

SIRE Inspections on Oil Tankers

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ABSTRACT: Ship Inspection Report Programme (SIRE) addresses concerns about sub-standard shipping in oil industry. As a part of the risk assessment physical inspection of the oil tanker is performed by accredited SIRE inspector and resulting report is available to charterers, ship operators, terminal operators and government bodies. In this article SIRE inspection is described and compared with other non-mandatory and mandatory inspections on oil tankers. Some potential consequences of tanker over-inspections are discussed.

1 INTRODUCTION

The carriage of liquid cargos like oil, petrochemicals and pressurised products at sea is a process that has an intrinsic high level of risk. Maritime accidents can result with casualties and severe damage to the environment, cause significant financial losses and have long-term economic impact. Therefore it is important that all stakeholders involved in the operation, including oil and chemical companies, other charterers, ship owners and operators, Port States Authorities, Flag State Authorities, insurance companies identify and manage risk related to marine transport. [2]

Over the past few decades some important changes that influenced risk management from the perspective of oil and chemical companies have occurred. [5] Because the tanker ownership moved from oil and chemical companies to independent owners in the 1980s and long-term time charters became increasingly rare, the spot charter market has intensified. At the same time, ownership structure has altered, in some cases resulting with small and inexperienced fleet or willingness to cut costs by

lowering safety standards. Concurrently, in response to a spate of tanker accidents with serious consequences, public awareness and concerns about marine pollution has raised, very often placing responsibility on cargo owners. Therefore, to limit corporate liability and protect reputation, oil and chemical companies began to focus on appropriateness of the ships they chartered.

To determine whether characteristics of ships and its crew enable safe transport of their cargo, they implemented a voluntary process known in the industry as "vetting". [2] Ship vetting involves sourcing all relevant data (such as owner/operator profile, the vessel's history, Port State Control record) and evaluating the potential risks by using available research resources. As a part of the overall screening process ship inspection is performed by inspectors working for or hired by company. Two inspection regimes are the most commonly used in the tanker industry: Ship Inspection Report Programme (SIRE) developed by the Oil Companies International Marine Forum (OCIMF) and Chemical Distribution Institute (CDI) inspection system.

Although vetting inspection is non-mandatory, and an oil tanker does not pass or fail it, it is one of the most important steps in the evaluation process. Considering that many charter parties contain vetting clauses, and that failure to obtain vetting approval may result with costs, it is important to take all necessary steps to demonstrate to the inspectors that cargo can be transported safely, responsibly and competitively. [7]

In this article SIRE inspections on oil tankers are described and compared with other tanker inspections.

2 SHIP INSPECTION REPORT PROGRAMME

The Oil Companies International Marine Forum, a voluntary association of oil companies, was formed in 1970 in response to the growing public concern about marine pollution. [9] Because a common interest of members is to evaluate the quality of the ship and its crew in advance of charter to ensure safe and environmentally responsible transport and handling of cargo, OCIMF introduced SIRE, a tanker risk assessment tool—a database of information about tankers, in 1993.

Original SIRE was revised several times. [10] At the beginning of the programme, diverse inspections protocols were used and various report formats were submitted. To establish a standardised, objective inspection process the Uniform Vessel Inspection Procedure, composed of an Inspection Element and a Report Element, in 1997 was introduced. Today SIRE covers vessels grouped in categories: oil tankers, chemicals tankers, LPG carriers, LNG carriers and combination carriers (categories 1 and 2 depending on tonnage) and offshore barges, inland barges (manned and unmanned) and integrated barges (category 3). To make program uniform, transparent and practical, Vessel Inspection Questionnaire (VIQ), Barges Inspection Questionnaire (BIQ), Uniform SIRE Inspection Report, Vessels Particulars Questionnaire (VPQ) and Barge Particulars Questionnaire were developed. These documents are continuously checked and, if necessary, revised.

