



## IMCO

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INTERNATIONAL CONFERENCE ON  
TONNAGE MEASUREMENT, 1969

Technical Committee

### PROVISIONAL SUMMARY RECORD OF THE SEVENTH MEETING

held at Church House, Westminster, London, S.W.1,  
on Wednesday, 4 June 1969, at 9.40 a.m.

Chairman: Mr. F. SPINELLI (Italy)

Secretary: Mr. Y. SASAMURA

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

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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 3 - CONSIDERATION OF MATTERS AS INSTRUCTED BY  
THE CONFERENCE (continued) (TM/CONF/WP.3;  
TM/CONF/6; TM/CONF/9/Add.1; TM/CONF/C.2/WP.9)

Calculation of gross tonnage (continued)

Mr. CHRISTIANSEN (Norway) explained that his delegation's modified proposal, published as TM/CONF/C.2/WP.9, aimed at accommodating many of the suggestions put forward by equating the gross tonnage of a ship to the total volume of its enclosed spaces less the volume of certain enclosed spaces for crew, navigational and safety purposes, the latter to be carefully defined.

The tonnage thus arrived at would be multiplied by a coefficient so as to give a figure as close as possible to existing tonnage measurements, as was the intention, too, in the rival Proposal C.

Mr. DE JONG (Netherlands) stated that in principle his delegation was in favour of the new Norwegian Proposal.

Mr. CUNNINGHAM (USA) considered that the Norwegian Proposal represented an important compromise which would relieve any pressure on shipowners to provide insufficient crew space and on port authorities to abandon the concept of net tonnage. His delegation strongly endorsed the proposal.

Mr. PROHASKA (Denmark) said that his delegation preferred the Norwegian Proposal to Proposal C but felt that the list of deductible spaces would require lengthy discussion; such problems as the definition of heating and ventilation spaces for crew purposes on passenger ships were bound to arise.

He foresaw another difficulty in the case of small ships, of which there were many in service all over the world. It had been generally agreed that the new tonnage system should in no

way influence ship design but small ships, which usually had a comparatively high volume and a freeboard or tonnage mark on a second deck, would find the concept of gross tonnage dependent on total volume uneconomical and shipowners would revert to the practice of building ships with one deck only, thereby making them considerably less safe. Since small ships already had an accident rate of ten times the average the matter had to be given serious consideration before a final decision could be taken.

Yet another problematic issue was that of container ships of the future, which would have minimum freeboard and very little gross tonnage, since no additional term had yet been proposed to cover deck cargo; some such factor as 0.6 times total deck cargo volume would perhaps be suitable.

The CHAIRMAN observed that while the Technical Committee could recommend to port authorities that deck cargo be taken into account in the calculation of harbour dues, it was not in a position to insist that stipulations regarding deck cargo be included in the tonnage certificate.

Mr. PROHASKA (Denmark) pointed out that an owner whose ships were likely to carry deck cargo at any time could be required to make statements to that effect, so that the information, together with the maximum permissible height etc. of such cargo, would figure in the tonnage certificate. Any owner illegally carrying deck cargo could then be fined in the same way as for instance an overloading offence.

Mr. ROCQUEMONT (France) observed that the Norwegian Proposal raised two main issues; namely the need for and nature of the proposed conversion factor, to which subject he would refer back later, and the definition of total volume and list of spaces for possible exemption. His immediate reaction

to the second issue was that while it was to be welcomed that such spaces were deductible regardless of their position in the ship, the principle of exemption nevertheless depended heavily on the definition of their nature and use. Any long and careful definition which might be provided would certainly be criticized for being too complex and contrary to the spirit of the Melbourne Resolution, which called for simplicity. Furthermore, although the total volume of a ship was a basic definition and one necessary in the provision of port services and so on, the gross tonnage as written into the certificate on the Norwegian Proposal would be independent of total volume.

For all these reasons the French delegation had decided to hold firmly to the concept of total volume without exemptions, as embodied in Proposal C.

Mr. PRIVALON (USSR) expressed his delegation's interest in the modified Norwegian Proposal, but cautioned that while it had the advantage of relieving any pressure on designers to cut down on essential crew space it nevertheless had the disadvantage of requiring many definitions and thus re-introducing the risk of subjective interpretations.

He went on to make a plea that the Committee should confine itself to finding a solution based on proposals already before it and refuse to consider totally new suggestions at the current stage of discussion.

Mr. WILSON (UK) congratulated the Norwegian delegation on its compromise solution but expressed his doubts regarding the proposed conversion factor and on the feasibility of finding acceptable definitions for all the exempt spaces.

