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SOME PROPOSED AMENDMENTS

TO

THE 1960 S.O.L.A.S. CONVENTION

INTRODUCTION

Despite the inherent safety of travel by sea, accidents do occur periodically. Because of their infrequency and because of the numbers of people usually involved, passenger ship fires call forth much attention from the world press.

The fires on the "Lakonia" in December 1963 with the loss of 129 people and "Yarmouth Castle" in November 1965 with the loss of 90 people led the United States, at the end of 1965 to demand re-examination of the concepts of fire-protection. As a matter of urgency the Maritime Safety Committee (M.S.C.) of the Inter-Governmental Maritime Consultative Organization (I.M.C.O.) was requested to reconsider the fire protection of passenger ships.

Following the Committees action, two new Parts will be added to Chapter 2 of the 1960 S.O.L.A.S. Convention. Before outlining the nature of these proposed amendments, the Inter-Governmental Maritime Consultative Organisation will briefly be described.

DEVELOPMENT OF I.M.C.O.

Prior to 1948, advances in marine safety stemmed largely from International Conferences brought about by agitation following casualties, some of which were spectacular, such as "Monarch", "Titanic".

For example the 1930 Load Lines Conference resulted finally from discussions between U.K. and U.S.A. at the 1929 S.O.L.A.S. Conference, itself a belated after effect of the loss of the "Titanic" in 1912.

In 1948 the United Nations held a Maritime Conference at Geneva. A Convention was drawn up to enable the Inter-Governmental Maritime Consultative Organization (I.M.C.O.) to be set up. Preparatory meetings were held and in January 1959 the first I.M.C.O. Assembly was held in London. So I.M.C.O. started its activities.

THE STRUCTURE OF I.M.C.O.

The Assembly consists of representatives from all Member States (in November 1966 numbering 64) and meets every two years at I.M.C.O. Headquarters in London. Between Sessions of the Assembly, the governing body is the Council of 16 members (including Australia at present) which meets every six months.

The Assembly votes on the budget, financial regulations, elects Council and approves of the appointment of its Secretary General.

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The Maritime Safety Committee (M.S.C.) which is responsible through Council to the Assembly consists of representatives of fourteen Member States and is elected by the Assembly for a term of four years. Its field of work covers aids to navigation, construction and equipment of ships, manning (from a safety point of view), rules for preventing collisions at sea, handling of dangerous cargoes, maritime safety procedures and requirements, hydrographic information, log books and navigational records, marine casualty investigation, rescue and any other matters connected with maritime safety. It also deals with the prevention of pollution of the sea by oil.

The I.M.C.O. Secretariat, housed at I.M.C.O. Headquarters in London is composed of the Secretary-General, Deputy Secretary General and a number of international Civil Servants drawn from as wide a geographical spectrum as possible. (At present these include an Australian and a New Zealander).

Subsidiary to the Maritime Safety Committee are a number of Sub-Committees and Working Groups of experts, which deal with specialised subjects. Among the subjects currently being covered are Fire Protection, Subdivision and Stability, Bulk Cargoes, Lifesaving Appliances, Dangerous Goods, Oil Pollution, Safety of Navigation, Tonnage Measurement, and Radio Communication.

AUSTRALIAN LEGISLATION

The Navigation Act of 1912-1965 forms the principal legislation in Australia for controlling maritime safety. Provision is made in the Act for the making of Regulations to prescribe in more detail than can be incorporated into an Act, the requirements of various aspects of shipbuilding and shipping practice.

The Act contains as Schedules Six and Seven respectively, the 1930 Load Lines Convention and the 1948 S.O.L.A.S. Convention.

Section 191 gives power to make Regulations to give effect of the provisions of the Safety Convention which relate to construction, hull, equipment and machinery of ships, subdivision load lines and surveys.

Hence when Australia adopts the proposed amendments to the Safety Convention, the technical content of the new Parts will be incorporated in the appropriate Regulations.

THE U.S. PROPOSALS

As a consequence of the disastrous fires on both "Lakonia" and "Yarmouth Castle", the U.S.A. strongly urged I.M.C.O. that its Fire Protection Sub-Committee should as a matter of urgency examine what could be done to improve the fire safety of older vessels.

At this time (late 1965) there was intense pressure within the U.S. for unilateral action to carry out necessary improvements. The U.S. Government instead hoped that this would not be necessary if the problem could be approached by international agreement.

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(In the event the U.S. Congress in October 1966 passed a bill aimed at forcing foreign maritime countries to agree to more exacting safety standards for all passenger ships or to face U.S. unilateral imposition of severer requirements. This bill gives countries to November 1968 to agree to the changes to the 1960 S.O.L.A.S. Convention developed for existing ships by the M.S.C. in May 1966 and adopted with minor amendment by the necessary majority at the I.M.C.O. Assembly in November 1966).

