RESOLUTION A.246(VII)

AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE
PREVENTION OF POLLUTION OF THE SEA BY OIL, 1954
CONCERNING TANK ARRANGEMENTS AND LIMITATION
OF TANK SIZE

The Assembly,

Noting Article 16(i) of the Convention on the Inter-Governmental
Maritime Consultative Organization concerning the functions of the Assembly,

Being conscious of the responsibility of the Organization for taking
effective measures for the prevention and control of pollution of the
marine environment which may arise from maritime activities,

Realizing that notwithstanding the adoption by the Organization of
various measures for preventing collisions and strandings of ships, it is
not possible to eliminate entirely accidents which may lead to release
of oil, but desiring to minimize ensuing damage to the environment,

Recognizing that construction of oil tankers of large size without
accompanying control of size or internal arrangement of cargo tanks leads
to the possibility, in the event of a single accident, of serious
environmental pollution,

Having examined the Recommendations relating to tank arrangements and
to the limitation of tank size prepared by the Maritime Safety Committee at
its twenty-third session,

Considering that the universal implementation of such requirements can
best be achieved by amending the International Convention for the Prevention
of Pollution of the Sea by Oil, 1954,

Noting that Article XVI of the International Convention for the
Prevention of Pollution of the Sea by Oil, 1954 provides for procedures
of amendment involving participation by the Organization,

Adopts the following amendments to the Articles and Annexes to that
Convention, the texts of which are attached to this Resolution:

(a)   the addition of a new Article VI bis, and

(b)   the addition of a new Annex C,

Requests the Secretary-General of the Organization, in conformity with
sub-paragraph (2)(a) of Article XVI, to communicate, for consideration and
acceptance, certified copies of this Resolution and its Annexes, to all
Contracting Governments to the International Convention for the Prevention
of Pollution of the Sea by Oil, 1954, together with copies to all Members
of the Organization,

Invites all governments concerned to accept the amendments at the
earliest possible date, and

Determines in accordance with paragraph (5) of Article XVI that these amendments are of such an important nature that any Contracting Government which makes a declaration under paragraph (4) of Article XVI and which does not accept the amendments within a period of 12 months after the amendments come into force, shall, upon the expiry of this period, cease to be a Party to the present Convention.

ANNEX I

Add new Article VI bis as follows:

ARTICLE VI bis

(1) Every tanker to which the present Convention applies and for which the building contract is placed on or after the date of coming into force of this Article shall be constructed in accordance with the provisions of Annex C. In addition, every tanker to which the present Convention applies and for which the building contract is placed, or in the absence of a building contract the keel of which is laid or which is at a similar stage of construction, before the date of coming into force of this Article shall be required, within two years after that date, to comply with the provisions of Annex C, where such a tanker falls into either of the following categories:

(a) a tanker, the delivery of which is after 1 January 1977; or

(b) a tanker to which both the following conditions apply:

(i) delivery is not later than 1 January 1977; and

(ii) the building contract is placed after 1 January 1972, or in cases where no building contract has previously been placed, the keel is laid or the tanker is at a similar stage of construction, after 30 June 1972.

(2) A tanker required under paragraph (1) of this Article to be constructed in accordance with Annex C and so constructed shall carry on board a certificate issued or authorized by the responsible Contracting Government attesting such compliance. A tanker which under paragraph (1) of this Article is not required to be constructed in accordance with Annex C shall carry on board a certificate to that effect issued or authorized by the responsible Contracting Government, or if the tanker does comply with Annex C although not required to do so, it may carry on board a certificate issued or authorized by the responsible Contracting Government attesting such compliance. A Contracting Government shall not permit such tankers under its flag to trade unless the appropriate certificate has been issued.

(3) Certificates issued under the authority of a Contracting Government shall be accepted by the other Contracting Governments for all purposes covered by the present Convention. They shall be regarded by the other Contracting Governments as having the same force as certificates issued by them.

