

PART 2

SURVEYS - GENERAL PRINCIPLES

2.1 Application for Survey (Regulation 8)

2.1.1 The onus is upon the Owner or his agent to make application for the issue of a load line certificate or for a survey or inspection within the stipulated time period. The application is to be accompanied by a fees deposit; see survey policy Instructions to Surveyors under 'Fees Estimates'. Any outstanding balance of fees or expenses must be paid before a certificate is issued or endorsed.

2.1.2 In the case of the first survey of a ship for issue of a load line certificate full information, particulars and plans relating to the design of the ship must be submitted to Headquarters in good time.

2.1.3 The Owner or builder should also submit the following information:

2.1.3.1 The type of freeboard to be assigned, ie:

- (a) Type A;
- (b) Type B;
- (c) Type B with reduced freeboard;
- (d) Type B with increased freeboard; or
- (e) Type B with timber freeboard.

2.1.3.2 The employment and intended service including any geographical limits of operation.

2.1.3.3 The desired summer freeboard and the corresponding draught. Where the freeboard is less than the statutory minimum it should be accompanied by a qualifying statement.

2.1.3.4 Plans showing:

- (a) principal hull scantlings, framing, pillars and girders, and compensation in way of openings in the shell plating and strength decks. The nature and physical properties of the materials used and their means of connection should be stated. When a currently classed ship is presented for assignment of freeboard by the MCA the Surveyor may be satisfied with these materials if they have been tested by the Surveyors of the Classification Society.

If the ship is unclassified the Surveyor should state the makers of the materials and ensure that the materials have been tested in accordance with the rules of a recognised Classification Society; for this purpose the certificates issued by the makers or the Surveyors of a Classification Society may be accepted.

When welding is used as a means of connection the welding electrodes employed should be of a type accepted by a recognised Classification Society for the grade of steel and welding conditions used.

(b) Details and connections of the principal hull castings and forgings and the fabricated construction of shaft brackets, rudders and stabilising fins.

(c) Scantling of enclosed superstructures, deckhouses and all companionways which give access to spaces below the freeboard and superstructure decks.

(d) Details of patent hatch covers and the scantlings of cargo hatch covers, coamings, beams and other supports, the securing arrangements for the covers, the details of gaskets etc. and/or tarpaulins and battening arrangements where applicable (see also paragraph 3.2 and 3.3).

(e) The means of protection to any openings in the casings (see also paragraph 3.5).

(f) Arrangements of ventilators in Position 1 and Position 2 with the details of coamings and the means of securing the openings weather tight (see also paragraph 3.7).

(g) Arrangement of exposed air pipes which lead to tanks below the freeboard and superstructure decks with the details of the air pipes and the means of securing the openings weather tight (see also paragraph 3.8).

(h) Arrangement of cargo ports or similar openings in the ship's side below the freeboard deck or in the sides and ends of superstructures. The lower edges of the ship's side openings should be shown in relation to the uppermost seasonal load line. The scantlings, particulars of the doors, the securing arrangements and gasketing are also to be shown (see also paragraphs 3.6 and 3.9).

(i) Arrangements of scuppers, inlets and discharges indicating the position, type of the valves fitted at the shell and the arrangement of pipe work forming the system. Where the valves and shell fittings are constructed of a material other than steel or bronze, the physical properties of the material should be stated (see Schedule 2 paragraph 12(8) of MSN 1752(M)). The position

of scuppers, inlets and discharges in relation to the summer load waterline or summer timber load line, whichever is appropriate, should be shown on a profile plan to facilitate checking and approval (see also paragraph 3.10).

(j) Arrangement and details of every side scuttle fitted to spaces below the freeboard deck and to enclosed superstructures and of side scuttles fitted in deckhouses and companionways where such structures are protecting openings in the freeboard and superstructure decks (see also paragraph 3.11). The side scuttles should conform to BS MA24:1974 the relevant table number being shown either on the plan of side scuttles or in the form of a tabular statement. Where the side scuttles do not conform with BS MA24:1974 full details of the design and construction should be submitted to Headquarters for approval. Surveyors should ensure that the provisions of paragraph 13(1) of Schedule 2 to MSN 1752(M) are complied with and in this respect the summer load waterline should be drawn on the profile plan to facilitate checking and approval.

(k) Arrangement, dimensions and position of freeing ports in the bulwarks to the weather portions of the freeboard and superstructure decks. Where shutters and protective rails are fitted to such openings details should be supplied (see also paragraph 3.12).