Safe and environmentally responsible operation of ships is required by a number of regulations, codes, conventions, guidelines, procedures and standards, and depend on compliance and responsible behaviours on-board ship that should be checked and objectively evaluated during time-limited inspection. [6] Therefore inspectors must possess qualification, knowledge, experience and physical fitness, attained and/or examined through training and accreditation process. Accredited SIRE inspectors, appointed by OCIMF member company, after receiving the vessel particulars and the corresponding questionnaire from the database conduct on-board inspection in accordance with the requirements of the SIRE. The completed report is uploaded to the SIRE database and provided to the operator for respond to comments or observations. The resultant report is available for a nominal fee to OCIMF members, bulk oil terminal operators, port authorities, canal authorities, oil, power, industrial or oil trader companies. OCIMF cooperates with the International

Maritime Organisation, the Paris Memorandum of Understanding, the UK Marine and Coastguard Agency, the Australian Maritime Safety Agency and other Port State Control administrations in efforts to eliminate sub-standard ships. Therefore, free access is provided to Governmental bodies which supervise safety and/or pollution prevention in respect of oil tankers/barges.

3 OIL TANKER VETTING INSPECTION

Under the SIRE programme each tanker should be inspected every six months. Inspectors, causing the least disruption to the tanker's operation and accompanied by a member of the tanker's staff, conduct an inspection in a following order: a review of the tanker's documentation, followed by an inspection of the wheelhouse and navigation, communications, general external areas (including mooring, main deck and pumproom), cargo control room, engine and steering compartments and finally, the accommodation. [6]

VIQ contains a serious of questions related to various aspects of tanker operations, grouped into chapters: general information on oil tanker (including data on last Port State Control inspection), certification and documentation, crew management, navigation, safety management, pollution prevention, structural condition, cargo and ballast systems, mooring, communication, engine and steering compartments, general appearance and condition and, if the vessel has an Ice Class Notation or has a valid winterisation certificate, ice operations. The inspector must respond to all the questions. The "Yes" "No", "Not Seen" or "Not Applicable" responses are utilised. For a "No" or "Not Seen" response, an observation by the inspector is required. Answers to some questions must be accompanied by comments. Non-mandatory comments can supplement responses or be added at the end of the chapters.

During inspection of oil tanker 282 items, related to certification, safety management and the operator's procedures manuals, survey and repair history, enhanced survey programme, condition assessment scheme, crew management, crew qualifications, drug and alcohol policy, navigation policies, procedures and documentation, navigation equipment, charts and publications, navigation, safety management, drills, training and familiarisation, ship security, enclosed space and pump room entry procedures, monitoring non-cargo spaces, gas analysing equipment, hot work procedures, life-saving equipment, fire-fighting equipment, material safety data sheets, access, oil record books, shipboard oil and marine pollution emergency plans, VOC management plan, cargo operations and deck area pollution prevention, pump rooms and oil discharge monitors, ballast water management, engine and steering compartments, garbage management, energy efficiency, structural condition, cargo and ballast systems policies, procedures and documentation, stability and cargo loading limitations, cargo operations and related safety management, cargo and ballast handling and monitoring equipment, ullaging, sampling and closed operations, venting

arrangements, inert gas system, crude oil washing, static electricity precautions, manifold arrangements, pump rooms, cargo hoses, cargo lifting equipment, ship to ship transfer operations, mooring equipment documentation, mooring procedures, mooring equipment, anchoring equipment, single point moorings, emergency towing arrangements, communications procedures, communications equipment, engine and steering compartments policies, procedures and documentation, planned maintenance, safety management, machinery status, steering compartment, hull, superstructure and external weather decks, electrical equipment, internal spaces and accommodation areas are carefully and critically examined. Taking into account time needed to check all afore mentioned components, requirements to discuss any observation with the member of the ship's staff assigned to accompany the inspector and the inspection findings with the Master or the Master's authorised deputy before leaving the vessel, vetting inspection usually lasts 10 h. [1]

Considering comprehensiveness of the VIQ, properly conducted inspection by competent inspector, as enabled and assured by SIRE, should be sufficient as a part of the screening process. However, it seems that a number of oil companies do not use SIRE system as it was intended and requires additional SIRE inspections although tanker has a report that is less than 6 months old. Therefore the intensity of vetting inspections and associated costs for the tanker owners could be unnecessarily high. [8] Furthermore, due to extensive preparations and duration it may cause additional burden to the crew and contribute to the occurrence of fatigue. For example, frustration of the crew prior to vetting have been detected by Karlsson. [3]