Experience had shown that it was difficult to enumerate and define adequately all crew spaces, including such possibilities as spare cabins.

Furthermore, since the exempt spaces in question might amount to as much as five hundred gross tons, there was a real risk that the figure for gross tonnage reached on the Norwegian basis would give an erroneous idea of the actual total size of the ship.

Regarding the temptation to shipowners to provide insufficient crew space mentioned in connexion with Proposal C, he felt that the risk was very slight; owners usually went far beyond the requirements of existing national and international regulations and recognized the fact that crews would not be attracted to inadequate vessels. He therefore endorsed the views expressed by the delegations of France and the Soviet Union.

He furthermore pointed out that it was current United Kingdom port practice for all deck cargo spaces to be measured and included in the total cargo space of ships.

Mr. MUENCH (Israel) expressed his satisfaction that the choice of formula had been narrowed down to two versions and stated that, of those two his delegation preferred the use of gross total volume as a measure of gross tonnage, both because it was more representative of ship size and because it required far less definition than would any exempt spaces introduced. Furthermore, his delegation did not believe that a tonnage measurement regulation should attempt to influence shipowners on the matter of ship design; other regulations already took care of the seafarers' interest in that respect.

Mr. DE JONG (Netherlands) pointed out that for small ships under five hundred gross tons, in particular, such matters as the extent and arrangement of crew space could be very important. Any measures influencing shipowners to provide open passageways instead of closed passageways or to cut down on the number of staff on board would be most undesirable. Provided that adequate consideration was given to those matters, however, his delegation still believed that the advantages of the Norwegian Proposal outweighed the disadvantages.

Mr. SOLDA (Italy) said that his Government believed that the aim of the Convention should be to simplify existing regulations as far as possible; it therefore lent its support to Proposal C.

Mr. ROCQUEMONT (France) noted that on the basis of the Norwegian Proposal such anomalies as two ships of the same size being assigned very different gross tonnages could arise and recalled that in Plenary session the Conference had supported the concept that gross tonnage should be based on volume measurement.

On the subject of crew safety, he pointed out that the need to protect personnel working or walking on deck had been recognized in the 1966 Load Line Convention; if the Committee found that such protection was inadequate it could better deal with the matter by an amendment to that Convention, rather than by making stipulations in a tonnage definition.

Mr. WILSON (UK) observed that the Norwegian idea of including an ideal conversion factor in the gross tonnage formula so as to bring the figure obtained as close as possible to existing values, was a rather vain hope; the Proposal C concept of multiplying the total volume by 120 would give more realistic results. If the final figures obtained from the two proposals turned out to be closed, however, then Proposal C still had the great advantage of simplicity.

The CHAIRMAN pointed out that the conversion factor in neither case had to be a constant; it should rather be some function of the total volume such as a constant, plus a second constant multiplied by a logarithmic function of the volume.

Mr. ZAMBRANO (Venezuela) supported the idea that tonnage measurement should be based on total volume, as advocated by the representatives of France, Israel and Italy. It was used for gross tonnage in his own country's tonnage measurement rules; and it gave a precise indication of a ship's dimensions.

Mr. MÜNNICH (Federal Republic of Germany) said that the gross tonnage parameter should be as simple as possible and should indicate the size of a ship. That could best be achieved by using total volume. It was in accordance with the resolution of the International Association of Ports and Harbors (TM/CONF/12) and it would keep the number of definitions to a minimum. Although in practice the difference between the new and the existing gross volume should not be too great under the new Norwegian Proposal, trouble would be caused if too many definitions of the use of spaces were required.

Mr. KING (Kuwait) shared the concern expressed over the Norwegian Proposal. The system it provided for might open the way to manipulation by shipowners because, with factor (a), gross tonnage could be influenced by the addition of washrooms or other facilities. He also feared that if deductions or exemptions were permitted there was a danger of losing sight of the ship's real volumetric size.

Mr. PEREIRA (Brazil) said that his delegation supported the views of the Israeli representative. Gross tonnage should not influence a ship's design. In practice it would be difficult to apply gross tonnage depending on the nature and position of certain spaces. Gross tonnage, which should indicate the size of a ship, would provide a simple system and the desired uniformity.