(l) Arrangement of the guard rails or wires, lifelines, gangways, walkways or underdeck passages for the protection of the crew (see also paragraph 3.13).

2.1.3.5 Details of the intact stability of the ship at the assigned freeboard (see also paragraph 5.1). It should be stated which superstructures/erections are intended for inclusion in intact stability calculations. If the buoyancy of resiliently mounted structures is intended for inclusion, the Owner should seek confirmation from the classification society that it is reasonable to assume this buoyancy contribution is justified (see also paragraph 3.13.3).

2.1.3.6 Floodability calculations and diagrams where applicable under the Load Line Regulations. Diagrams should show final trim lines in relation to any opening through which progressive flooding might take place e.g. access openings in superstructures and bulkheads (even where fitted with weather tight doors) the tops of ventilator coamings and air pipe openings (see also paragraph 5.7.5).

2.1.3.7 Damaged stability calculations where applicable, showing angles of heel and details of the residual stability after flooding. Full details of the intact stability for the loaded condition used as a basis for these calculations should also accompany this submission.

2.1.4 Classed ships-definition

For the purpose of these Instructions a ship is regarded as a classed ship if constructed of steel, aluminium alloy, reinforced plastic, wood or any other suitable material and is currently classed with one of the Assigning Authorities defined in the Regulations (Regulation 2(1)).

2.2 Load Line Survey (Regulation 8)

2.2.1 Initial Survey

The survey of new ships or existing ships not previously assigned load lines should include:

2.2.1.1 a complete and thorough examination of the ship's structure both internally and externally:

2.2.1.2 an examination of all fittings and appliances for the protection of openings giving access to spaces below the freeboard and superstructure decks, the guard rails, the freeing ports and means of access to the crew's quarters;

2.2.1.3 an examination of the stability and, where applicable, loading and ballasting information which is required to be supplied to the master of the ship, and

2.2.1.4 the determination of all necessary data required for the computation of the freeboard.

The Surveyor should carry out such tests as he considers necessary to ascertain the foregoing.

Ships which comply with the highest standard of structural strength required by the Rules of an Assigning Authority and with the 'Conditions of Assignment' in full may be assigned the statutory minimum freeboard allowable under a Regulation 29.

Where in an exceptional case the MCA allows departures from the 'Conditions of Assignment' the ship must be assigned a freeboard greater than the statutory minimum and the safety and protection afforded must be no less effective than if the ship had been assigned the minimum freeboard (Regulations 30(2) and 34(b)).

2.2.2 Method of survey

The following instructions should be followed by the Surveyor when the ship is opened out for survey. These Instructions are to be taken as normal requirements in the survey of ships but where he/she considers that additional examination, opening out or testing is necessary in order to be satisfied the Surveyor should ensure that those requirements are complied with.

2.2.2.1 Survey of steel ships (classed)

Where the load line survey of a classed ship is to be undertaken by the MCA it will usually be convenient for it to be carried out while the ship is in dry dock during one of the periodical surveys required by the Classification Society. Where this is not possible the Surveyor should seek guidance from Headquarters. A detailed report of the state of the ship including the thicknesses of the plating is to be given on form FRE 8 which, together with forms FRE 6, FRE 7 and FRE 10 should be forwarded to Headquarters.

2.2.2.2 Survey of steel ships (Unclassed)

(a) The ships should be placed in a dry dock or on a slipway on blocks of sufficient height to enable the bottom shell plating to be examined thoroughly to ensure that its condition is satisfactory. When in dry dock or on a slipway the remaining shell plating and its means of connection i.e, riveting or welding should also be examined; the Surveyor should be afforded access to any area of shell plating which he considers it necessary to examine. Internally the examination should include the plating, framing and means of connection etc., in the double bottom, holds, 'tween decks, peaks and machinery spaces and any ceiling sparring, linings and insulation should be removed wherever the Surveyor considers it to be necessary.

(b) The plating and beams of the freeboard and superstructure decks should be surveyed and the Surveyor may require portions of deck planking, deck composition or tiling to be removed where deterioration is evident or suspected.

