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DECISIONS OF OTHER IMO BODIES

IMO Strategic Plan

Submitted by INTERTANKO

SUMMARY

Executive summary: The paper presents the views of INTERTANKO on high priority issues to be addressed when discussing the new building standards,

Action to be taken: Paragraph 5

Related documents: C 89/12/1, MSC 76/5/10, MSC 77/2/3 and MSC 77/2/4

1 INTERTANKO notes the papers by the Bahamas and Greece (C 89/12/1) and by Greece (MSC 76/5/10) regarding the quality of new ships. INTERTANKO also notes the paper from IACS (MSC 77/2/3), which, *inter alia*, states that neither of these documents from the Bahamas and Greece provide substantive background or documented evidence in support of the opinions given. We also note document MSC 77/2/4 and would fully agree with OCIMF's premise that more attention is needed for an uniform and consistent implementation of existing standards for newbuildings.

2 Being concerned with these developments, INTERTANKO would like to share with the Committee its own assessment of issues that need to be addressed and corrected. The annex* to this paper reflects tanker owners' experiences. INTERTANKO did not find that newbuildings are substandard ships but that their structure is lacking longevity and robustness. Improving this may mean higher newbuilding costs. This should not be a stumbling block for owners because any cost increase is not expected to be prohibitive, and since it would also apply across all of the industry it should not distort competition in the long term.

3 Classification Societies should find attractive any sensible proposals to improve standards. Better standards reflect positively on the societies' reputation. A single society cannot sustain on its own a consistent effort for raising standards, as it will be commercially penalized by the shipbuilding industry. IACS, on the other hand, has the power to enforce changes, if only its individual members can agree them and implement them.

* The annex to this submission is constructed around the paper: "Raising Newbuilding Standards: The Balance between Cost, Competition and Enhanced Safety", presented in Lloyd's List International Shipping Convention "Regulation of Global Shipping", London 17-18 October 2001, by Dr Nikos Mikelis, Director, Lyras Shipping Limited, U.K. & Chairman, INTERTANKO Technical, Safety & Environmental Committee

4 Shipyards should also take a positive stand to these discussions and, if their main concerns are to remain competitive and to avoid production disruptions, they can still succeed doing that while building better quality ships, because any new standards will apply to all shipyards and all ships.

Action requested of the Committee

5 The Committee is invited to consider aspects in this paper aimed to raise the minimum standards of new built ships, aimed to ensure trustworthiness on the quality of product shipyards deliver and on their commitment to follow the quality of their product for a certain period of time after delivery.

ANNEX

ITEMS RELATED TO NEW BUILDING ACTIVITY WHICH NEED CHANGES

1 INTERTANKO's Safety Technical & Environmental Committee (ISTEC) has devoted considerable time to the issue of newbuilding standards. A number of the participating members are currently, or have recently been, involved in newbuilding projects for a considerable number of tankers and in a number of shipyards. Based on its experiences, ISTEC agreed that a problem does indeed exist and that the concerns expressed by other industry bodies are valid. ISTEC devoted its deliberations on (a) identifying specific problem areas, and (b) on discussing possible ways of bringing about change. Some of the specific problem areas are discussed below.

Overall strength

2 The hull girder strength of ships is generally based on a 20-year design life. However, nowadays the average age of a tanker being scrapped is 25 years, and therefore a natural question arises as to why is the hull girder strength still based on such a low criterion, and whether the design bending moments need to be increased. Interestingly, a leading ship owner recently introduced for his new buildings a 50% increase in the design hogging and sagging bending moments.

3 In the event that the ship's design life was to be modified, the wave statistics' formulations are such that if a design life of 40 years were used instead, the maximum wave bending moment would increase by only 3.7%. Similarly, if a 60 year design was used the increase in the bending moment compared to the 20-year criterion would be just under 6%. In view of the percentages quoted above, it would appear that the assumed design life is not a real issue in terms of the design wave bending moment, although it is very much of a problem in terms of fatigue life and in terms of corrosion margins, as discussed below.