(4) If a Contracting Government has clear grounds for believing that a tanker required under paragraph (1) of this Article to be constructed in accordance with Annex C entering ports in its territory or using off-shore

terminals under its control does not in fact comply with Annex C, such Contracting Government may request consultation with the Government with which the tanker is registered. If, after such consultation or otherwise, the Contracting Government is satisfied that the tanker does not comply with Annex C, such Contracting Government may for this reason deny such a tanker access to ports in its territorial waters or to off-shore terminals under its control until such time as the Contracting Government is satisfied that the tanker does comply.

<div align="center">ANNEX II</div>

Add new Annex C as follows:

<div align="center">ANNEX C

REQUIREMENTS RELATING TO TANK ARRANGEMENTS
AND TO THE LIMITATION OF TANK SIZE</div>

1.   *Assumed Extent of Damage*

In the following paragraphs three dimensions of the extent of damage of a parallelepiped due to both collision and stranding are assumed. In the case of stranding, two conditions are set forth to be applied individually to the stated portions of the ship. These values represent the maximum assumed damage in such accidents and are to be used to determine by trial at all conceivable locations the worst combination of compartments which would be breached by such an accident.

1.1 *Collision*

Longitudinal extent (ℓ_c) $\frac{1}{3}L^{\frac{2}{3}}$ or 14.5 metres whichever is less

Transverse extent (t_c) inboard from the ship's side at right angles to the centreline at the level of the load line $\frac{B}{5}$ or 11.5 metres whichever is less

Vertical extent (v_c)   from the base line upwards without limit

1.2 *Stranding*

	For 0.3L from the forward perpendicular of the ship	Any other part of the ship
Longitudinal extent (ℓ_s)	$\frac{L}{10}$	5 metres
Transverse extent (t_s)	$\frac{B}{6}$ or 10.0 metres, whichever is less	5 metres
Vertical extent (v_s) from the base line	$\frac{B}{15}$ or 6 metres, whichever is less, for any part of the ship	

where: L, B in metres and perpendicular are as defined in Regulation 3 of the International Convention on Load Lines, 1966.

2. Hypothetical Oil Outflow from Tanks Assumed to be Breached as a Result of the Accident

The hypothetical oil outflow in the case of collision (O_c) and stranding (O_s) shall be calculated by the following formulae with respect to compartments breached by each assumed location of damage as defined in Section 1.

2.1 Collision

$$O_c = \Sigma W_i + \Sigma K_i C_i \qquad (1)$$

2.2 Stranding

$$O_s = \frac{1}{3} (\Sigma Z_i W_i + \Sigma Z_i C_i) \qquad (2)$$

where: W_i = volume of a wing tank in cubic metres breached by the damage assumed in Section 1; W_i for a clean ballast tank may be taken equal to zero,

C_i = volume of a centre tank in cubic metres breached by the damage assumed in Section 1; C_i for a clean ballast tank may be taken equal to zero,

$K_i = 1 - \dfrac{b_i}{t_c}$; when b_i is equal to or greater than t_c, K_i shall be taken equal to zero,

$Z_i = 1 - \dfrac{h_i}{v_s}$; when h_i is equal to or greater than v_s, Z_i shall be taken equal to zero,

b_i = width of wing tank in metres under consideration,

h_i = minimum depth of the double bottom in metres under consideration; where no double bottom is fitted, h_i shall be taken equal to zero,

wing tank = any tank adjacent to the side shell plating,

centre tank = any tank inboard a longitudinal bulkhead.

2.3 Special requirements

2.3.1 If a void space or clean water ballast tank of a length less than ℓ_c as defined in 1.1 is located between wing oil tanks, O_c in formula (1) may be calculated on the basis of volume W_i being the actual volume of one such tank (where they are of equal capacity) or the smaller of the two tanks (if they differ in capacity) adjacent to such space, multiplied by S_i as defined below and taking for all other wing tanks involved in such a collision the value of the actual full volume.

$$S_i = 1 - \frac{\ell_i}{\ell_c}$$

where: ℓ_i = length in metres of void space or clean ballast tank under consideration.