(c) At each load line survey all tanks which are an integral part of the hull structure should, in general, be surveyed internally and may, at the Surveyor's discretion, be pressure tested by liquid to a pressure equivalent to the maximum load experienced in service or by air at a pressure not exceeding 0.141 kg/cm. Where such tanks (excluding peak tanks) are used exclusively for the carriage of oil fuel, or for oil fuel and fresh water ballast they need not be examined at each load line survey unless as a result of an external survey or for any other reason the Surveyor considers it necessary. Cross-leveling arrangements fitted for stability purposes should be examined regularly. If considerable deterioration has or is considered likely to have taken place since the date of the last load line survey the thicknesses of the shell and deck plating and the means of connection are to be ascertained by drilling holes or by other acceptable means e.g. ultrasonic testing. Where ultrasonic testing of welds is employed the Surveyor should be guided by BS EN 1714: 1998, and BS 2704: 1978 (1983). A detailed report of the state of the ship including the thicknesses of plating is to be given on form FRE 8 which together with

forms FRE 6, FRE 7 and FRE 10 should be forwarded to Headquarters. In the case of Type A ships and Type B ships assigned reduced freeboards under the provisions of paragraph: 5(3) to (7) of Schedule 4 of MSN 1752(M), the watertight and oiltight bulkheads forming the boundaries of the main compartments should be examined carefully throughout their vertical and transverse extent taking into account any recesses or steps which may be fitted. Where deterioration has taken place the Surveyor may require the thicknesses of the plating to be ascertained by drilling holes or by any other acceptable means.

2.2.2.3 Survey of wood ships fully opened out

(a) The ship is to be placed in dry dock or on a slip or on ways or blocks of sufficient height to enable the keel, the bottom planking and the caulking to be thoroughly examined and tested. Where no such facilities exist at the port of survey the ship is to be placed on blocks laid on a clean and hard beach and then listed so that a satisfactory inspection can be made of every part of the bottom planking and the keel, and a thorough testing can be made of the caulking of the garboard and other seams of the planking.

(b) The limbers and all air courses are to be removed and the holds cleared. A listing not less than 100mm wide is to be cut out of the ceiling on each side in the range of the floor-heads or thereabouts at each end of the ship for one-fifth of the length. In a single deck ship or a ship where hold-beams are fitted a further listing, midway between the turn of the bilge in the case of the former and immediately under the hold-beam in the case of the latter, is to be made and should follow the sheer and extend over the main body of the ship.

(c) If it would be impracticable on account of the unusual thickness of the ceiling, or for some other reason, to expose the inner surface of the timbers by cutting listings as described above, a short shift of outside planking is to be removed on each side at each end of the ship, in line with the upper turn of the bilge or at a height which will best expose the timbers to view. For the remaining portion of the ship's length the state of the timbers is to be ascertained by driving out a treenail, if fitted, in every fourth timber in one or other of the strakes of the bilge planking.

(d) At least twelve treenails in number on each side are to be driven out at various parts of the ship to ascertain their condition and that of the timbers through which they pass.

(e) The fastenings are to be examined carefully, and if the ship is iron fastened, a number of bolts should be driven out, of

which approximately six should be in the lower deck bindings on each side. One chain plate bolt is also to be backed out abreast of each rigging and if found to be in an unsatisfactory condition as many more are to be backed out as the Surveyor may consider to be necessary.

(f) The caulking is to be tested. Where the ship is sheathed with metal, one sheet is to be stripped off at the upper turn of the bilge, square down from each rigging on each side of the ship. The hood ends on each side at each end of the ship are to be exposed and examined together with the associated caulking. If examination of the metal sheathing reveals wrinkling a special report is to be made on form FRE 9.

(g) Where necessary the Surveyor should examine the ship carefully both afloat and in dry dock; his report of its condition on form FRE 9 should describe the general appearance of the ship in respect of sheer and indicate any signs of weakness or straining. Where applicable the report should indicate if structural alterations, modifications, or renewals have been made since the last survey and give detailed information of the scantlings and condition of the following items:

- metal sheathing and caulking;
- fastenings - bolts and treenails;
- keel, stem and sternpost;
- outside planking;
- decks, waterways and planksheer;
- deck beams, knees and stanchions;
- hold beams, knees, riders and stanchions;
- shelves, clamps and inside planking;
- floors and frame timbers;
- apron, breasthooks, deckhook, etc;
- inner posts, crutches, etc; .
- keelson, rider and sister keelsons;
- hatchways, hatchway coamings, and hatchway fittings;
- other deck openings including companionways, skylights and ventilators; and
- superstructures and structures which cover deck openings.

