ENHANCING QUALITY AND SAFETY MANAGEMENT IN SHIPPING: TANKER MANAGEMENT AND SELF ASSESSMENT

Fatih Turker
Istanbul Technical University/ Maritime Faculty
ITU Maritime Faculty 34940 Tuzla- Istanbul TURKEY

Assoc. Prof. Dr. Ismail Deha Er
Istanbul Technical University/ Maritime Faculty
ITU Maritime Faculty 34940 Tuzla- Istanbul TURKEY

ABSTRACT
Shipping industry is governed by a multitude of statutory regulations that support ship safety and pollution prevention efforts at both national and international level. However the studies and experiences show that without "embedding the safety, quality and maritime environmental protection culture" with in the company, external audits can have a limited effect on the ship's safety and prevention of pollution. Tanker Management and Self Assessment (TMSA) is a guideline to measure and assess tanker operators' management system developed by Oil Companies International Marine Forum (OCIMF). This study focuses the objective and scope of the TMSA by defining its objectives and benefits while arguing its impacts on the overall performance of tanker operator companies.

Key words: Safety &Environmental Management, Quality Management, Tanker ship,

1. INTRODUCTION

Shipping industry is governed by a multitude of statutory regulations that support ship safety and pollution prevention efforts at both national and international level. However the nature of the shipping business allows companies to carry the flag of the country which best fits to the companies objectives. While some of the flag authorities pay utmost attention to the performance of their registrated vessels in the name of safety and environmental consciousness; some other, which are generally called as "flag of convenience", approach the problem as a more "business" way. According to the OECD the percentage of sub-standard ships in the world commercial fleet is estimated to be between 10-15% (Peijs, 2003). The maritime industry solution to this problem is represented by the vetting inspections which are performed on oil tankers, chemical tankers and bulk carriers. The vetting inspections create a strong commercial incentive for the ship operator to comply to the vetting inspection requirements since the outcome of these inspections will determine if the ship gets cargo or not. This lack of trust in the maritime industry among all the industry organizations, stakeholders and regulators has created an inspection industry which is heavily controlled by oil majors in order to limit their liability.
Therefore inspections can be classified under six terms. These are (Knapp and Franses, 2006):

- ISM and ISPS audits due to statutory requirements and which are still sometimes performed by the flag states but most of the time also delegated to recognized classification societies.
- Port State Inspections

- Classification surveys on behalf of flag states and to remain in class
- Insurance companies such as P&I Clubs for insurance coverage purposes.
- Industry inspections such as vetting inspections performed on oil tankers, chemical tankers, gas carriers and bulk carriers on behalf of oil majors or other cargo owners or on behalf of the ship management. These inspections can be listed as CDI, OCIMF/SIRE, Rightship, and Oil Majors.
- Commercial incentives: These inspections are on request of the ship operator in order to obtain a quality certificate which will then help in obtaining commercial incentives.

However the studies and experiences show that without "embedding the safety and maritime environmental protection culture" with in the company, external audits can have a limited effect on the ship's safety and prevention of pollution caused by shipboard operations. The safety concerns can be classified under three ages as interpreted by Reason (1991) (Fig. 1). First, the focus was on technical problems, and this still has its place. However, as technical systems became more reliable, the focus turned to the human causes, and many accidents were blamed on individuals directly involved in the operation. More recently, major accident investigations like Piper Alpha have recognized that the root causes of failures of equipment and operators lie deeper in the organizations' safety management and safety culture (Department of Energy, 1990).

