



SUB-COMMITTEE ON STANDARDS OF
TRAINING AND WATCHKEEPING
32nd session
Agenda item 15

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ANY OTHER BUSINESS

SOLOB - Safety of life on board

Submitted by India

SUMMARY

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| <i>Executive summary:</i> | The paper brings forth the concern of the Indian Administration of the long term effects of a combination of factors, termed as the personnel safety factors that influence a Seafarer in increasing human and organisational error. |
| <i>Action to be taken:</i> | Paragraph 3 |
| <i>Related documents:</i> | Annexed text |

1 In accordance with the provisional agenda laid out for the thirty-second session of the Sub-Committee on STW, whereby in conformation of provisions of Agenda 15, the Technical Paper from the Indian Administration, as given in the annexed text, is made out on issues of personnel safety.

2 The Government of India is of the opinion that a statutory ordinance can be brought into force to include a separate Certification for SOLOB or include it as a constituent of either one of the Safety Equipment Certification/Safety Construction Certification/Record of Safety Equipment.

Action requested of the Sub-Committee

3 The Sub-Committee is invited to take note of the above, consider the annexed text and decide as appropriate.

ANNEX

SOLOB - SAFETY OF LIFE ON BOARD

1 Introduction

There has been increasing awareness of Safety in the maritime field over the last few years. In addition to the various statutory Certification on board, a number of training schemes have been introduced in the pre-sea stage to reduce the probability of risk and increase risk awareness. The personnel who man ships in current times are better trained, more knowledgeable and prepared to face inadvertent situations. Generally the seafarers are expected to perform better, and have very little margin for mistakes, principally because of the following reasons:

- 1.1 manning of ships has reached a bare minimum, as reliability of machinery has increased;
- 1.2 the intense presence of commercial transaction, puts a load of responsibility, hitherto unseen;
- 1.3 the fierce competition for employment, rendering a job more vulnerable;
- 1.4 the nature of some ships as bulkcarriers, tankers, gascarriers which have very quick turnarounds and low maintenance times.

2 Causes of concern in Personal Safety

It is thus common knowledge now that the level of workload has increased and intensity to which a seafarer gets involved is many folds more than yesteryears. This involves innumerable phases of training, shipboard exercises, paperwork in connection with ISM, vessel maintenance, voyage inputs, personnel changes etc.

There has been as of date no feed backs from the long-term effects of seafaring in the form of:

- 2.1 detailed medical reports which can be used to take preventive steps;
- 2.2 socio-economic effect reports to be able to restructure seafarers career;
- 2.3 the effect of inherent draw backs in a seafarers levels of competency in terms of physical, mental endurance and fitness, aptitudes, attitudes, comprehension, logic etc, other than what is prescribed by STCW-95;
- 2.4 the effect of shipboard conditions that influence a seafarers performance. It is this last point which has been least explored. There are too many reasons why this aspect has been overlooked and they are:
 - 2.4.1 Commercial considerations are too strong to condemn effects that do not surface immediately but usually show results much later.
 - 2.4.2 Owing to the ethnic manning of crew, no comprehensive report can be put up.

- 2.4.3 Vessels, which meet rule requirements can be living hell as far as conditions on board can be considered.
- 2.4.4 Rule requirements, initiate a philosophy of safer ships, and not necessarily a seafarers safety in the long run.
- 2.4.5 Most vessels when constructed have equipment that more or less meet a certain rule requirement, not necessarily all the requirement that are not mandatory by nature but are recommendatory.
- 2.4.6 The conditions on board are not monitored for many of the initial conditions of rule requirement, over the years.
- 2.4.7 Changes of flag, cause radical changes in requirements of crew comfort.
- 2.4.8 Certain critical items like daily use equipment, stores, hospitals, galley, fridge room, toilets are matter of conjecture when it comes to inspection under PSC, ILO or Statutory Certification.

In fact unions, ITF etc. have been far more active and vigilant than national authorities or classification societies. If the vessel happens to ply in areas where the elements of seafarers welfare and safety are not active, the sea farer will silently suffer.

3 The Personal Safety Factors

The list can be exhaustive, but there are a few factors which effect a crews performance on board, no matter how trained or Certified he is. The factors which have the most profound effect are listed below and shall be hitherto known as the **‘PS’ factors (Personnel Safety)**:

- 3.1 Vessel dynamics and vessel behaviour.
- 3.2 Noise.
- 3.3 Lighting
- 3.4 Vibration.
- 3.5 Air quality in accommodation and engine room.
- 3.6 Effects of EMR from equipment on board.
- 3.7 Thermal environment.
- 3.8 Ergonomics of machinery, CCR space, accommodation, work places.
- 3.9 Visual environment.
- 3.10 Stress factors – emanating of socio-economic factors, mental and methodological issues.

