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INTERNATIONAL CONFERENCE ON
TONNAGE MEASUREMENT, 1969

Technical Committee

PROVISIONAL SUMMARY RECORD OF THE EIGHTEENTH MEETING

held at Church House, Westminster, London, S.W.1,
on Wednesday, 11 June 1969, at 2.40 p.m.

Chairman: Mr. F. SPINELLI (Italy)

Secretary: Mr. Y. SASAMURA

A list of participants is given in TM/CONF/INF.1/Rev.1

N.B. Corrections to be incorporated in the final summary record of the meeting should be submitted in writing (two copies in French or English), preferably on the provisional summary record, to the Documents Officer, Committee Room 2 and after the Conference to the IMCO Secretariat, 22 Berners Street, London, W.1, not later than 8 July 1969.

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AGENDA ITEM 4 - CONSIDERATION AND PREPARATION OF PROPOSED TECHNICAL REGULATIONS ON TONNAGE MEASUREMENT AND TONNAGE CERTIFICATES (TM/CONF/6 and Corr.1 and Add.1; TM/CONF/C.2/WP.22; TM/CONF/C.2/WP.27) (continued)

The CHAIRMAN invited the Committee to continue its consideration of the first draft of regulations for determining gross and net tonnages of ships (TM/CONF/C.2/WP.22).

Regulation 6(1)

Mr. CHRISTIANSEN (Norway) pointed out that since, for ships other than those with metal plating, volumes and displacement included in the calculation of gross and net tonnages should be measured to the outer surface of plating, presumably the wooden planking would have to be included for wooden ships - of which Norway built large numbers.

Mr. SASAMURA (Committee Secretary) said that the wording had been taken from regulation 34 of the International Load Line Convention, 1966.

Mr. WILSON (UK) said that from his own experience, which was chiefly with large ships and glass fibre ships, the lines plan was suited to the mould, and an ordinate deducted for thickness of material. That was more satisfactory than a system of corrections.

Mr. ERIKSSON (Sweden) said that the normal method in designing wooden ships was to take the lines plan to the outside and deduct the planking.

Mr. JONES (New Zealand) confirmed that the method described by the Swedish representative was the general practice for wooden ships and also for those made of such materials as fibreglass.

Mr. NOZIGLIA (Argentina) pointed out that the words "may be excluded" in paragraph (3) would make it possible in the case of wooden ships, where the line was taken to the outside of the hull, for spaces such as open wells in dredgers to be included in the total volume and displacement. That would be disadvantageous.

Mr. ROCQUEMONT (France) agreed with the representative of Argentina. The wording of the Convention should be mandatory in order to ensure uniformity of measurement by the ratifying States. Otherwise ships of identical types might have different measurements in different countries.

Mr. SOLDA (Italy) suggested that the difficulty might be resolved if the volume to be taken into consideration were the ship's weight divided by the specific weight of seawater.

The CHAIRMAN said that there seemed to be no difference of opinion on the principle of the matter. He had understood at the previous meeting that the word "may" was to be retained in order to avoid complicating the calculation by detailing items whose weight was relatively insignificant.

Mr. KING (Kuwait) said that it would be better to keep the word "may". Substitution of the word "shall" would make it compulsory to list all the relevant items.

Mr. CHRISTIANSEN (Norway) proposed simplifying both paragraphs as follows: "(2) Volumes of appendages shall be included in the total volume and displacement;" and "(3) Volumes of spaces open to the sea may be excluded from the total volume and displacement."

Mr. GRUNER (Finland) supported the proposal. He also favoured retention of the word "may", since items such as sea chests would be of some significance for small ships.

Mr. GANTIOQUI (Philippines) said that he agreed with the Norwegian representative.

The CHAIRMAN asked if the Committee agreed that the word "may" in paragraph (3) should be retained and that paragraphs (2) and (3) should be amended in accordance with the Norwegian representative's proposal.

It was so agreed.