Mr. GUPTA (India), while appreciating the Norwegian representative's effort as a compromise, said that the numerous exemptions embodied in his proposal would bring matters back to existing conditions. The purpose of the Conference was to devise a new and simple system for measuring tonnage. He supported the simple idea provided by Proposal C and the total volume concept. He agreed with the representatives of France and the United Kingdom on the question of a constant as factor: that could be discussed later. Whatever formula was devised for gross or net tonnage it should not limit the freedom of countries or shipowners to decide crew spaces as they wished. In principle, gross tonnage should be a volume measurement and should not be hampered by deductions.

Mr. NOZIGLIA (Argentina) also considered that the total volume should be used for tonnage measurement, chiefly because it would facilitate determination of a ship's tonnage. The alternative proposal, involving deductions for crew spaces, would give rise to difficulties of definition, because in many ships certain spaces were used by both crew and passengers.

Mr. BONN (Canada) agreed with the Brazilian representative that one of the important requirements for a new tonnage measurement system was that it should not influence design. That would be difficult to achieve unless deductions were very accurately defined. The total volume concept with factors as close as possible to existing ones was the simplest system. It would preclude the risk of manipulation and give the true size of a ship more consistently. He accordingly supported Proposal C.

Mr. DE JONG (Netherlands) said that since everyone was anxious that a tonnage measurement should not influence ship design; if the inclusion of crew spaces would influence design, they should be omitted.

Mr. HERD (Australia) said that he, too, was in favour of the total volumetric concept. On the question of the influence of crew spaces on design, he said that in Australia manning practice was based on agreement between the Unions and the shipowners, with the Government acting as referee. The numbers of crew were decided according to the workload and the crew accommodation regulations and standards were provided in accordance with conditions on most first-class passenger ships. Thus in Australia crew accommodation was provided for in the design on a basis other than the limitation of the ship's tonnage. That might have disadvantages for shipowners, but there would also be disadvantages under the volumetric system.

Mr. CUNNINGHAM (USA) maintained that the total volume concept would affect ship design. It had once been said that no one could invent a tonnage system that the naval architects could not defeat. If the total volume concept were adopted the naval architects would find a way of decreasing the volume. Proposal C might suit the port authorities but they were not the only interests to be considered.

Mr. ERICSSON (Sweden) said that he sympathized with the Norwegian representative in his wish to provide for crew space and accommodation. The idea should not be ruled out: it should be carefully considered to see if suitable definitions could be agreed on. He did not entirely agree with representatives who had said that tonnage should be independent of all other regulations such as safety, crew space and accommodation. The suggestion that the total volume concept would influence design might apply equally to the new Norwegian Proposal. If all crew spaces were deducted, there was no guarantee that safety regulations and crew spaces would be adequately provided for. There were disadvantages to both proposals, but they should both be studied and when the details involved in the Norwegian Proposal were known, it should be possible to decide which was better from all points of view.

Professor PROHASKA (Denmark) strongly supported the Swedish representative's comments. The new Tonnage Measurement Convention should not deal with safety, but at the same time it should not impede safety. Recent history had shown that open shelter-decks with tonnage openings were dangerous, especially to small ships, and it had been agreed to abolish them. Tonnage regulations had long conflicted with safety: there was no point in producing a new Convention which conflicted with safety. He did not agree with the USSR representative that the Committee should not discuss new points. The Committee was still dealing with gross tonnage, using volume as the main parameter, but there might be other aspects besides crew that should be considered. Both the proposals illustrated on the blackboard favoured ships with low freeboard and high deck cargo. Was that what the Conference wanted? Both conflicted with safety for both small and large ships.

The CHAIRMAN reminded the Committee that it would have to reach a decision on gross tonnage before starting to discuss net tonnage, otherwise there would be confusion. He hoped the Committee would be able to decide on a solution which would gain general support in the plenary meeting.

Professor PROHASKA (Denmark) suggested that, since it had been pointed out that coefficient "a" would be different in each of the two formulae, they should be renamed coefficient  $a_1$  and  $a_2$  respectively. Before ending the discussion, the Committee might consider other possibilities than a coefficient depending solely on volume. Although he had earlier stressed the importance of safety for small ships, in view of the lack of support, he withdrew his proposal for including an imaginary deck volume. The Danish shipowners were strongly opposed to the idea and there might be other more logical solutions. He had once during discussion on safety by Danish naval architects suggested that owners should not be penalized in tonnage for excess freeboard. There had recently been a growing trend for owners of small ships to choose shelterdeckers rather than single deckers with heavy deck loads, a choice which had greatly reduced casualties. He cautioned the Committee against favouring unsafe ships. The two deck ship would no longer be competitive and owners would prefer single deckers, which were less safe. He suggested that if a working party were set up to consider the two coefficients, it should be requested to consider the feasibility of including a term in one of them to take account of excess freeboard.

