1. **Tonnage measurement of fishing vessels**;

1.1 This document aims to provide clarification on regulations for measurement of Tonnage for fishing vessels.

1.2 The following table provides a quick reference showing how measurements should be taken and how they should be recorded for the three different size bands of Fishing vessels.

<table>
<thead>
<tr>
<th>Length of Boat (m)</th>
<th>Method of measurement</th>
<th>Type of dimensions used</th>
<th>Forms required</th>
<th>Recorded on Certificate</th>
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</thead>
<tbody>
<tr>
<td>0 – 14.99m LOA</td>
<td>Reg L x B x D x 0.16</td>
<td>Registered L, B &amp; D (SI 1988: 1909 as amended)</td>
<td>MSF 2301</td>
<td>Reg L, B &amp; D, LOA + GT</td>
</tr>
</tbody>
</table>
| 15m LOA – 24m ITC Length | ITC ‘69             | As per ITC ‘69 (SI 1997:1510 Pt II as amended) & (SI 1988: 1909) | MSF 2301 & MSF 2303 [To amend to be like ITC ie. No reg dimensions]* | [Reg L, B & D]* 
|                   |                      |                         |                | ITC’69 L, B & D + ITC’69 GT & NT |
| 15m LOA – 24m For MARPOL purposes | Reg L x B x D x 0.16 | Registered L, B & D (SI 1988: 1909 as amended) | MSF 2301 and MSF 2303 | Reg L, B & D, LOA, recorded as Net Tonnage |
| 24m ITC upwards  | ITC ‘69              | As per ITC ‘69 (SI 1997:1510) | MSF 2300 & MSF 2302 | ITC’69 L, B & D + ITC’69 GT & NT |

The following flow diagram is a guide to the process that should be followed;

1. Measure LOA of vessel

   ↓

   If 14.99m or less, refer to line 1 of table¹

   ↓

   If 15m or above, measure the ITC Length of the vessel²

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¹ See section 2. Definitions for details and exclusions
² As per section 6.1 (2.1 of SI 1997:1510)
2.0 Definitions; (in addition to those in Tonnage Regulations)

"amidships"; means the mid-point of the length, except in the case of a ship of less than 24 metres in length when it means the mid-point of the length overall;

“decked vessel”; a decked vessel is defined as a vessel that has a continuous watertight weather deck with positive freeboard in all loading conditions.

"length overall" means the distance between the foreside of the foremost fixed permanent structure and the after side of the aftermost fixed permanent structure; and “fixed permanent structure” includes any portion of the hull which is capable of being detached, but which is fixed in place during the normal operation of the vessel. It does not include functional arrangements such as safety rails, bowsprits, pulpits, stemhead fittings, rudders, steering gear, outdrives, outboard motors, propulsion machinery, diving platforms, boarding platforms, rubbing strips and fenders, other than where such functional arrangements are designed to replace any part of the hull that has been removed. (MS (Tonnage) Regulations SI 1997:1510 – as amended by Statutory Instrument 1998 No. 1916, The Merchant Shipping (Tonnage) (Fishing Vessels) (Amendment) Regulations 1998).

3.0 Measurement of fishing vessels of 0 – 14.99m length overall;

3.1 Regulations Applicable

3.1.1 These vessels are measured as per The Merchant Shipping (Fishing Vessels Tonnage) Regulations 1988 SI 1988 No. 1909 Schedule 1 and Schedule 3. The dimensions to be used for purposes of calculating tonnage are the Registered dimensions of the fishing vessel. The cut off (inclusive) for this type for simplified measurement is 14.99m length overall.

3.2 Bowsprits;

3.2.1 There have been instances where vessels have had GRP moulded bowsprits incorporated into the structure. Originally the 'bowsprit' was a
bolted on steel structure which had subsequently been laminated into the deck moulding.

3.2.2 Originally the 'bowsprit' was not counted, this was subsequently not the case and so the vessel length had to grow. It is thus very important to establish if structure is integral to the hull or deck or is bolted on.

3.2.3 The following picture is of a catamaran where the 'bowsprit' is incorporated into the deck structure and therefore it is to be counted in the Length measurement.