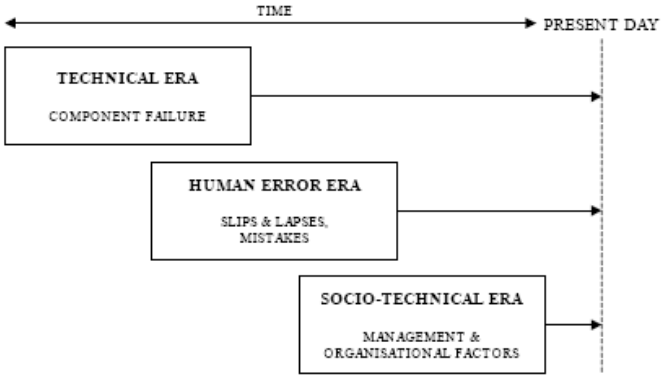

Fig.1. Three Ages of Safety Concerns (Reason 1991)

In scope of this idea, in 2004, Oil Companies International Marine Forum (OCIMF) published its best practice guide for "Tanker management and Self-Assessment" (TMSA).

2. REQUIREMENTS OF TMSA

For almost two decades the International Safety Code(ISM code) and the hip Inspection Report Program (SIRE inspections) are in place. However the industry saw that there is a need for more safe-guards for vetting and chartering above the both ISM and SIRE. This need arises from the criticism that the requirements of the ISM code are not applied properly by tanker operators.

Indeed it was felt that it had gone the same way as the STCW Convention where every country managed to be on the white list (IMO, 2007). Another criticism is that the SIRE inspections become very subjective because of the nature of the inspection. Moreover, as Parker (2001) mentioned, SIRE inspections could overlook important defects in the system.

In this respect TMSA is aimed to be the alleged solution to the ills of the system, which has managed to circumvent the spirit of ISM and the uncertainty of data presented by a SIRE audit of finite and limited nature. The TMSA program propose to achieve this by providing clear-cut criteria to tanker operators, which are to be self-assessed by the operators and by presenting their findings to OCIMF for its inspection and scrutiny. Help is provided to the operators through Key Elements, the Aims of such key elements, the guidance notes, the Key Performance Indicators (KPIs), and Best-Guidance Practices (OCIMF, 2004). To evaluate the progress of the tanker operator the program identifies 4 "stages". Every tanker operator is to report to OCIMF his "progress report card" on the "stage" reached by him on a progressive basis. The reports are to be continuous, to be updated whenever the operator achieves a higher stage level. Figure 2 illustrates a typical flow chart of a key element implementation through the management system where as serves as a guide for the progress (OCIMF, 2004).

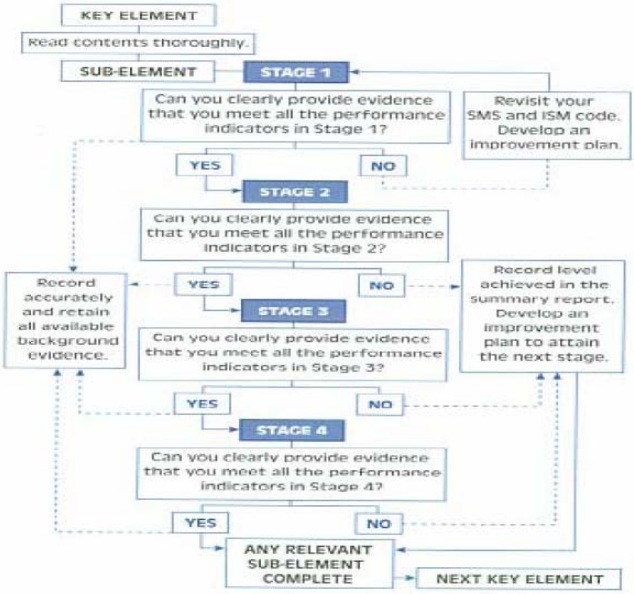

Fig. 2. Measurement-process flowchart (OCIMF, 2004)

The report thus generated is to be an indicator of where the tanker operator stands with respect to the OCIMF guidelines on TMSA. OCIMF admits that these guidelines are to be reviewed and updated by it on an on-going basis.