4 However, where a serious problem can arise is in the operational conditions (assumed by shipyards and accepted by class) on which the bending moments are based. For example for a double hull tanker, a critical condition arises in the long ballast voyage departure condition which (with ballast in the forepeak) produces a severe hogging bending moment. Shipyards often get around this "problem" by calculating this condition without ballast or sometimes with partial filling of the forepeak. In effect, this is a way of reducing the strength of the ship by restricting its operational capability. The same "technique" is employed to a larger extent in bulk carrier designs. It would therefore make great sense if loading/ballast/consumables conditions did cover realistic and critical conditions. It is not safe or desirable to leave this matter for negotiation between the owner (assuming that the owner realizes that this is a problem) and the yard, but instead class should demand that such conditions be catered for, as a matter of safety of life and property at sea. A fundamental question in this respect is "are today's tankers more operationally sensitive in terms of exceeding their ultimate strength than pre' SBT ships? From a layman's point of view the scenario where the "MT Energy Concentration" broke her back in Rotterdam must be more likely with today's ships, which have about the same section modulus, but have much lighter deck and bottom scantlings because of reduced Length to Depth proportions.

Fatigue

5 Until relatively recently fatigue was not examined analytically by classification societies as part of their plan approval procedures. Instead, in-service feedback to plan approval and good detailed design were the tools used to avoid fatigue problems. During the late 1980's there was a realization (from fatigue cracking of SBT tankers built during the mid eighties) that the experience gained during the 1970's from CBT tankers was not directly applicable to the SBT tankers and that first principle methods of assessing fatigue performance were necessary.

6 Classification societies thereafter introduced Fatigue Analyses. It has to be pointed out that fatigue analysis is more of an art than a science, and there are numerous parameters, which need adjusting against service experience and which therefore add technical spice in the politics of the yard-class-owner triangle. In particular, fatigue analysis, when performed under class rules (not a uniform requirement amongst IACS members) is usually based on a 20-year life, either for worldwide trading or for North Atlantic trading. Fatigue life is sensitive to the assumed design life (unlike with criteria for hull girder strength). A 30 year or even (safer for the ship) a 40 year fatigue life would naturally have been preferable. Also, the assumed trading area is another key parameter in working out the fatigue life of a ship, which again is not treated in a uniform manner by the IACS societies, who effectively leave this matter to the commercial negotiation between owner and yard.

Corrosion margins

7 Corrosion margin is the thickness of steel that can be sacrificed to corrosion without creating a strength problem to the structure. During the last years, IACS societies have been working towards a common procedure for the calculation of corrosion margins. Unfortunately, this effort by IACS does not yet address the adequacy, or otherwise, of corrosion margins. The rules of one of the leading societies stipulate corrosion margins that under normal trading would give approximately 10 years of thickness diminution (not 20 years as per the design life for ultimate strength). It is believed that some other societies use similar criteria. It should be noted that the above is based on average corrosion rates, and does not take into account the presence of coatings which would delay the onset of corrosion in the first place. Classification societies do point out that they offer increased corrosion additions (typically doubling the corrosion margins) through voluntary notations, but they find that only too few owners are willing to pay for the additional cost. This should not be very surprising, because: (a) the price charged for this extra steel is disproportional to its cost, and more importantly (b) very-very few owners are aware of the actual corrosion margins available to their ships even at the time of delivery. Corrosion margins are not shown on any of the main structural drawings and if an owner wishes to know what he is building he needs a strong newbuilding department who will have to check rule net thickness requirements against approved plans.

8 A concrete example received from an INTERTANKO endorses the statement above: On crucial plating (bulkhead, and deck) the original approved thickness is 12.5mm. The unsuspecting owner however receives a net thickness of 11.4mm, or a corrosion margin of 1.1mm (9.0% margin!), or around 0.8mm when accounting for the allowable rolling negative tolerances. In actual fact, the recent trend of charterers and port state authorities of not accepting ships with "substantial corrosion" areas (i.e. 75% consumption of the corrosion margin) finally means that the owner of this ship is left with 0.5mm before he is forced to renew these plates. Similarly, on strakes of the bulkhead plating between ballast tanks and (heated) cargo tanks of the same ship, the original thickness is 11.0mm, the net thickness is 10.0mm, i.e. a corrosion

margin of 1.0mm (9.0% margin!), or about 0.7mm after the negative tolerance, again leaving 0.5mm before renewals are necessary to avoid substantial corrosion. And this in the sensitive boundary of ballast to heated cargo in the double hull!