3.3 **Fixed Permanent Structure;**

3.3.1 Structure that is integral to the hull and deck structure, i.e. not bolted on shall be considered within the Length measurement.

3.3.2 A good test of this is to determine if the structure in question is removed, is there a hole in the hull or deck that would render the vessel un-useable or unseaworthy. If the answer if yes, the structure is counted in the measurements (fixed permanent structure).

3.3.3 Any structure that is considered essential for the operation of the vessel is to be considered fixed permanent structure; e.g engine support aft of what would be considered to be the transom.

3.4 **Measurement of Registered dimensions**

3.4.1 **Registered Length;**

3.4.1.1 Measure the length from the foreshore of the foremost fixed permanent structure to the aftermost part of the rudder post, or, in a vessel not having a rudder post, to the foreshore of the rudder stock at the point
where the rudder stock passes out of the hull. In vessels not having a rudder post or rudder stock, measure to the aftermost part of the stern or transom.

3.4.1.2 The following diagrams may be useful;
3.4.2 Registered Breadth;

3.4.2.1 Measure the maximum breadth of the vessel to the outside of the shell, planking or plating.

**REGISTERED BREADTH “B”**

3.4.3 Registered Depth;

3.4.3.1 Measure the depth amidships or at the deepest part of the section plus or minus 30% of the length from amidships (amidships refers to Registered Length and not Length overall) in one of the following ways:-
(i) from the underside of the upperdeck on the centre line to the upperside of the double bottom plating or to the top of the normal line of open floors or timbers as the case may be or, where no frames or timbers are fitted, to the inside of the hull on the centre line;

(ii) for open vessels from the upper edge of the shell or the upper strake of planking or plating to the upper side of bottom frames or timbers on the centre line. Where ceiling or insulation is fitted on the tank top, its thickness up to a maximum 8 cm shall be deducted from the measurement.

**MEASUREMENT IN WAY OF DEEP FLOORS**

Deeper floors must be fitted on alternative frames and extend over 60% L (30% L fore and 30% L aft of midships). Make allowance for any ceiling, flooring, insulation or cement laid on floors or beams 3 cm. All depth measurements taken at amidships.

**DEPTH MEASUREMENT FOR WOODEN VESSELS**
REGISTER DEPTH “D”

DEPTH OF VESSEL WITH TWO COMPLETE CONTINUOUS DECKS

DEPTH OF A VESSEL WITH A BREAK
3.4.4 Tonnage Calculation

3.4.4.1 The Registered dimensions shall then be used as follows:

Multiply together the Registered Length, Registered Breadth and Registered Depth in metres and multiply the product by the factor 0.16 i.e. \( \text{GT & NT} = (L \times B \times D \times 0.16) \). The result shall be the Registered Tonnage (GT & NT) of the vessel, except for those vessels to which paragraph 3.2 also applies.

3.4.4.2 For vessels with a break or breaks above the line of deck multiply together the mean length, mean breadth and mean depth in metres of the space or each of the spaces thereby formed, then multiply the product for each space so measured by the factor 0.35 and add the results to the figure obtained by the calculation set out in paragraph 1. For such vessels the final result shall be the Registered Tonnage of the vessel.

3.4.5 Breaks

3.4.5.1 A break is defined as a full side to side (bounded by the sides of the ship) upward step in the lowest line of the ‘upper deck’ deck. The notion of a break was developed from the UK Tonnage Regulations of old. The reason for this was due to the consideration of a ‘Tonnage deck’. This deck was deemed to be a continuous deck and where there were steps in this deck, a ‘line of continuation’ was deemed to be the tonnage deck. This meant that any steps had to be considered in a slightly different way to those spaces below the tonnage deck.

3.4.6 Certification

3.4.6.1 The current form to be used is MSF 2301 / REV 0605. This should be filled in and sent to Registry of Shipping & Seamen. Registered Tonnage will be both the Gross and Net Tonnage.

3.4.6.2 This will result in the dimensions being transferred to the Certificate of Registry which will be issued to the owners.