Moreover, the lack of trust in the industry between flag states, port states, classification societies, insurance companies and cargo owners resulted with numerous inspections performed by different organisations. [4] Our study shows that vetting inspection is one of the 13 annual regimes of tanker

survey. It is one of four basic tanker survey regimes, together with Port State Controls (PSC) and Flag State Controls (FSC), Annual Class Survey, and Protecting and Indemnity (P&I) Club Survey. Another regimes are: International Ship and Port Facility Security, International Safety Management Audit, Maritime Labour Convention Audit, Greenward Associates Survey, Superintendent's General Inspection, Internal ISPS Audit, Internal ISM Audit, Internal Maritime Labour Convention Audit. Our analysis shows that tankers are inspected frequently and comprehensively (Table 1). As seen from Table 1, among survey regimes, vetting inspection is the most extensive one. Therefore it is not surprising that its duration is the highest among basic tanker survey regimes: 20 h annually in comparison to 8 h needed for FSC, 10 h for PSC, 10 h for Class Survey and 4 h for P&I.

Table 1. Survey items

Survey regime	Number of inspected items	Annual frequency	Number of items inspected annually
1. PORT STATE INSPECTION	246	2	492
2. FLAG STATE INSPECTION	181	1	181
3. CLASS SURVEY	101	1	101
4. ISM AUDIT	30	0,5	15
5. ISPS AUDIT	13	0,5	6,5
6. P&I CLUB INSPECTION	292	0,5	146
7. VETTING INSPECTION	282	2	564
8. SUPERINTENDENT AUDIT	78	1	78
9. GREENAWARD FOUNDATION	159	1	159
10. MLC AUDIT	25	0,5	12,5
11. INTERNAL MLC AUDIT	20	1	20
12. INTERNAL ISM AUDIT	60	1	60
13. INTERNAL ISPS AUDIT	18	1	18
Total:			1853

Source: authors

As shown in Table 2 a certain numbers of items related to ship seaworthiness are checked repeatedly (Table 2).

Table 2. Overlapping of items inspected by tanker survey regimes.

Category	No of items inspected by						
	8 regimes	7 regimes	6 regimes	5 regimes	4 regimes	3 regimes	2 regimes
SHIP CERTIFICATES	0	2	1	3	3	7	1
CREW CERTIFICATES	0	0	1	0	7	3	0
LIFESAVING APPLIANCES	0	0	3	4	3	1	1
FIRE SAFETY	0	1	3	3	5	3	7
NAVIGATION	0	2	12	8	11	9	14
SHIPS PROCEDURES	0	0	3	3	15	9	16
BRIDGE PUBLICATIONS	0	0	0	1	2	1	10
SHIPS RECORDS	0	0	0	3	7	11	19
MOORING/ANCHORING	0	0	0	3	1	1	5
STRUCTURAL CONDITION-HULL&DECK	0	0	1	2	6	4	3
STRUCTURAL CONDITION-BALLAST & VOID SPACES	0	0	0	0	0	3	4
HEALTH & HYGIENE	1	0	3	4	0	6	7
MACHINERY SPACE OPERATIONS	0	1	1	3	5	15	13
STEERING GEAR SYSTEM	0	0	2	2	0	2	3
ENVIRONMENTAL PROTECTION	0	0	1	1	1	5	6
CARGO WORTHINESS, TANKER	0	2	3	6	10	22	7
CARGO CONTROL ROOM	0	0	0	0	0	0	0
Total	1	8	34	46	76	102	116

Source: authors

Research show that because scope and extent of tanker inspections significantly overlap, they are in certain extent redundant, and such over-inspection may have a negative effect on the psychophysical condition of the crew. [1] Additionally, it has been shown that over-inspection does not necessarily decrease the probability of having a casualty but can rather increase it. [4]

Moreover, we estimate that average price of inspections is at least 33600 USD per oil tanker. To be able to operate profitably, it is possible that money must be saved somewhere else, maybe by cutting costs of other operations, equally or more important for safety.

4 CONCLUSIONS

Because maritime accidents involving oil tankers can have serious consequences, evaluation of the potential risks is necessity to minimise liability. Therefore vetting approval has become obligated step for chartering to eliminate substandard oil tankers. As a part of the process, vessels are screened against the SIRE inspection, which is not used in the spirit that it was introduced, and oil tankers can be over-inspected.

Therefore, additional efforts by all concerned parties should be put into analysis of SIRE inspections to ensure that additional vetting inspections are not required by oil companies. Furthermore, better cooperation between all stakeholders is necessary to compare and acknowledge results of various

mandatory and non-mandatory inspections performed by different bodies and avoid inessential inspections. Otherwise oil tanker safety can be jeopardised and inspection regimes can defeat the purpose for which they were introduced.

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