9 Economizing on effectively “low cost” newbuilding steel weight in this manner contradicts technical and economic logic. Corrosion margins should be increased across all tanker newbuildings to give a 25-year life. Also, both, transparency and common sense dictate that a suitable structural plan should identify net thickness and corrosion margins for the future benefit of owners, crews and surveyors, instead of the present practice of relying on generic tables of diminution percentages. In addition, the actual ‘as fitted’ thicknesses should be measured so as to enable corrosion rates be determined in the future.

First in a series

10 It may be possible for an owner to resolve some of the issues and problems raised in this paper at the contractual stage of a particular newbuilding (if of course the owner is aware of the relevant problems). If however the ship in question is not the first in a series, the chances of the yard obliging with modifications become more remote, because the yard has already set in motion its production lines. It would therefore be appropriate that special attention is paid by classification societies to the first ship in a series.

Negative tolerances

11 Classification societies have for a long time allowed negative tolerances for steel plates used in ship construction. Whereas in the past this may have been necessary, nowadays, most steel mills in principal ship construction areas produce plates of exact dimensions and thus the potential to take advantage of the negative tolerance, thereby reducing scantlings by the amount permitted for the plate thicknesses concerned; - the consequences being with regard to potential ship life and general hull robustness. INTERTANKO and OCIMF have requested IACS to change their rules to disallow this practice and to permit only positive tolerances.

Coatings in wet spaces

12 In recent times INTERTANKO has been alerted to corrosion problems in cargo tanks of relatively new double hull tankers. Industry meetings were set up and attended by practitioners and by corrosion experts, some further research was done and a guide was produced for owners. In essence it was proposed that owners who are contemplating newbuildings should consider coating the cargo tanks, either top and bottom, or coating the complete tanks. Owners reported that yards are reluctant to apply coatings to cargo tanks and therefore tend to quote exorbitant prices so as to discourage these optional coatings. INTERTANKO and OCIMF have taken the subject up with classification societies requesting that they mandate cargo tanks’ coatings. The societies sympathized to some degree with this request, but it seems that they have some commercial problems with this issue.

13 Looking back at the experience of mandatory coatings for ballast tanks, we should note that, as yet, there are no mandatory standards for surface preparation, no mandatory standards for application, no mandatory standards for the coating systems applied (number of coats and stripe coats, dry film thicknesses). Interestingly, leading societies have already published approved coating systems, but none of these have been made mandatory. As a result, shipyards end up providing a single 200micron coat with all the rest being quoted as extras. This means that the mandated ballast coating may have a life of as little as 3 to 5 years.

14 It is INTERTANKO's view that Class Societies should be involved in the field of coatings (i.e. mandate a sensible coating system even without becoming involved in inspections of the coating application). Even if traditionally this was not a Class activity, there is nothing stopping the societies from acquiring this expertise. In the meantime it is worth noting that the Tanker Structures Cooperative Forum (TSCF), which has amongst its membership some leading classification societies, has recently published coating guidelines for 10, 15 and 20-year systems.

Class surveying under construction

15 Some 10 to 15 years ago newbuildings were a profitable part of the classification business due to the concentrated nature of the usage of resources and due to sizeable fees. Currently, classification fees for newbuildings are down, typically to levels of \$250,000 to \$300,000, but with some recent examples of \$180,000. As a rule, owners try to obtain the commitment of the classing society to involve the services of an expatriate surveyor so as to avoid peer pressure. A Western expatriate's salary may be of the order of \$7,000 to \$9,000, with extra costs for schooling, travelling to home, and benefits. Involving such a surveyor 100% of his time for 6 months and for 50% of his time for 4 months for a newbuilding would lead to a cost closely approaching \$100,000. This leaves little from the fees to cover the cost of office, lighting, marketing, travel, secretaries, pens and paper. Not to mention plan approval which involves a multitude of people at the Head Office for a period of 6 to 8 months.

16 Classification societies, naturally, compete for newbuilding market share. Also naturally, but unfortunately, this has two immediate consequences (a) to drive down the classification society's fees for newbuildings; and (b) consequently to minimise the supervision and involvement from class. In this way, newbuildings receive less attention from the attending surveyor than they should.