3.4.7 Multi-hulls

3.4.7.1 The total gross and net tonnage for catamarans under 15m LOA shall be the sum of the gross and net tonnage measured for each individual hull.
3.4.7.2 The part of the hull that joins both hulls (cross deck structure) is not to be counted within the calculation for tonnage though it is counted when measuring the extreme breadth of the vessel.

3.4.7.3 Each hull shall be measured as it would if it were a monohull vessel and the total GT and NT shall be the product of the two (or three in case of trimaran hull forms) hulls. The overall Breadth should be recorded on the certificate as Breadth but people should be aware that the Breadth on the certificate does not necessarily relate to the calculated tonnage (ie. It has not been used to calculate the GT or NT).

3.4.7.4 There is often confusion with multihulls as to what structure is counted as ‘a break’.

3.4.7.5 More often than not, any upward step in the weather deck is intersected by another structure or cut out such as a wheelhouse or other, and thus the upward step is not full side to side.

3.4.7.6 A good example of this is the case on many multihulls where the foredeck is raised and spans across the two hulls but the wheelhouse is set into the deck.

3.4.7.8 This upward stepped part shall not be counted as a break due to the side to side dis-continuity. This will simplify the measurement of catamaran’s somewhat. See Diagrams 1 & 2;

3.4.7.8 It is worth noting the intention of tonnage measurement which is to establish the useful working volume of a vessel. Small enclosed spaces such as the forepeak are not essentially part of this and to count these as a break (which is higher rated for volume, (0.35 rather than 0.16 factor) is not in the spirit of the measurement system.
Diagram 1

Diagram 2 – Upwardly stepped foredeck NB – This is not a break
Pic. 1 - Starboard side looking fwd. Note foredeck upward step, intersected by deckhouse.
As explained above, the space in the for’d end of each hull would not count as a break, the picture helps illustrate why;

Pic.2 – Inside the starboard for’d hull
Diagram 3 – Catamaran hull breadth measurement;

Where there is a potential discrepancy with measurement of breadth of the hull, for example where the line of hull does not have an clear point of intersection with a cross deck structure the breadth measurement shall be \((A + B)/2\). If there is question of this, please seek further advice from HQ.

3.4.8 Rigid Inflatables;

3.4.8.1 Rigid inflatables shall be measured to the extremity of the inflatable sponson. This shall include the ‘length’ measurement where the tubes extend beyond the rigid part of the hull.

3.4.8.2 The vessel should be measured with the sponson inflated to its usual working pressure under normal conditions.

3.4.8.3 As with other measurement of conventional hull forms above, the fendering glued to the inflatable sponsons shall not be considered in measurement, nor would a stainless A frame at the stern (as it falls under the definition of ‘non fixed permanent structure’).
4.0 Tonnage measurement for 15m LOA – 24m ITC Fishing Vessels;

4.1 Regulations Applicable

4.1.1 All FVs being re-measured or measured for the first time within this size bracket are measured under SI 1997: 1510 Part IIA. This section of the 1997 tonnage regulations applies ITC measurement to this size of vessel for purposes of tonnage measurement. MARPOL certificates are NOT required for vessels below “below ITC’69 Tonnage Convention size” which have been assigned an “artificial” gross tonnage by the EU and are not required to be measured for ITC 69 tonnage purposes. Therefore to meet EU requirements the vessels shall be measured for GT by using the ITC method, but for MARPOL the NT shall be recorded on the Certificate using the simplified method set out in SI 1988, No. 1909. See 4.3.1 below.

