation schedule for the mandatory fitting of AIS for all ships of 500 gt and above on international voyages should be accelerated. The final date will be decided at an IMO diplomatic conference on ship security in December 2002.

Pilotage in the Community

The official report by Lord Donaldson into the Sea Empress grounding in the approaches to Milford Haven in 1997 found that the pilot onboard the tanker at the

time was not adequately trained in the handling of ships the size of the Sea Empress, and that there were no agreed national standards governing such training. The weakness that was highlighted in the UK pilotage regime is mirrored in many other national schemes worldwide.

The current draft Port Directive prepared by the European Commission aims to provide a more integrated and coordinated approach to various aspects of port policy throughout the Community. Inherent in the initiative is the deregulation of port activities, including pilotage, so that ports are recognised as commercial operations. In its input into discussions on the proposed Directive, the shipping community has cautioned that, while agreeing in principle with the thrust of the initiative, safety is paramount and must not be compromised.

Shipowners have pointed out that the issue of pilotage is critical, and that there is a need for a fresh look at the adequacy of pilotage training, the organisation of pilotage services in ports and the pilot/ship master relationship in the context of passage preplanning.

If port deregulation is to take place as a result of this Directive, then certain pilotage safeguards need to be in place, say shipowners. The European rulemaking process is pushing to establish a common position to enable adoption of the Port Directive in December 2002.

Pilotage at IMO

Shipowners have also been active on the pilotage issue at an international level, pushing at IMO for agreed standards on pilot training and certification, along the lines of those required for ships' crews.

Also, as part of the International Chamber of Shipping's (ICS) Ship/Shore Interface Contact Group, INTERTANKO is chairing a correspondence group which is drafting a Code of Best Practice during Pilotage (other than deepsea pilotage). Among other things, the Code is being prepared to resolve the issue of master/pilot exchanges (MPX) on passage preplanning prior to the pilot joining the ship. Although MPX was discussed at the 47th Session of the IMO Navigational Safety Subcommittee in July 2001, there was insufficient time to finalise provisions.

ICS already includes a single-sheet MPX form as an annex in its updated Bridge Procedures Guide. Explanatory notes on the use of the form and on other recommended practices regarding pilotage are incorporated into the main body of the Guide.

Hydrographic concerns

Back in the US, although good progress has been made under the MTS initiative in addressing many of the inherent weaknesses identified by shipowners in the country's port and terminal infrastructure, there are still areas of concern.

For example, investment in hydrography represents one of the most important and cost-effective means of improving vessel safety in US port approaches and coastal waters. However, although Congress has agreed to increase budgetary allocations for hydrographic surveys in order to eliminate a charting backlog, it will take many years for this backlog to be eliminated.

Shipowners have also been in dispute with the US administration proposals to derive most of the funding for harbour dredging and related maintenance from vessel user fees. As local citizens and the country's economy are the primary beneficiaries of waterway improvements, they should share the dredging cost burden through an appropriate tax programme, say shipowners.

All ships benefit

The key advantage of all these port and waterway improvements at national, regional and international level, and of agreeing on harmonised solutions, is that they benefit all types of ships, not just tankers.

Although cargo spills and fires involving oil, gas and chemical tankers in confined waters present the greatest risks, the threat is not limited to such ships. As a reflection of the major strides that have been made in improving tanker safety, the International Tanker Owners' Pollution Federation (ITOPF) reports that 50 per cent of the major oil spill incidents it has attended in recent years have involved the loss of bunker fuel from ships other than tankers.

In recent years the notion that maritime safety is a shared responsibility between ships and shoreside agencies has taken hold. Support is growing for a more fair and equitable sharing of responsibility, and liability, for maritime safety among all the key players. This stems from an awareness on the part of these participants that improvements to existing waterway management systems offer the best realistic chance of effecting a further leap forward in maritime safety.