2.1 Elements of TMSA and their interpretation

The TMSA guidelines define 12 principles or key elements of management practices. These elements provide a checklist approach for ship operators who are aiming to achieve safety and environmental excellence. The elements define the objectives and key performance indicators required to meet the main objective of the element and guidance on how the objective should be achieved. The key elements under the TMSA program and their main objectives are:

Table 1: Elements of TMSA and their main objectives

Elements of TMSA	Main Objective
1. Management,leadership and accountability	Provide direction and clearly define responsibilities and accountabilities at all levels within the organization.
2. Recruitment and management of shore-based personal	Ensure that fleet is supported by competent shore-based staffs who are committed to a high standard of fleet management.
3. Recruitment and management of ships' personnel	Ensure that all ships in the fleet have competent crews who are capable of working as effective teams.
4. Reliability and maintenance standards	Establish maintenance standards so that all ships in the fleet capable of operating safely without the risk of an incident or detention.
5. Navigational safety	Establish and consistently apply navigational practices and the bridge procedures in line with regulatory and company policies.
6. Cargo, ballast and mooring operations	Establish and consistently apply planning and operational practices and procedures that support regulatory and company policies.
7. Management of change	Establish procedures for evaluating and managing changes to operations, procedures, ships' equipment or personnel to ensure that safety and environmental standards are not compromised.
8. Incident investigation and analysis	Use effective investigation, reporting and follow-up methods to learn from significant near misses and incidents, and thus prevent recurrence.
9. Safety management	Develop a proactive approach to safety management, both on board and ashore, that includes identification of hazards and the implementation of preventive and mitigation measures.
10. Environmental management	Develop a proactive approach to environmental management that includes identification of sources of marine and atmospheric pollution, and measures for the reduction of potential impacts, both on board and ashore.
11. Emergency preparedness and contingency planning	Establish an emergency-preparedness system and regularly test it to ensure an ongoing ability to react effectively to an incident.
12. Measurement, analysis and improvement	Establish and implement appropriate measurement and feedback processes to focus on and drive continuous improvement.

If the above elements are analyzed, it more or less reflects the objectives of the ISM Code. But the difference between the TMSA and ISM Code show its self

upon guidance where TMSA not only provides the objectives to be achieved but also gives detailed guidelines through key performance indicators to achieve them. These guidelines are not vague but quite certain, almost leaving any room for possibilities of circumventing them.

In fact operators, who have implemented ISM, in its true spirit, will find at least the first 2 stages of the program very parallel to their current ISM applications. Stages 3 and 4 of some key elements require a certain degree of planning, restructuring and/ or remodeling of the Safety Management System (SMS) of the company. However the need for supplementing ISM Code and SIRE inspections guide through TMSA indicates that it is not going to be easy to implement the TMSA requirements for the operators who do not internalized the ISM Code within their management system. Further more stage 4 is not the ultimate objective because continual improvement is the very foundation of TMSA.

To achieve the objectives of an element in the TMSA, program defines key performance indicators (KPIs). The KPIs within the elements help ship operators to drive their continuous-improvement programmes. Operators can use their own assessment as a stand-alone lever for improvement, or combine it with the tools they currently use for developing and improving their management system. In either case, the feedback should provide operators with a clear, objective picture of their performance. This will help them to identify gaps and will provide a focus for planning closure and future improvement

2.2 Objectives and Benefits of TMSA

A bit misleading in name, the TMSA tool is in fact a quality management system standard. It is felt that operating tankers only in accordance with an ISM Code-defined safety management system is not sufficient. The TMSA takes the approach of the ISO 9001:2000 Quality Management Systems Requirements and promotes continual improvement of processes through the Plan-Do-Check-Act cycle which is also know as the Deming Cycle(Simsek,2001). In this respect the TMSA addresses issues beyond those required by the ISM Code. These issues can be summarized with the following concepts:

- The use of performance indication (benchmarks) to measure progress – approximately 250 performance indicators have been documented in this guide;
- Significant emphasis on leadership (the role of top management);
- Significant emphasis on the recruitment and maintenance of shore-based staff to including retention benchmarks;
- Significant emphasis on environmental policy and management – stating and pursuing objectives to reduce pollution – eventual attainment of ISO 14001 accreditation;
- A controlled management of change process;
- Formalized (documented) risk assessment programs;
- Formal navigational audits by the master of the ship; and
- Greater emphasis on feedback mechanisms, to specifically include the customer.