4.2 Definitions

4.2.1 The following is the definition of ITC Length, Breadth from SI 1997:1510 – The Merchant Shipping (Tonnage) Regulations;

"length" means the greater distance of the following distances -

(a) the distance between the fore side of the stem and the axis of the rudder stock; or

(b) 96 per cent of the distance between the fore side of the stem and the aft side of the stern;

the points and measurements being taken respectively at and along a waterline at 85 per cent of the least moulded depth of the ship. In the case of a ship having a rake of keel the waterline shall be parallel to the designed waterline;

"breadth" means the maximum breadth of the ship, measured amidships to the moulded line of the frame in a ship with a metal shell and to the outer surface of the hull in a ship with a shell of any other material;

"moulded depth", and in the case of a ship of less than 24 metres "depth", means the vertical distance measured from the top of the keel of a metal ship, or in wood and composite ships from the lower edge of the keel rabbet, to the underside of the upper deck at side, or, in the case of a ship which is not fully decked, to the top of the upper strake or gunwale, provided that –
(a) where the form at the lower part of the midship section is of a hollow character, or where thick garboards are fitted, the distance is measured from the point where the line of the flat of the bottom continued inwards cuts the side of the keel;

(b) in the case of a glass reinforced plastic ship where no keel member is fitted and the keel is of open trough construction, the distance is measured from the top of the keel filling, if any, or the level at which the inside breadth of the trough is 100 millimetres, whichever gives the lesser depth;

(c) in ships having rounded gunwales, the distance is measured to the point of intersection of the moulded lines of the deck and side shell plating, the lines extending as though the gunwales were of angular design; and

(d) where the upper deck is stepped and the raised part of the deck extends over the point at which the moulded depth is measured, the distance is measured to a line of reference extending from the lower part of the deck along a line parallel with the raised part; and for the purposes of this definition -

(i) "upper deck" means the uppermost complete deck exposed to weather and sea, which has permanent means of weathertight closing of all openings in the weather part thereof, and below which all openings in the sides of the ship are fitted with permanent means of watertight closing. In a ship having a stepped upper deck, the lowest line of the exposed deck and the continuation of that line parallel to the upper part of the deck is taken as the upper deck; and

(ii) "weathertight" means that in any sea conditions water will not penetrate into the ship;

"moulded draught" means -

(a) for ships assigned load lines in accordance with the Load Line Rules, the draught corresponding to the Summer Load Line (other than timber load lines);

(b) for passenger ships, the draught corresponding to the deepest subdivision load line assigned in accordance with the Merchant Shipping (Passenger Ship Construction) Regulations 1980[6] or the Merchant Shipping (Passenger Ship Construction) Regulations 1984[7], whichever is applicable;
(c) for ships to which no load line has been assigned but the draught of which is restricted by the Secretary of State, the maximum permitted draught; and

(d) for other ships, 75 per cent of the moulded depth amidships;

4.3 Tonnage Remeasurement

4.3.1 In 1998 the UK Fishing Vessel Tonnage Regulations (SI 1988 No. 1909) were amended to take into account an EC Regulation on measurement of fishing vessels (Council Regulation (EC) No 3259/94 of 22 December 1994 amending Regulation (EC) No 2930/86 defining the characteristics of fishing vessels)

(a) As such, all vessels of 15m LOA to 24m Length (ITC) should have had their tonnage re-calculated in accordance with ITC '69 method as per over 24m Vessels to harmonise the monitoring of the European fishing effort.

(b) These vessels will still have the old registered dimensions on their Certificate of Registry. In order that an equivalence could be established with the old simplified tonnage measurement when transferring fishing licences the “net tonnage” was calculated using the simplified method and recorded as such on the Certificate of Measurement (MSF 2301). These vessels will have a UK Fishing Vessel Tonnage Certificate 2303 but the registered dimensions stated are as per the old 1988 tonnage measurement system.

4.4 Measurement

4.4.1 This tonnage of vessel is calculated by Certifying Authorities recognised by the MCA and also by approved surveyors. These can be individuals who have the necessary knowledge and experience to be able to perform and measurement. Where an individual surveyor is to be appointed, this is done on a case by case basis.

4.3 Appointment and approval of measurers

4.3.1 The appointment and approval of surveyors is to be done from the respective marine offices. There are templates for letters of appointment and approval and also certificates of appointment which serves as proof of our official delegation.
4.3.2 There are also PDF Certificate of Measurement (MSF 2301) and Fishing Vessel Tonnage Certificate (MSF 2303) or International Tonnage Certificate (MSF 2300) available. These should be sent or emailed to the appointed surveyor to be returned to the MCA Marine Office for a check. The check should entail a very brief check of the paperwork and the figures obtained to ensure that they seem sensible. This check should be against a lines plan or drawing of the vessel as measured. This does not necessitate a detailed repetition of the calculation. Methods can include approximate volume calculations, verification of the use of the appropriate formulae, spot checks on calculations and consideration of the surveyor's methods. Combinations of these are advised.