(h) The materials used in construction are to be stated in so far as they can be ascertained and the general quality of the workmanship is to be reported. The particulars required for forms FRE 6, FRE 7 and FRE 10 should be obtained by actual measurements at the ship, and a new form FRE 9 should be forwarded whenever the ship is fully opened out for survey showing full details of the relevant items. The Surveyor should give his assessment as to the Class in Lloyd's Register to which the ship's present condition is equivalent. The ship's normal and intended trade is also to be stated.

(i) Mechanically propelled wood ships should be fully opened out in every case.

(j) The freeboard assigned to an unclassified wood sailing ship which has been fully opened out for survey will depend upon its age, construction and condition.

2.2.2.4 Survey of wood ships not fully opened out

(a) If the ship is not fully opened out, the freeboard will be increased as required, according to whether the ship is constructed of hard or soft wood. The duration of the load line certificate will depend upon the report of the survey and the extent to which the ship has been opened out.

(b) The Surveyor should complete forms FRE 6, FRE7 and FRE 10 and report on form FRE 9 what action he has taken to ascertain the condition of the ship, and that he has satisfied himself, as far as he is able, that the ship will be seaworthy if loaded to the proposed load line for the period recommended, having regard to the ship's age, construction, condition and intended trade.

(c) The type of materials composing the keel, keelson, stem and stern-post, frames and beams must be reported in order to ascertain whether the ship is built of hard or soft wood. In addition, the scantlings and materials of all parts which are accessible, their condition, and the condition of the bottom should be reported on form FRE 9.

2.2.2.5 Survey of ships constructed of glass-reinforced plastic fully opened out

(a) Ships constructed of glass-reinforced plastic will be considered for load line assignment provided they are constructed employing a polyester or epoxide or phenolic resin system approved by a recognised Classification Society including glass or other acceptable fibre reinforcements employing accepted hand or spray lay-up processes. Full details of the form of construction and materials used, including the glass/resin ratio, and details of the establishment in which the ship is to be constructed including, where construction is not monitored by a recognised Classification Society, atmospheric conditions should be submitted to Headquarters for approval. For ships not being built to the rules of a recognised Classification Society information should also be submitted indicating the bending moment assumption for the design and the resultant longitudinal and transverse stresses and deflections. The resins, reinforcements and other materials used in construction shall comply with the requirements of British Standard 3532:1990 (1995)-Specification for Unsaturated

Polyester Resin Systems for Low Pressure Fibre Reinforced Plastics except that the maximum absorption of cast resin, determined by Test Method 430 B of BS 2782 Part 4 -1983, should not exceed 16.5 mg or by ISO 62-1980-Plastics - Determination of Water Absorption Method 2. Glass fibre reinforcing materials should comply with the requirements of the British Standard Specifications:

BS 3496:1989 (1995) Glass Fibre Chopped Strand Mat for the Reinforcement of Polyester Resin Systems.

BS 3396 Woven Glass Fibre Fabrics for Plastics Reinforcement.

1991 (1996) =

ISO 4605, ISO 4606

1987 (1995)

1987(1995)

Part 1 Loom State Fabrics

Part 2 Desized Fabrics

Part 3 Finished Fabrics for use with Polyester Resin Systems

BS 3691 :1990 (1995) Glass Fibre Rovings Fabrics for the Reinforcement of Polyester Resin Systems.

(b) In the case of ships under construction care should be taken with 'matting-in connections'. Where components are bonded to the cured or partially cured structures suitable resins are to be employed. Attention should be given to the methods of construction and to whether the hull of the ship is of a stiffened or unstiffened single skin laminate or of sandwich construction; the latter is a more complex type of construction and requires particular surveillance. Attention should be paid to the secondary bonding of components to the hull.

(c) These ships are normally constructed in a composite manner and in addition to the glass-reinforced plastic hull of the ship there may be incorporated frames, decks, bulkheads, engine bearers, longitudinal members and superstructures which may be of wood, steel or other suitable material.

(d) The fastenings in all types of reinforced plastic ships should be carefully examined and where bolt fastenings are used for any connection a number of bolts should be removed or exposed for examination at periodical inspections. It is of importance that the Surveyor should note any deterioration e.g. delamination, cracking etc of the components of the laminate within the vicinity of the bolt holes in order to ascertain if the material is suitable to withstand the loads imposed on it.