On the other hand the TMSA quality system initiative provides several benefits to tanker operators who promote safety and quality. The benefits of implementing such a system for a tanker operator can be namely:

- Key Performance Indicators – examples to incorporate as specific results to measure;
- Goals by way of Best Practices – established for each stage of implementation;
- Directly addressing leadership – one of quality management principles;
- Compelling operators to establish benchmarks and measure the results of important activities;
- Directing your organization based on factual information, the result of measurement and analysis; and
- Allowing each OCIMF member to charter from those operators who excel in safety and environmental practices.

With regard to the continues improvement goal and the need of clear-cut criteria's to achieve safety, quality and environmental excellence, the objectives of the TMSA can be identified briefly as:

- To make a standard framework for assessments of the operators management system and to be able to do this in a consistent way.
- To ensure effective strategies and provide clarity in the company's policies, its purposes, processes roles and responsibilities and to ensure that these systems are implemented and known throughout the ship operator organization in every level.
- To make systems to achieve the organizations objectives by consistent implementation of all the plans.
- To check, to evaluate and to create feed back systems from results obtained.
- To define targets and focus the efforts on areas where maximum benefits and improvements can obviously be obtained.
- To reduce the risk of incidents and accidents involving; threat to human life, the environment, the cargo and the ship and her equipment.

3. CONCLUSION

Most of the tanker industry shares the legislators' objectives of achieving a safer and cleaner world. The industry should be in the business of constantly improving safety and efficiency systems rather than trying to keep one step ahead of the game by finding loopholes and clever tricks around the legislation. It is not the threat of punishment, which should drive the industry to achieving higher standards, but a genuine desire to work as a responsible industry.

TMSA could well prove to be an excellent example of this being put into practice. Allowing a tanker operator to assess how good they are and then tell their customers, is fundamentally a good system as it pushes the responsibility for making sure that the ship is safe into the operator's hands. Vitally, it is not a system, which is based on a vetting inspection which just takes a momentary snapshot of the ship. TMSA goes beyond this and takes a look at the most

fundamental aspect of running a good ship – its crew, their training and continuous improvement practices. Besides the objectives of TMSA are indeed lofty such as, Incident-free operations, Improved management systems, Best practices transferred across the fleet, Feedback and easy access to the charterer on performance of operator, No-Blame culture and Continuous improvement in standards, to list a few. Therefore Tanker Operators will notice that TMSA, though in the same mould as that of ISM Code, is different, living and evolving.

REFERENCES

[1] Cowley, J., 1995, The concept of the ISM Code. In Proceeding of management and operation of ships: practical techniques for today and tomorrow (pp. 24 – 25). London: The Institute of Marine Engineers.

[2] Department of Energy (1990). The public inquiry into the Piper Alpha disaster, London: Department of Energy.

[3] IMO,2007, Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended, confirmed by the Maritime Safety Committee to have communicated information which demonstrates that full and complete effect is given to the relevant provisions of the Convention, MSC.1/Circ.1163/Rev.2, http://www.imo.org/includes/blastDataOnly.asp/data_id%3D18788/1163-Rev-2.pdf .

[4] Knapp, S. and Franses, P.H, 2006, Analysis of the Maritime Inspection Regimes, Econometric Institute Report, Erasmus University, Rotterdam.

[5] OCIMF, 2004, Tanker Management and Self Assessment, OCIMF Press Ltd., London.

[6] Parker, C.J., 2001, Shipping and the human factor, Seaways, The Nautical Institute, 11, 4-8.

[7] Peijs, K., 2003, Speech at Mare Forum, Amsterdam.

[8] Reason, J. (1991), "The Reliability of Management in Decision Making", Seminar Reliability, The Risk of Management, IMechE, London.

[9] Şimsek, M.,2001, Toplam Kalite Yönetimi, Alfa Yayınları, Istanbul.