2.3.2(a)   Credit shall only be given in respect of double bottom tanks which are either empty or carrying clean water when cargo is carried in the tanks above.

(b)   Where the double bottom does not extend for the full length and width of the tank involved, the double bottom is considered non-existent and the volume of the tanks above the area of the stranding damage shall be included in formula (2) even if the tank is not considered breached because of the installation of such a partial double bottom.

(c)   Suction wells may be neglected in the determination of the value h_i provided such wells are not excessive in area and extend below the tank for a minimum distance and in no case more than half the height of the double bottom. If the depth of such a well exceeds half the height of the double bottom, h_i shall be taken equal to the double bottom height minus the well height.

Piping serving such wells if installed within the double bottom shall be fitted with valves or other closing arrangements located at the point of connection to the tank served to prevent oil outflow in the event of damage of the piping during stranding. Such piping shall be installed as high from the bottom shell as possible.

2.3.3   In the case where stranding damage simultaneously involves four centre tanks, the value of O_s may be calculated according to the formula

$$O_s = \frac{1}{4} (\Sigma Z_i W_i + \Sigma Z_i C_i) \qquad (3)$$

2.3.4   An Administration may credit as reducing oil outflow in case of stranding, an installed cargo transfer system having an emergency high suction in each cargo oil tank, capable of transferring from a breached tank or tanks to segregated ballast tanks or to available cargo tankage if it can be assured that such tanks will have sufficient ullage. Credit for such a system would be governed by ability to transfer in two hours of operation, oil equal to one half of the largest of the breached tanks involved and by availability of equivalent receiving capacity in ballast or cargo tanks. The credit shall be confined to permitting calculation of O_s according to formula (3). The pipes for such suctions shall be installed at least at a height not less than the vertical extent of the stranding damage v_s.

The Administration shall supply the Organization with the information concerning the arrangements accepted by it, for circulation to other governments.

3.   *Limitations of Size of Cargo Oil Tanks*

3.1   *Limitation of hypothetical oil outflow*

The hypothetical oil outflow O_c or O_s calculated in accordance with the formulae in Section 2 shall not exceed 30,000 cubic metres or $400\sqrt[3]{DW}$, whichever is the greater but subject to a maximum of 40,000 cubic metres, where DW = deadweight of the ship in metric tons.

3.2 *Limitation of volume of single tank*

The volume of a wing tank shall not exceed seventy-five per cent of the limits of hypothetical oil outflow referred to in 3.1.
The volume of a centre tank shall not exceed 50,000 cubic metres.

3.3 *Limitation of tank length*

The length of each tank shall not exceed 10 metres or one of the following values, whichever is the greater:

(a) where no longitudinal bulkhead is provided:

$$0.1L$$

(b) where a longitudinal bulkhead is provided at the centreline only:

$$0.15L$$

(c) where two or more longitudinal bulkheads are provided:

(i) for wing tanks:

$$0.2L$$

(ii) for centre tanks:

(1) if $\dfrac{b_i}{B}$ is equal to or greater than 1/5:

$$0.2L$$

(2) if $\dfrac{b_i}{B}$ is less than 1/5:

– where no centreline longitudinal bulkhead is provided:

$$(0.5\frac{b_i}{B} + 0.1)L$$

– where a centreline longitudinal bulkhead is provided:

$$(0.25\frac{b_i}{B} + 0.15)L$$

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15 October 1971
Agenda item 9

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RESOLUTION A.247(VII)

RECOMMENDATION TO PUT INTO EFFECT REQUIREMENTS RELATING
TO TANK ARRANGEMENTS AND TO THE LIMITATION OF TANK SIZE
FROM THE POINT OF VIEW OF MINIMIZING POLLUTION OF THE
SEA BY OIL

The Assembly,

Noting Article 16(i) of the Convention on the Inter-Governmental Maritime Consultative Organization concerning the functions of the Assembly,