The Twelfth Session of the M.S.C. Meeting in February 1966 agreed to convene a Special Session of the Committee in May 1966 to consider the proposals submitted by the U.S. This session was to be preceded by a meeting of the Fire Protection Sub-Committee.

The U.S. for the May Meeting prepared a lengthy statement of their proposals and their grounds for making them. Briefly the proposals were :

1. All existing passenger vessels shall, as a minimum, be brought into compliance with the fire protection provisions of the 1960 Convention for new ships, and those vessels which do not comply under Method I construction will be required to provide additional safeguards against fire. (Inter alia this envisaged that ships of both Methods II and III would be required to line escape routes with incombustible materials and provide 20 minute patrol of the vessel during the night).
2. The present Convention shall be further improved by the addition of two important provisions which shall apply to all ships, new and existing. These provisions are to ensure automatic closure of ventilation systems penetrating Main Vertical Zone Divisions and the remote closure from the Bridge or fire control station of fire doors in Main Vertical Zone Bulkheads and stairways.
3. All new passenger ships shall henceforth be constructed in accordance with Method I structural fire protection as described in the 1960 Convention, together with proposed amendments.
4. Due to the length of time which is required to bring Convention amendments into force, and because of the urgency of the problem, it is strongly recommended by the U.S. that I.M.C.O. pass a resolution, recommending all Governments voluntarily to apply the above Convention amendments prior to their actual formal adoption.

ACTION TAKEN

At its May meeting the M.S.C. divided the problem into 2 parts, existing ships and new ships. It asked the Fire Protection Sub-Committee to hold 3 special meetings to produce a single method of fire protection to apply to all ships instead of the existing 3 methods which it was felt were not equivalent. The proposed new method was to be ready for consideration at February meeting of the M.S.C. and subsequently at the next Regular Session of the Assembly in October 1967.

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For existing ships, the Fire Protection Sub-Committee examined all the 1948 Convention requirements to determine those which were of sufficient importance to be studied by the M.S.C.

After ten days of intensive study and discussions the Committee produced a new Part G for the 1960 S.O.L.A.S. Convention which was adopted with slight amendment by an Extra-Ordinary Assembly in November 1966. Because of the important nature of the amendments, Governments were invited to take action to put the provisions of Part G into effect immediately without waiting for them to come into force.

Member Governments are now considering the Part G with a view to its adoption.

For new ships, the Fire Protection Sub-Committee had three meetings in July, September and December, of 1966 and produced a new part H to the 1960 S.O.L.A.S. Convention which will cover new ships. This is to be considered by the M.S.C. at their meeting on Feb 27th 1967 and by its Assembly in October 1967. If adopted it will then be circulated to Member Governments for acceptance.

EXISTING SHIP PROPOSALS.

For the purposes of application of this part, existing ships are divided into 3 categories,

(1) those whose keels were laid before 19th November, 1952,

(2) those whose keels were laid on or after 19th November 1952 but before 26th May 1965, and

(3) those whose keels were laid on or after 26th May 1965.

While it is not possible to reproduce all the requirements in this short note, the main features are summarised below.

The structure should be of steel or other suitable material but isolated deckhouses not containing accommodation and weather decks may be of wood if fire protected.

Special attention is to be given to the division of the accommodation from machinery, cargo and service spaces. The fire protection of the accommodation spaces is to be treated according to the basic method being followed and appropriate provisions for each of the three methods are outlined.

Of primary importance are means of escape and detection of any fire in its incipient stages. Accordingly the fire protection of lifts, stairways and control stations has been extended in conjunction with control of engine rooms windows and skylights.

Ventilation systems, galley exhausts and fuel pump remote controls have been given special consideration along with fire detection and extinguishing equipment, emergency power, fire patrols and communication systems between the ship's officers and the crew and passengers.

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The maintenance of emergency alarm and communication systems in spite of fire in high risk spaces such as galleys and machinery spaces is considered important, as has been the prevention of passage of fire from one vertical zone to another via ventilation ducts.

The specification of fire doors has also been reviewed, again with the aim of isolation of a fire within its zone of origin.

The fireman's outfit has been substantially upgraded to include a better description of requirements and also to correct omissions in the original, e.g., no mention was made of the need for the fireman to wear protective clothing.

NEW SHIP PROPOSALS

The most significant feature is that there are now three types of bulkhead only to be used throughout the accommodation, namely "A", "B" and "C" class Divisions. These are all to be constructed of approved incombustible materials and types "A" and "B" have fire ratings but "C" class divisions have no fire rating specified, the only requirement being that they should be constructed of approved incombustible materials.