4.4 Certification of 15-24m ITC vessels;

4.4.1 Vessels in the 15m LOA – 23.99m ITC Length are to be issued with a UK Fishing Vessel Tonnage Certificate (MSF 2303) and a Certificate of Measurement (MSF 2301).

   (i) The Authorised Measurer shall on receipt of the prescribed fee (if any) measure the vessel and calculate its tonnage in accordance with these Regulations and shall issue and deliver to the Secretary of State a Certificate of Measurement in a form approved by the Secretary of State.

   (ii) The tonnage and other particulars stated in the certificate shall, unless any alteration is made in the particulars of the vessel, or it is shown that its tonnage or measurements have been erroneously recorded, be taken to be as recorded in the certificate.

   (iii) The authorised measurer shall, if it is in order to do so, issue a certificate in an approved form.

5.0 Tonnage measurement for 24m ITC upwards Fishing Vessels

5.1 Bodies authorised to undertake measurement of vessels as above are all UK Recognised organisations. A full list of these can be obtained from the External Monitoring & Affairs, HQ.

5.2 Fishing vessels of ITC Length 24m and upwards are covered by the International Convention on Tonnage Measurement of Ships 1969 which entered into force on the 18th July 1982.

5.3 Measurement shall be as per Part 2 of Statutory Instrument 1997: 1510 using the definitions of Part I.
5.4 Vessels shall be issued with forms MSF 2300 (International Tonnage Certificate) and MSF 2302 (Certificate of Survey).
8. **Authorised Measurers**

**Measurement of Vessels over 24m**

Maritime and Coastguard Agency  
Lloyd’s Register of Shipping  01502 581117  
Bureau Veritas  01914 821476  
Det Norske Veritas  02073 576080  
American Bureau of Shipping  02072 473255  
Registro Italiano Navale  02078 396099  
Germanisher Lloyd  01689 891911

**Measurement of Vessels 15m overall to less than 24m**

Maritime and Coastguard Agency  
Lloyd’s Register of Shipping  01717 09916 ext 2694  
Bureau Veritas  01914 821476  
Det Norske Veritas  02073 576080  
Seafish Industry Authority  01315 583331

**Authorised bodies appointed on an individual basis for all size of vessels**

Ace Marine Ltd, Limekilns, Fife  01383 873464  
Burness Corlett & Partners Ltd, Southampton  02380 339449  
Duchy Boatyard Services, Cornwall  01736 756501  
Foster North and Associates Ltd, Hull  01482 212922  
Harland and Wolf Technical Services Ltd, Belfast  02890 457040  
I.K Macleod & Associates, Ross-shire  01599 534692  
IMT Marine Consultants Ltd Escrick, York  01904 728904  
J Evans, Eyemouth  01890 750231  
Jeffery Wood Marine Limited, Romford  01708 220088  
Johnson & Smart (Projects) Ltd, Aberdeen  01224 573992  
Kingfisher Marine Services Ltd, Shetland  01595 695683  
Macduff Ship Design Ltd, Macduff, Grampion  01261 833825  
McCaig Watson Ltd, Glasgow  01413 140019  
McCombie Marine Services, Ellon  01358 725050  
Napier Company (Arbroath) Ltd, Arbroath  01241 875112  
Penrhyn Marine Services Ltd, North Wales  01248 681107  
R & J Maritime Ltd, Plymouth  01752 671586  
S C McAllister & Co Ltd, Campbeltown  01586 552131  
Shiptech (UK) Ltd, Hull  01482 324964  
Simon J Oakes, Moray Firth Marine Surveys Ltd  01261 843006  
Strathclyde Maritime Design, Glasgow  01413 424432  
Ward & McKenzie, Ipswich  01473 255200