Mr. DOUGHERTY (Liberia) said that the main aim in considering the two formulae was to avoid undue influence on crew space. For the purposes of bigger and better crew quarters, the formula  $GT = a (V-c)$  was the one which his delegation would support.

Mr. GUPTA (India) suggested that a solution might be reached if some means were found of ensuring that the crew spaces would not be affected by the formula adopted. He wondered whether some incentive could be offered to shipbuilders, to encourage them to provide improved crew spaces, for example, by giving them some tonnage advantage.

Captain FOTIADES (Greece) agreed with the United States representative. He added that the general feeling seemed to be in favour of a calculation which would produce numbers as close as possible to the existing ones. He suggested that there should be some differentiation in the factors for different types of ship, on the lines suggested by the USSR.

Mr. DOUGHERTY (Liberia) said that he was not in favour of the Indian representative's suggestion because it would impose a limit on the size of crew space.

Mr. ROCQUEMONT (France) said that the type of convention which would attract the greatest number of ratifications by governments should be as simple as possible and as close as possible to the resolution adopted by the International Association of Ports and Harbors which had been unanimously adopted by representatives from all over the world. He was sure that the port authorities would urge their governments to ratify a simple convention. He therefore advocated Proposal C.

The Danish representative's suggestion for including a coefficient for excess freeboard might result in lower gross tonnage but higher freeboard. Ships with excess freeboard were automatically favoured because displacement was reduced. The danger with displacement was that if limitations were accepted on the principle of total volume a precedent might be set for only reductions or exemptions in displacement: in other words, there would be no real displacement. He urged the Committee to bear in mind the need for the simplest possible scheme for both parameters and to avoid complications.

Mr. SATO (Japan) expressed his preference for the new Norwegian Proposal, because the inclusion of crew space in gross tonnage would affect small ships, especially fishing boats. Its only disadvantage was its complexity. He wondered whether it would be possible to simplify the definitions of crew space.

Mr. NOZIGLIA (Argentina) said that it was unfortunately not possible in the Convention to take account of such aspects as safety and accommodation spaces. That, however, should not preclude their consideration. The purpose of tonnage measurement was to ensure the most profitable operation of ships and the greatest safety. Tonnage measurement should therefore provide sufficient flexibility. Hence, volume should not include crew spaces.

Mr. DE JONG (Netherlands) suggested a compromise between the two formulae. The first formula should be used in such a way that the existing gross tonnage minus crew accommodation spaces would be "a(V)". In doing so, existing gross tonnage should be used at open and closed shelter-deck values minus crew space for all kinds of ships.

Mr. MURRAY SMITH (UK) said that he had been puzzled over the vehemence of the support for the idea of taking account of crew spaces in ships. He had doubts about the scope of some of the items listed in the Norwegian Proposal. For example, could item (2), rooms for the safety equipment, be interpreted to mean space for CO<sub>2</sub> or appropriated for fixed ballast or water ballast? He would welcome a more detailed discussion before the Committee took any decision.

He foresaw difficulties in applying and defining the precise nature of deductions under items (1), (2) and (3), and extreme difficulties of interpretation in respect of passenger ships. Who, for example, would decide what might be included under the umbrella of galleys, ventilation, air-conditioning or even libraries?

For those reasons his own and other delegations wanted to narrow down what was intended by the supporters of the very laudable attempt at a compromise. His delegation was sure that the application of the gross volume concept would provide the same type of solution as the present very complex and ill-definable set of deductions.

Mr. MUENCH (Israel) disagreed with the argument that provision as made in formula 2 for deduction for crew space would give values nearer to existing gross tonnages, for most of the space thus to be exempted was at present included for gross tonnage calculation. It would be useful if the possible variations for the coefficient "a" could be given, in order to ascertain whether the resulting values would in fact be nearer existing gross tonnages, particularly in the case of small ships.

Mr. ROCQUEMONT (France) fully endorsed the comments made by the United Kingdom.

Mr. RUSSEL (South Africa) pointed out that his country maintained as a fundamental principle that one set of regulations should not affect another. It would therefore not be conceded that tonnage regulations should affect crew space regulations and, if such should prove to be the case, resulting disadvantages would be rectified by amendment of the latter.