The basic principles underlying the new scheme of fire protection are :

(1) the division of the ship into main vertical zones by thermal and structural boundaries,
(2) the separation of accommodation spaces from the remainder of the ship by thermal and structural boundaries,
(3) restricted use of combustible materials,
(4) detection of any fire in the zone of origin,
(5) containment and extinction of any fire in the space of origin,
(6) protection of means of escape or access for firefighting,
(7) ready availability of fire fighting appliances.

The hull superstructure and deckhouses are to be divided into main vertical zones by "A" class bulkheads and further divided by similar bulkheads and decks forming the boundaries protecting spaces which provide vertical access to the boundaries of machinery spaces and the boundaries separating the accommodation spaces from the cargo and service spaces and others.

In addition and supplementary to the patrol and alarm systems, a system of bulkheads of "A", "B" or "C" types, as specified in four tables shall be adopted in accommodation and service spaces with a view to preventing the spread of an incipient fire from the space of origin.

These tables are similar to those which have been in use by the U.S. Coast Guard for some years. All spaces in the ship are assigned to one of fourteen categories of space and the insulation value of the six divisions which separate any space from the spaces adjoining it may be established by reference to the appropriate table.

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Because the principle of fire protection has been approached in much greater detail than in the part, a number of new definitions have become necessary, some existing definitions have been reviewed and amended.

The use of aluminium alloy has been given special consideration as has been the problem of the boundary integrity of corridors and escape routes stairways and lifts.

Maintenance of integrity of divisions in way of openings for doors, cable trays pipes etc. has been given detailed consideration, as have ventilation systems, windows and side scuttles.

Precise restrictions on the use of combustible materials have been incorporated.

Where a sprinkler system is installed some relaxation in insulation requirements is made between some spaces,but in any case, an automatic fire detection and alarm system is compulsory.

Provision has been made for carriage of motor vehicles with petrol in their tanks in vehicle decks and hold spaces below the vehicle deck. Such spaces are termed special category spaces and where normal vertical zoning is not practicable, a system of horizontal zoning is applied.

Provision of fire fighting equipment, and fire patrols is extensively covered with detailed requirements being supplied.

Provision is made for use of higher pressures in sprinkler systems (found by Danish full scale tests to be very effective) fixed gas, fixed froth, fixed high expansion froth and fixed pressure water sprays. Details specifications are provided for automatic sprinkler and fire detection systems.

Some amendments are also proposed to existing regulations. These include the requirement that a fire alarm is immediately received by a responsible member of the crew, numbers of fireman's outfits and personal equipment, fire control plans.

Muster lists and emergency procedures are covered in some detail.

Recommendations are appended to cover the specification on fixed fire extinguishing systems for special category spaces, and crew training. To assist this latter question, an I.M.C.O. Fire Fighting Manual will be prepared.

This manual will be in two parts, the general chemistry, physics and engineering of fires and firefighting in the first part, and items of particular application to the ship in question in the other.

CONCLUSION

To date the record of Australian passenger shipping regard to fires is very good. It is to be hoped that the adoption of these improvements will make the possibility of a fire even more remote.

SOME PROPOSED ADMENDMENTS TO THE 1960 S.O.L.A.S. CONVENTION.

By Mr. R.J. Herd, M.R.I.N.A.

22nd February, 1967.

D I S C U S S I O N.

Capt. Bell: R.A.N.
If any of the members present would like to ask Mr. Herd any question, I am sure he would be prepared to answer them.

Mr. Trivett: Hon.Secretary.
One further point, Mr. President, if any member has any written discussion and would like to forward it in, in a reasonable time before I send the transcript to Mr. Herd, he would be only too pleased to provide answers.

Mr. Asquith: Navy.
First of all I would like to say I fully support the R.I.N.A. in having a voice in these types of activity. We should at least be heard in these matters and I would like to address a couple of questions to the Author. First of all, has the 1960 S.O.L.A.S. been ratified by the Australian Government?

Mr. Herd:
No, not as yet.

Mr. Asquith:
Secondly, we all know, no doubt, of the Shipping & Transport function and note that the 1960 S.O.L.A.S. Convention does not fully cover all aspects of Safety of Life at Sea. Improvements could take place in this and to what end is the Department of Shipping & Transport putting forward these views to the S.O.L.A.S. Convention? For instance, take the case of life jackets. S.O.L.A.S. lays down a 16½ lbs. buoyancy but we know that this is inadequate to support a man. Our recent experience locally with W.D. Atlas showed that it was totally inadequate and in fact, the British Ministry of Transport asks for 42 lbs. of buoyancy. That is one aspect; another is lifeboats: will we accept life rafts in lieu of lifeboats?

Mr. Herd:
The requirement for life rafts in lieu of lifeboats is in the 1960 Convention but only on a partial basis. Complete adoption of rafts will have to wait for some future convention before it comes into being.