Regulation 7

Mr. CABARIBERE (France), referring in particular to paragraph (2), said that the methods of calculation should be set out in detail, so that there would be freedom of choice. He drew attention to the French proposals in documents TM/CONF/4, 5 and 6.

Mr. CHRISTIANSEN (Norway) supported the views of the French representative.

Mr. RUSSEL (South Africa) said that he, too, agreed with the French representative. The regulation in its present form would be unacceptable to the legal authorities in his country.

Mr. MUNTZ (Netherlands) said that he was opposed to over-detailed provisions, since there might be a variety of computor programmes or working practices among naval architects or shipyards. The most that could be done would be to stipulate a minimum number of cross-sections or of water lines from which displacement should be calculated.

Mr. WILSON (UK) agreed with the previous speaker. The UK authorities had devoted much time and thought to the standard methods for obtaining displacement or internal volume proposed

by France and the USSR and would have been ready to accept the latter, based on their standard method for hydrostatic calculation, if it had stated that other systems would be acceptable if they gave a result within a stated percentage of that obtained with the proposed method. Unfortunately, tests in the United Kingdom had shown differences of as much as 1½ per cent from the USSR proposal.

His delegation hoped that the Conference would produce a simple system which would abolish much of the drudgery of existing tonnage measurement.

There was no need, for example, to measure the underdeck by a separate method: the displacement given by builders was universally accepted without question because their methods produced results that varied very little. The Committee should pursue its efforts to find an acceptable method of calculating displacement which could be applied for tonnage purposes.

The CHAIRMAN said that there were three possibilities arising out of the discussions: to keep the regulation as it was; to adopt the French proposal; or a mid-way course, to set down a minimum number of ordinates.

Mr. HELLMAN (Sweden) supported the United Kingdom proposal. Moreover, it was important to include a method applicable to existing ships.

The CHAIRMAN invited the Committee to vote on Regulation 7(2) as drafted.

The Committee decided by 27 votes to 3 to retain Regulation 7(2) unchanged.

The CHAIRMAN invited the Committee to consider the texts submitted by the drafting group in document TM/CONF/C.2/WP.27.

Regulation 2(2) - Moulded Depth

Mr. ROCQUEMONT (France) said that he understood that the document was based on a proposal by the United Kingdom delegation and had not yet been agreed by the drafting group. He suggested that it should be referred back to the drafting group before being discussed by the Committee.

The CHAIRMAN said that the Committee would first have to discuss the question of water ballast space raised at the previous meeting.

Mr. WILSON (UK) said that, as a member of the only delegation present at the draft group meeting, he had spent a long time drafting the document. He would be reluctant to attend another meeting to go through the process again.

The CHAIRMAN suggested that the Committee should endeavour to reach a decision on the present paper, in order to be ready for the report of the Working Group which its Chairman was expected to present very shortly.

Mr. ROSELL (Denmark), referring to the words "midship section" in the fifth line of paragraph (a), pointed out that there was no fixed definition of midship. A more precise indication was needed.

The CHAIRMAN recalled that the Committee had decided, at an early stage of its work, that the regulation should apply to ships less than 24 metres in length, which conformed with the provisions of the Load Line Convention. It could be made clear in the regulation that "midship" was half the length in question.

Mr. LEIBENFROST (Yugoslavia) suggested that in the light of Regulation 4(3)(v) (page 9 of TM/CONF/C.2/WP.22), all that was required in the present regulation was moulded draught amidships.

The CHAIRMAN accordingly proposed inserting the word "amidships" after the word "measured" in the first line.

Mr. GUPTA (India) suggested that the length should be defined as in the Load Line Convention and that the drafting group should be instructed to incorporate the relevant wording so that the new Convention would be self-contained.

Mr. ROSELL (Denmark) said that there were two possibilities: to take the draft amidships according to the length in Regulation 4 - as in the Load Line Convention - or as the midship of the tonnage length. There had to be a length for calculating the underdeck tonnage. He supported the Indian representative's suggestion.