Mr. CHRISTIANSEN (Norway) reiterated that document TM/CONF/C.2/WP.9 had been submitted purely to aid the Committee in reaching an acceptable compromise; it was not a direct proposal on Norway's part. The document stated explicitly that the crew spaces for which deduction should be made were spaces for the exclusive accommodation of master and crew; and the matter of such accommodation had been exhaustively discussed in the Sub-Committee.

As to rooms for the safety equipment, he was unable to go into detail, but could safely say that at sea water ballast space would never be regarded as space for safety equipment.

Professor PROHASKA (Denmark) disagreed with the argument adduced by France in answer to his previous point. For practically all countries, manning of ships was based on gross and not on net tonnage; under formula 1, therefore, ships with a high freeboard would be penalized and would tend to go out of production in favour of ships of lesser safety. An alternative which he knew in advance would be unpalatable would be to use displacement volume.



Mr. DE JONG (Netherlands) said that, from the safety angle, he fully agreed with Denmark's ideas; but unfortunately their application in respect of gross tonnage would lead to too wide a disparity with present figures.

Mr. ROCQUEMONT (France) said he failed to see how simple regulations could be an obstacle to maritime safety. The Committee should bear in mind the decisions taken the previous day, plainly evincing the general desire to discourage future building of small open shelter-deck ships of the type Denmark had in mind. Naval architects might be trusted to design ships complying with the regulations as laid down and at the same time incorporating adequate safety features.

Professor PROHASKA (Denmark), illustrating his arguments on the blackboard, maintained his point that the ship of low freeboard, whether with one or two decks, and the container ship with freeboard equivalent to 40% of draught were less safe, due to possibilities of listing and/or capsizing, as compared with the ship of higher freeboard. Using total volume as the basis for gross tonnage would encourage design to give lower freeboard, to the detriment of safety of life at sea. His earlier proposal was predicated on that thesis.

The CHAIRMAN suggested, in the interest of advancing the work, that speakers should confine their remarks to the question whether a factor providing for deduction of crew space should be included in the formula for gross tonnage.

Mr. LEE (China) said that his delegation supported in principle the compromise solution represented by formula 2 and would co-operate in efforts to arrive at an acceptable definition of crew space.

Two different values for the coefficient "a" might be included in formula 2, giving the equation  $GT = a_1V - a_2C$ ; and the working group should take into consideration the fact that "a<sub>2</sub>" would have values for small as well as large ships.

Mr ERICSSON (Sweden) maintained the stand already taken by his delegation. He would, however, be unable to vote on either formula without some precision on which of the problems inherent to the existing regulations would be ironed out by providing for a deduction for crew space. In his opinion, ship size was not a relevant parameter, for instance, for resolving such matters of difficulty as manning with respect to the 500 gross ton limit, concerning wireless requirements with respect to the 1600 gross tons limit etc., and in any case a convention on tonnage was not the appropriate vehicle for dealing with such matters.

Mr. ROCQUEMONT (France), while agreeing that the comments of Denmark were perfectly true, for both large and small ships incidentally, thought the whole Danish thesis amounted to an indictment of the decisions already taken concerning shelter-deck ships, decisions which could not now be changed.

Mr. MURRAY SMITH (UK) assumed from the lack of comment on his earlier remarks that the existence of serious problems of the definitions of crew spaces was generally accepted. Accordingly, his delegation's position remained the same.

Secondly, it would be unfortunate if a public impression were given that the Conference accepted without query that small single-deck ships as such were unsafe.

Mr. DE JONG (Netherlands) reiterated his earlier proposal that formula 1 should be used in the way he had outlined.

Secondly, the discussion on Denmark's suggestion showed that the Committee still generally favoured Proposal C, providing for two figures, gross tonnage based on total volume and net tonnage on displacement with exemption for crew space. If that solution was finally adopted, the Conference should recommend to IMCO that the limits laid down under the Safety of Life at Sea and the Load Line Conventions should be dependent on displacement.

Mr. CUNNINGHAM (USA) proposed the following formula for the calculation of gross tonnage, as a compromise which would avoid difficulties of definition and would place no limitation on excess provision for crew accommodation:

$$GT = a(V-nA)$$

n = Number of crew in excess of 40  
A = Constant representing standard volume per crew member.

Answering a point raised by the United Kingdom, he explained that 40 was a good average figure for cargo ships.

Professor PROHASKA (Denmark) said that both the Netherlands and the United States proposals were attractive at first sight, but the first would result in gross tonnages lower than at present and the second would still penalize shipowners providing crew accommodation above the minimum and would not cater for the special problem of crew accommodation on small ships.

The meeting rose at 12.45 p.m.