4 Reasons for considering PS factor as statue

The **‘PS’** factors listed above, greatly effect performance of seafarers. There is enough of literature which explains the optimum conditions for safe living on board, but as the vessel gets older, too many factors influence a vessels continued compliance with regulations as compared to when it was built, provided even then it was built **“right”**. Some of the reasons enumerated are:

- 4.1 A vessel when built has checks carried out to ascertain compliance with rules. Only a very well designed vessel will meet the requirements in every aspect of the **‘PS’** factors. Over the years, owing to ageing, constant repairs, change of flags, lack of tests and inspection on such issues as the PS factors, the very environment or conditions of work begin to deteriorate.
- 4.2 Vessels plying in typically extreme zones with non functional or semi-functional accommodation facilities is quite common. Coupled with these are equipment which are either deteriorated in performance, have their protective covers in states of disrepair or have undergone so many repair phases that their original standards are no longer valid. The irony is that during all this time, the vessel continues to meet rule requirements.
- 4.3 Ethnic manning may seem economically very viable but experience has shown that it is a strain on the crew themselves, unless the mix is very well matched. This is because of differing attitudes to work, work cultures, social fabric, behavioural symptoms and essence of ethnic divisions
- 4.4 Statutory Certification serves its purpose to a large extent, which includes classification societies, but most of the time some inherent flaws remain uncorrected such as:
 - 4.4.1 No certification re-establishes the condition measurements of the PS factors stated earlier, either during dry-docks, special surveys, change of flags or PSC. Seafarers are left in a state of fait accompli.
 - 4.4.2 Most vessels of a certain age and of typical builds, sail with conditions of class, class notes, dispensations, exemptions on a vital part of structure, equipment or function. This causes immense psychological pressure.
 - 4.4.3 Selection of crew, abilities of crew, crew performance, does not reflect on Certification anywhere. For the same reasons, company performance, abilities, structure and safety monitoring records do not figure anywhere. A DOC or SMC only goes through the procedure and adherence to the procedure. It does not depict levels of safety performance, safety standards, safety awareness, and evaluation in the certification.
 - 4.4.4 Change of flags, flags of convenience, dual flags, completely undermines the standards of living and working conditions on board. Some flags would not bother anything beyond the hull and machinery, being of any importance. In such vessels the seafarer is left again in a state of fait accompli.

- 4.4.5 Most seafarers are contract workers, excepting for big companies, which may resort to company rosters, or national companies with a fixed crew. Being contract workers, their **trace ability** is poor. In some cases, attrition rate is high. Hence a comprehensive report on their states of well being is difficult to get national medical check ups on routine basis do reveal some telling features of the effect of the **‘PS’** factors enumerated above. World wide, there are few corrective steps taken and generally rehabilitative measures are not part of national law. The effect is most devastating when the same people keep going back to vessel with reduced sensory and reactionary elements.
- 4.4.6 Vessel insurance, personal insurance etc are all based on certification. A Certificate once renewed is taken on face value as if the vessel met all requirements during its phase of approval after construction. Subsequently on board, conditions are matters of conjecture, whether it is appropriate or not.

5 Factoring **‘PS’** in to the Certification Process

It thus goes to prove that there is a need for measuring the PS condition at beginning of the vessel life, prior delivering and having it endorsed on the certificate of safety equipment or the Certificate of Safety Construction as **“a factor”**, or included in record of equipment as **“measured values”**. Over the years, as the vessel goes through a period of:

- 5.1 wear and tear;
- 5.2 repair to hull and equipment;
- 5.3 change of conditions of service;
- 5.4 alterations in hull equipment for trade or cargo;
- 5.5 modification to vessels hull and equipment for trade or cargo;
- 5.6 change of flag;
- 5.7 change of manning pattern;
- 5.8 change of class.

then it would be necessary to ensure that the acceptable values of the **‘PS’** factors should be rechecked to establish that there is no major deviation that can affect the human performance.

There is so much importance attached to human error in the form of **HOE (Human and Organisation Error)** that it is impossible to isolate the factors that can aggravate or compound, risk factors contributing to **HOE (Human and Organisation Error)**. The endorsement of the **‘PS’** factors should then be a regular and mandatory feature, as this will ease the responsibilities of owners/managers as well as the seafarers in attaining optimum safety standards.

6 Conclusion

It is generally believed that with higher reliance on machinery and hull with higher reliability concepts, the incidence of accidents will reduce gradually. Till today nobody denies the fact that the crew and thus the human factor in operations is an important intergradient in accident mitigation. The part that does not figure in Certification or is over looked later such as latent flaws, **HOE** in design construction and operation of hull and equipment, manifests itself in some form over long periods, influencing the crew members all along, thus reducing their capabilities and senses in recognizing and apprehending risk factors contributing to accidents.

7 Recommendations

The introduction of these 'PS' parameters as forms of endorsement, as spelled out in section 5.0 subsequent to regular checks and tests would surely alleviate many latent crew problems. The Indian Administration has been following up on feedbacks through various manning agencies, unions and ship owners the rigours that Seafarers go through ships of poor build and performance. In fact the Indian Administration feels that if it could be introduced as a separate certification process, aiding the seafarer instead of penalizing him, it would be the pinnacle of an effort to further reduce accidents through human error mitigation methods.