Mr. Asquith:
Other aspects are things like tuna fishing vessels which are not adequately covered in my opinion.

Mr. Herd:
I.M.C.O. has put out a preliminary report on the stability of fishing vessels which the Department circulated to all State Government bodies that handle fishing vessels, but the I.M.C.O. Sub-division and Stability Committee, which is broken up into two or three different sections, is still trying to arrive at some acceptable uniform standards. This stability question is very difficult because, ideally, we would all like to get some nice basic criteria. For the wide range of ships that would have to be covered, to have one very broad criteria is very difficult because there are liable to be more exceptions than ships which conform to the rule. On the other hand, to produce an enormously detailed specification is also difficult. This is the aspect the Sub-Committee is tied up with at the moment. They have put out preliminary report on fishing vessels which we have sent to all the State bodies which are interested, because fishing vessels don't, as a rule, come under the Commonwealth Navigation Act, but under State legislation.

Mr. Asquith: Navy.
On the point of fire fighting, we in the Navy, have been using a lot of this M.P.L. lined asbestos board. Does this meet the A, B, C rating of the Department of Shipping & Transport and will it be used in passenger vessels?

Mr. Herd:
Who makes this M.P.L. and what is it?

Mr. Asquith:
Melamine Paper Laminate made by Formica.

Mr. Herd:
There has not been a fire test conducted in Australia on asbestos boards for marine use yet, and as far as I know, none of our local suppliers are at this stage prepared to undertake one.

Mr. Asquith:
There is a "Marinite" board out.

Mr. Herd:
Yes, there is a "Marinite" board but it has not been tested in Australia and it must be tested as a division. The values of it as a board are of little help because the S.O.L.A.S. requirements are for a division, that is, the board and its attachments. On the tests which I have attended here at the building station, it has generally been the attachments of the division that failed. I have not as yet attended a test on an asbestos board, as up to date, none of the manufacturers has submitted one for Departmental approval.

Capt. Bell: R.A.N.
To follow on Mr. Asquith's question, I don't know whether you are in a position to tell us the sort of difficulties which prevent the ratification of the 1960 Convention in this country.

Mr. Herd:
That is a Commonwealth Government problem. The regulations are well advanced. It is a question of order of government business. Of course, the same will apply with the 1966 Load Line Convention. Once Cabinet gives approval to make regulations long sessions with the Parliamentary Draftsmen are entailed. It is a long business and I must confess I did not realise what was really required until I became directly involved in producing legislation. It looks much easier than it is.

Capt. Bell:
Does this mean that in point of fact it is a matter of mechanics rather than policy which is holding it up?

Mr. Herd:
I am not in a position to say why the Convention has not been ratified yet, but certainly before this can be done, we must go through the mechanics of converting the Convention into Regulations. This involves a good deal of re-arrangement and give and take between the technical and the legal officers as to what is appropriate wording to use. It takes quite a while to get some of this ironed out and you have two or three attempts at trying to get something that is legally acceptable and still makes technical sense, as well as saying what the Convention says. Sometimes it is not always clear what precisely the Convention means. So far as the 1960 Convention is concerned, all of the technical representatives that Australia had there have retired since. It was quite an advantage at the last I.M.C.O. Assembly to meet up with one of the German lawyers who was at the 1960 Safety Convention and discover just precisely what the appropriate working committee did have in mind in regard to one problem which had been worrying me quite a lot.

Mr. R. Wynne: Nirimba.
We all know what a meance fire at sea is, so wouldn't it be possible for an

interim period before anything concrete is determined to grade ships so that the all unsuspecting passenger who want to undertake a cruise can know what he is going to undertake.

Mr. Herd:
Well, this is the general substance of recent American legislation; which is, in fact, that shipowners should include the standard of fire protection their ships comply with, in their advertising. This bill I understand, went through Congress in October but is being held in abeyance till 1969 I think it is, pending the adoption of the I.M.C.O.Amendments. If these don't come into force by 1969, I understand the United States proposes to put this legislation into effect. So far as our own local ships go they are fairly easily classified because of the fact that they are all recently built. Because of this brief time scale there is no great difficulty involved in putting the recent I.M.C.O. Fire Protection amendments into effect. In respect of the older ships (and there was one in port here yesterday which was built in 1924) there are a lot of problems because during the life of the ship, there have been, as a rule, a lot of alterations done to varying standards of fire protection and the result is confusing.

Capt. Bell: R.A.N.
I wonder if Lieutenant McQueen would care to thank our speaker of this evening.

Lieut. A. McQueen: R.A.N.
On behalf of the members present I would like to thank you for a very interesting discussion and a good lecture.

CARRIED UNANIMOUSLY BY ACCLAMATION.

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