Mr. BECKWITH (Liberia) said that he thought the definition of moulded depth could be taken at any position on the ship, in accordance with the Load Line Convention. Hence for the measurement of underdeck tonnage the depth could be at various stations along the length of the ship to the underside.

Mr. RUSSEL (South Africa) agreed with the previous speaker. He also suggested that the word "is" should be replaced by the words "shall be"; otherwise the regulation would be merely an explanation.

The CHAIRMAN pointed out that the indicative tense was customarily used in definitions (of the Load Line Convention). The Liberian representative's point seemed to be that the insertion of the word "amidships" was unnecessary, because where the depth was required for a draught at which to calculate displacement, Regulation 4(3)(v) would apply and there was no need to repeat it. Moreover, if the word "depth" were used elsewhere in the Convention, it would not be depth amidships. Consequently it would be better not to insert the word "amidships".

After further discussion, he proposed that the wording be left as it stood, on the understanding that the definition of "midship" he had suggested earlier would be inserted in an appropriate regulation.

It was so agreed.

Regulation 2(5) - Passenger Spaces

Mr. ROCQUEMONT (France) said he endorsed the definition in substance. From the drafting standpoint, however, it would be advisable to insert the words "inter alia" before the word "passageways", in the second sentence, since otherwise the list of examples cited might be open to restrictive interpretation.

It was so agreed.

Mr. GUPTA (India) said it was not plain from the wording whether baggage rooms, storerooms, etc., were excluded in addition to crew accommodation situated within passenger spaces.

The CHAIRMAN suggested that the point might be met by an amendment on the following lines: "except that crew accommodation ... and mail rooms are excluded".

It was so agreed.

Mr. GRUNER (Finland) thought it would be more practicable simply to take into account the passenger accommodation part of the ship as a whole, irrespective of whether crew members servicing passengers were accommodated therein; the difference in result would be insignificant.

Mr. WILSON (UK) explained that, in drafting the definition the drafting group had been guided by the definition of passenger spaces given in the SOLAS Convention of 1960, and had also endeavoured to strike a balance between the divergent trends of opinion in the Committee by following a middle course.

There was therefore a case for maintaining the definition as it stood, the more so as the passenger accommodation part of the ship might well take in sizeable crew accommodation that ought to be excluded.

Mr. CABARIBERE (France), reverting to a point he had raised the previous day, proposed that the following phrase be added at the end of the definition: "on ships carrying less than twelve passengers".

Mr. GUPTA (India) said he shared the fears underlying that proposal, for the definition as it stood might open the way to abuses, particularly in the case of the large passenger ships.

Mr. WILSON (UK) thought there was some confusion as to the purpose of the definition. The underlying intention was to restrict within limits the amount of passenger space to be added to tonnage, but the last two speakers were in fact advocating a higher amount than was generally desired. The drafting group had been concerned to differentiate between ships' officers using passenger space for meals and the remainder of the crew using separate messrooms. The last phase of the definition, as it stood, would seem to cover that point.

The amendment proposed by France was rejected.

The text of Regulation 2(5) was approved without change.

Progress report of the Working Group on Gross and Net Tonnage

Mr. ERIKSSON (Sweden), Chairman of the Working Group, introducing part II of the Group's progress report (TM/CONF/C.2/WP.19/Add.1), said that after the preliminary report given at the fifteenth meeting he would keep his comments brief.

The computer exercises done on certain displacement formulae were dealt with in paragraph 9. Due to the lack of data on water ballast spaces, the exercise had been carried out using the water ballast deduction of the IMCO and United Kingdom data corrected to total amount of water ballast using the ratio between total and deducted amount calculated for certain Japanese and British ships. Passenger ships had been excluded. The results obtained in respect of the two formulae, $NT = A\nabla$ and $NT = \nabla (A + B \log_{10}\nabla)$, were to be found in Annex III to the report.

