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RESOLUTION A.772(18)
adopted on 4 November 1993

FATIGUE FACTORS IN MANNING AND SAFETY

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO that the eighth session of the IMO/ILO Joint Committee on Training, held in Geneva in September 1990, devoted to consideration of fatigue as a factor in the manning and safety of ships, had identified and assessed the significance of factors related to shipboard life which contribute to fatigue,

BEARING IN MIND that regulation V/13 of the International Convention for the Safety of Life at Sea, 1974, as amended, requires Contracting Governments to adopt measures for the purpose of ensuring that, from the point of view of safety of life at sea, all ships shall be sufficiently and efficiently manned,

NOTING that regulations II/1 and III/1 of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, provide that watch systems shall be such that the efficiency of watchkeeping is not impaired by fatigue,

NOTING ALSO that resolution 22 of the International Conference on Training and Certification of Seafarers, 1978, invited all Governments to ensure that crew members are sufficiently rested before commencing their duties,

NOTING FURTHER resolution A.680(17) by which it invited all Governments to encourage those responsible for the operation of ships to take appropriate steps to develop, implement and assess safety and pollution prevention management in accordance with certain guidelines, including the guideline that each ship should be manned with qualified, medically fit and suitably experienced seafarers, in accordance with the relevant international and national requirements,

RECOGNIZING that, while there is no universally accepted technical definition of fatigue, all parties involved in ship operations should be alert to the factors which can contribute to fatigue, including but not limited to those listed in the Annex, and to take them into account, as appropriate, when making decisions on ship operations,

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NOTING resolution A.481(XII) by which it recommended that, in establishing the minimum safe manning for each ship, Administrations should observe certain guidelines and should "bear in mind that there should be a sufficient number of qualified personnel to meet peak workload situations and conditions with due regard to the number of hours of shipboard duties and rest periods that may be assigned to a seafarer",

HAVING CONSIDERED the recommendations made by the Maritime Safety Committee at its sixtieth session,

1. ADOPTS the Fatigue Factors in Manning and Safety set out in the Annex to the present resolution;
2. INVITES Governments to encourage those responsible for the operation of ships to take these factors into account in making operational decisions;
3. REQUESTS the Maritime Safety Committee periodically to review this resolution and to consider any need for amendments in the light of experience gained.

ANNEX

FATIGUE FACTORS IN MANNING AND SAFETY

1 INTRODUCTION

1.1 The purpose of this document is to provide a general description of fatigue, to identify the factors of ship operations which may contribute to fatigue, and to classify those factors under broad categories to indicate the extent to which the factors may be related.

1.2 The objective is to increase awareness of the complexity of fatigue and to encourage all parties involved in ship operations to take these factors into account when making operational decisions.

2 GENERAL DESCRIPTION OF FATIGUE

2.1 Fatigue results in the degradation of human performance, the slowing down of physical and mental reflexes and/or the impairment of the ability to make rational judgments.

2.2 Fatigue may be induced by factors such as prolonged periods of mental or physical activity, inadequate rest, adverse environmental factors, physiological factors and/or stress or other psychological factors.

3 CLASSIFICATION OF FATIGUE FACTORS IN RELATED GROUPS

3.1 In the case of seafarers, among the most commonly recognized and documented causes of fatigue are poor quality of rest, excessive workload, noise and interpersonal relationships. The contributory factors that lead to the above are many and varied. The significance of these factors as contributory causes of fatigue will vary depending on operational circumstances. Some factors will be more manageable than others. Such factors can be grouped as follows:

3.1.1 Management ashore and aboard ship, and responsibilities of Administrations:

- scheduling of work and rest periods;
- manning levels;
- assignment of duties;
- shore-ship-shore support and communication;
- standardization of work procedures;
- voyage planning;
- watchkeeping practices;
- management policy;
- in-port operations;
- recreational facilities;
- administrative duties.

3.1.2 Ship-specific factors:

- level of automation;
- reliability of equipment;
- motion characteristics;
- vibration, heat and noise levels;
- quality of working and living environment;
- cargo characteristics/requirements;
- ship design.

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3.1.3 Crew-specific factors:

- thoroughness of training;
- experience;
- crew composition - cohesiveness;
- crew competency and quality.

3.1.4 External environmental factors:

- weather;
- port conditions;
- ice conditions;
- density of vessel traffic.

4 GENERAL DISCUSSION

4.1 Management ashore, aboard ship, and also the responsibilities of Administrations

4.1.1 The prevention of fatigue in the areas of scheduling of shipboard work and rest periods, manning levels, watchkeeping practices and assignment of duties could largely be accomplished by sensible shore-based management and on-board management techniques. It is also recognized that Administrations have an equally important role to play with respect to legislation leading to acceptance, implementation and enforcement in those areas covered by international conventions. Guidelines and provisions should take into account the relationships between work and rest periods to ensure adequate rest. These considerations should include a review of the voyage length, length of port stay, length of service of individual crew members, periods of responsibility and watchkeeping practices.

4.1.2 It is essential that management should provide clear, concise written policy guidance to ensure that ships' crews are familiar with ships' operational procedures, cargo characteristics, voyage length, destination, internal and external communication practices and ship familiarization procedures.

4.1.3 Management should recognize that crews joining a ship need to be adequately rested before assuming on-board duties.

4.2 Ship-specific factors

4.2.1 In designing or modifying ships, existing requirements, recommendations, standards and publications pertaining to the listed factors should be taken into account. Additionally, allowance should be made in designing ships for the adoption of ergonomic practices to prevent fatigue from these factors.

4.3 Crew-specific factors

4.3.1 Thoroughness of training is considered to be important in the prevention of fatigue. Fitness for duty, including medical fitness, proper working experience and the qualifications and quality of crew members are also considered important in this context.

4.3.2 It is important that management recognizes the potential problems stemming from the employment of multinational crews on the same vessel, a practice that might result in language barriers and in social, cultural and religious isolation, all of which may lead to safety problems.

4.3.3 Special emphasis should be placed by management on issues of interpersonal relationships, loneliness, social deprivation and increased workloads which may occur as a result of small crew complements.

4.3.4 Boredom can contribute to fatigue, and it is therefore necessary to provide seafarers with appropriate stimulation.

4.4. External environmental factors

4.4.1 In respect of the listed external environmental factors, it should also be recognized that they could contribute to fatigue.