17 Some initial ideas on how to progress beyond this stumbling block are:

- .1 classification societies to agree amongst themselves in IACS not to give in to yard's pressure to reduce their fees;
- .2 classification societies to publish openly their newbuilding fee scales and to undertake, maybe as a condition of IACS membership, to disclose any discounts given to yards;
- .3 have the owner pay directly the newbuilding classification fees;
- .4 consider whether the flag State could pay (by proxy) the newbuilding classification fees; and
- .5 use a combination of the above (e.g. class is contracted and paid for the newbuilding in a tripartite agreement involving the owner and maybe either of the yard or the flag State).

18 As a further suggestion on this particular issue is to apply the principles of the Enhanced Surveys during the design and construction phases.

Owner's supervision

19 Because presently the newbuilding supervision by class does not always appear to ensure sufficient and competent manpower for the job, prudent owners are obliged to invest extra effort in their own supervision, with the result that they may employ, as a minimum, a team of one hull, one machinery, one electrical and one paint inspector. A budget of half a million US dollars is not untypical. Contrast this with the level of supervision and the potential implications on the newbuilding quality of ships where the owner simply employs one retired master and one retired chief engineer. Matters can become more complicated by some shipyards who contractually restrict owner's supervision by limiting the number of owner's inspectors. In view of the already limited class surveying, this is an area meriting particular attention.

Surveying of sub-contractors' works

20 As more and more work is contracted by shipyards to sub-contractors, the more difficult it becomes to inspect their work thoroughly. If the owner wishes to ensure quality, he frequently has little option but to take on a greater share of this supervision.

Selection of class

21 Shipyards often have preferences as to which classification societies they work with, either for national reasons, or because they may have smooth working relations with a certain classification society, or because a classification society has already approved a design and the yard wants to keep the same society throughout the series, or because of a perception that certain other classification societies are too demanding to the yard on rules and/or on supervision. Yards, therefore, may, and often do, demand a higher newbuilding price if the ship is to be built under the classification society of the owner's choice. One recent example is of a \$300,000 increase in the price of a Suezmax, for switching from the yard's to the owner's preferred class. It is believed that owners should have the unhindered choice of class, although it is questionable whether such a free choice could ever be legislated for. Understandably owners will wish to be especially careful with yards that insist on building only to one classification society's rules.

Yard-class correspondence

22 There are unforeseen matters arising and decisions taken during plan approval and construction. If for example the yard has no easy access to profiles of the exact dimensions as per the approved plans, it might well seek the permission of the classification society to use the next lighter size. Such requests, communications and approvals often take place as correspondence between yard and class, which more often than not is not copied to the owner. This "confidentiality" between yard and class raises many practical and ethical questions.

23 It is worth noting that some owners manage, by a suitable contractual clause, to have access to the yard-class correspondence. However this selective transparency is not satisfactory for a "level playing field" industry. When speaking to individual classification societies we are told that they would very much prefer it if this restriction did not exist, but it is not in their power to do anything about it since it is a contractual matter between owner and yard. Owners who have sought to change this practice say that it, unfortunately, suits classification societies by avoiding the friction that would result if owners knew some of the decisions taken for their newbuilding.

24 At a time that the industry has started embracing transparency, this restrictive and unacceptable practice should be removed. In this, classification societies could play a role on this

by agreeing in IACS to make mandatory the transparency of the yard-class correspondence to the owner, by enforcing it through the IACS Code of Ethics.

Guarantee

25 A newbuilding today will be given a one year guarantee as a norm, although some owners manage to obtain longer guarantees. INTERTANKO believes that guarantees should extend up to the first special survey for all newbuilding tankers. This will act as a catalyst in motivating yards to build to higher standards.

Operational matters

26 There are many issues which arise and choices which are made at the newbuilding stage affecting the operational efficiency and quality of the ship throughout its life. Paying attention to this plethora of matters at the contractual and construction stages of the newbuilding is obviously important. ISTECH has, therefore, decided to try and address such issues in a publication it is preparing (provisionally entitled: "INTERTANKO Awareness Guide for Owners Building Tankers").