The Working Group had discussed the need for a lower limit of net tonnage to cover the class exemplified by the ore carrier, where the amount of water ballast could be of the order of 60 to 80 per cent and had agreed to recommend that 0.3 GT be adopted as the lower limit.

With regard to passenger ships, the value $1 + \frac{\nabla}{10,000}$ was tentatively suggested for the coefficient in the passenger term. The results of the computer exercise on that class of ship were shown in Annex V, together with a note of the standard deviation found; and annex VI contained additional results for the same ships as separated into two groups by size (above and below 2,000 tons GT).

As to the further work done since the preparation of the report, the Working Group had considered the results of computer exercises on the three formulae:

$$NT = AV_G$$

$$NT = A(\nabla - WB)$$

$$NT = A(0.1 + 0.02 \log_{10}\nabla)(\nabla + WB)$$

and also of exercises where the same ships were divided into types. The total IMCO fleet had been taken into account, with the exception of passenger ships of all types, refrigerated cargo ships and open shelter-deck ships.

Thereafter, it had been decided, in order to provide an objective comparison of the results obtained, to carry out a computer exercise taking displacement and/or volumetric concepts into account.

The results of the two exercises using the formula NT = A(0.16 + 0.032 log)(- WB) were set out on the left-hand blackboard in three columns, relating to total fleet, ships below 2,000 GT and ships above 2,000 GT respectively, with a note of the standard deviation found. On the right-hand blackboard, the results using the formula NT = 0.288 V_g were given in similar fashion. It had been assumed that the reported cargo space volume was representative for the ships in question. The two tables showed that a smaller standard deviation was obtained under the second formula.

Members of the Working Group would be ready to answer any questions on the findings.

Mr. ROCQUEMONT (France) noted that the data used by the Working Group in its most recent calculations did not include open shelterdeckers, whereas one of the essential decisions of the Conference had been to retain that concept for future vessels; any formula arrived at could thus not be seriously considered until it took account of the open shelterdecker ships.

Mr. ERIKSSON (Sweden), Chairman of the Working Group, said that so far the Working Group had very little information available on the open shelterdecker ships, but the Norwegian delegation was currently working on a formula to cover ships with reduced freeboard, using the gross and net tonnage data for all convertible ships from the IMCO fleet, for the same number from the United Kingdom fleet and for thirty-eight such ships from the Swedish fleet. It would therefore be helpful if other countries provided information about their convertible ships for inclusion in the calculations.

Mr. BØRSUM (Norway), in answer to the French delegation, explained that the original Norwegian proposal included a factor correcting the net tonnage calculation for any full scantling ship, so as to retain the open shelter-deck concept. To make allowance subsequently for open shelterdeckers in that formula would result in an invalid comparison with ships which could not exist because they would have much too small a freeboard.

The CHAIRMAN asked whether the Working Group intended to apply the two formulae it was using to all ships, under both open and closed conditions.

Mr. BØRSUM (Norway) replied that the Working Group would carry out the exercise if the Committee so wished, but pointed out that, irrespective of which net tonnage formulae were finally decided on, the only relevant figures for comparison were the ratios of new draft, freeboard or displacement values, with the ratios of existing net tonnages based on national regulations.

The CHAIRMAN observed that it might be interesting to know which of the two new correction formulae were more sensitive to inclusion of the open shelterdecker case.

Mr. BØRSUM (Norway) noted that the relative reduction in the formulae would be the same for both.

Mr. PROHASKA (Denmark) explained that although it seemed at first sight that the first formula would give a greater ratio for the two types of shelter-deck condition than would the second, that was not necessarily the case since the square of the ratio, for instance, could be used instead.

Mr. ROCQUEMONT (France) thanked the Norwegian delegation for its clarification on the matter of the open shelterdeckers. He noted that it seemed sufficient to apply the formula with the ratio of the two displacements, i.e. the draft ratio or draft ratio squared, and asked what was the correction factor in that case.

Secondly, he noted that there were currently in the fleet a number of ships which were not open shelterdeckers but which yet had a freeboard substantially higher than the geometric freeboard, such as refrigerator ships. Those cargo vessels had not been included in the first stage of the calculations but it seemed essential that they be allowed for in the final formula.

He pointed out, furthermore, that the final choice of type of formula would influence future ship design; it seemed pointless, therefore, to make elaborate comparisons between the two possible formulae based solely on the types and numbers of existing ships.

Mr. DE JONG (Netherlands) suggested that the Working Group should take the convertible ships from the sample of vessels and determine the ratio of net tonnage in the open position to net tonnage in the closed position, then compare that with the ratios of the respective displacements, draughts and freeboards.

Mr. ERIKSSON (Sweden), Chairman of the Working Group, went on to explain that the Group had done an additional comparative exercise using the same formulae as before and dividing the fleet into the same types. The results of that exercise

showed that most types would have lower standard deviations on the second (cargo volume) formula; both types of carrier vessel would, however, have substantial standard deviations because of the great variation in national regulations relating to them.

He further noted that although it had been proposed in the Working Group to discuss the merits of the two correction formulae in arriving at the final net tonnage figure, such a matter should really be left to the Technical Committee as a whole.

Professor PROHASKA (Denmark) explained that both exercises carried out by the Working Group had been based on certain assumptions.

For the first formula, containing the (∇ - WB) term, the IMCO data used did not include the volume of total water ballast but only the volume of water ballast deductible in accordance with existing regulations. Although those two values might, in fact, differ greatly, a constant ratio had been assumed for each vessel type.

For the second formula, containing the V_G term, the IMCO data included only the volume of cargo spaces below deck; the assumption was therefore a good approximation but not correct in all cases.

He suggested that delegations should check the formulae given for the ships in their own national fleets.

Mr. ERIKSSON (Sweden), Chairman of the Working Group, recalled that in the Group's earlier discussions on the passenger correction term, members' opinion had been divided. Some delegations had held that, since the Technical Committee had been instructed to arrive at new net tonnages which would be as close as possible to existing values, the more accurate correction for passenger space volume should be employed, whereas a majority had preferred the passenger number term only, in the interests of simplicity.

He noted that in TM/CONF/C.2/WP.21 the Danish delegation had proposed a formula containing a coefficient $B = (1 + \sqrt{} /10,000)$ for use if the passenger number concept were adopted, and after further discussion in the Technical Committee another suggestion had been made in TM/CONF/C.2/WP.30 for $B_1 = (3 + \sqrt{} /5,000)$. Straight-line graphs had been attached to both those working papers, drawn in such a way that most passenger ships were above the line; it was for the Committee to decide whether the mean line for all ships would be preferable.

Professor PROMASKA (Denmark) noted that the net tonnage results obtained using the formula proposed in TM/CONF/C.2/WP.21, given in TM/CONF/C.2/WP.19/Add.1, differed substantially from existing net tonnage values for passenger ships. It had been assumed that no passenger ship should get a higher net tonnage than before, but in practice there were three exceptions to that rule; i.e. a Soviet ship, the net tonnage of which would be increased by 2½%, and two United States ships, with increases of between thirteen and thirteen and a half percent. The same procedure would also be followed for the formula contained in TM/CONF/C.2/WP.30.

He pointed out that in the latest exercises, the cargo space formula used for ferries did not include the space occupied by cars or train coaches, because although those spaces were technically cargo spaces their inclusion would give a very large increase in net tonnage.

Mr. SASAMURA (Committee Secretary) reported that in accordance with TM/CONF/C.2/WP.31, paragraph 2, he had contacted the Chairman of the General Committee on the matter of change in

net tonnage. The latter had suggested that the type of provision proposed in Regulation 5 of TM/CONF/C.2/WP.31 would be better contained wholly or partially in an Annex to the final regulations, since it was of a more administrative nature.

The meeting rose at 5.30 p.m.