(e) The Surveyor should examine the ship carefully both afloat and in dry dock. His report of the condition on form FRE 9 should describe the appearance of the ship in respect of sheer

and Indicate any signs of weakness or straining. If it is not a new ship the report should indicate if structural alterations, modifications or renewals have been made since the last survey and where applicable give detailed information of the scantlings and the condition of the following items:

- the hull and hull connections with other structural components;
- fastenings, primary and secondary bonds and bonded joints;
- outside shell;
- decks, waterways and sheer strake;
- deck beams, knees;
- hold beams, knees;
- floors, frames and longitudinals;
- apron and breasthooks, etc.;
- keelson and sister keelsons;
- hatchways, hatchway coamings and hatchway fittings;
- deck openings, skylights, ventilators and companionways;
- superstructures and structures which cover deck openings; and
- engine bearers.

(f) The materials used in construction are to be stated in so far as they can be ascertained and the general quality of workmanship is to be reported. The particulars required for forms FRE 6, FRE 7 and FRE 10 should be obtained by actual measurement at the ship and a new form FRE 9 should be forwarded whenever the ship is fully opened out for survey showing full details of the relevant items.

2.2.2.6 Survey of ships constructed of glass-reinforced plastic not fully opened out

(a) If the ship is not fully opened out the freeboard will be increased as required dependent upon the construction of the ship. The duration of the load line certificate will depend upon the report of the Surveyor and the extent to which the ship has been opened out.

(b) The Surveyor should complete forms FRE 6, FRE 7 and FRE 10 and report on form FRE 9 the action he has taken to ascertain the condition of the ship and that he has satisfied himself, as far as he is able, that the ship will be seaworthy and stable if loaded to the proposed load line for the period recommended having regard to the ship's age, construction, condition and intended service.

(c) The condition of the hull, the type of materials used in the construction and the scantlings of all accessible parts should be reported on form FRE9.

2.2.2.7 Ships constructed of other materials

Ships which are constructed of materials other than those already mentioned in this section may be considered for the assignment of freeboards in accordance with the Rules provided the MCA is satisfied with the type and characteristics of the materials used and the method of construction. In such cases the Surveyor should arrange for full details to be submitted to Headquarters for guidance.

2.3 Surveyors Report and Assignment of Freeboards (Regulations 7 and 8)

2.3.1 Documentation

2.3.1.1 A report on the initial survey referred to in Regulation 8 will generally consist of the following documents:

- form FRE 6 Surveys for Freeboard (Computation of Freeboard);
- form FRE 7 Record of Particulars Relating to Conditions of Assignment;
- form FRE 8 Report of Scantlings of Steel Ships; or
- form FRE 9 Report of Scantlings and Condition of Wood Ships; -form FRE 10 Report of Survey;
- form FRE 14 Stability Declaration; and
- loading and ballasting information as required by Regulations 32 and 33.

2.3.1.2 In general these documents will be submitted on completion of the survey but where a Surveyor doubts whether the ship complies with the requirements of Schedule 2 of MSN 1752(M) he should make an interim report to Headquarters so that an early decision can be made. Surveyors should note that where structural plans are submitted for examination and are approved by the MCA it will not be necessary to complete the various tables and diagrams on forms FRE 8 or FRE 9. The Surveyor may in such cases refer to the plan by title, number and date of approval in the appropriate section on the form. Following the initial survey the Surveyor should if appropriate confirm on the form that the ship has been built in accordance with the approved plans.

2.3.1.3 If at subsequent surveys alterations are found to have been made to the structure, details of the structural modifications should be included on the appropriate form or a modified structural plan should be approved. The Surveyor should if appropriate also endorse the form with regard to the satisfactory completion of the survey together with a recommendation as to the period of validity of the certificate.

2.3.1.4 When reporting the conditions of assignment it will not be necessary to complete the diagram on form FRE 7 Record of Particulars Relating to Conditions of Assignment if the Surveyor forwards a suitable plan showing all the features referred to in the form. An 'as fitted' general arrangement plan would be considered suitable for this purpose. The Surveyor should note that the details contained on form FRE 7 will be the determining factor in deciding whether or not a ship complies with the conditions of assignment. It is therefore essential that the various questions in the form are answered fully and that all particulars are provided as requested. In complicated cases when difficulty could be experienced in compiling the particulars of a condition of assignment (e.g. the construction of bulkheads at ends of superstructures), a drawing or plan which has been approved by the MCA and which shows the complete information may be referred to. In such cases a copy of the approved plan or drawing should be kept on board the ship and be available for reference at all times.

2.3.2 Stability

When a load line certificate is to be issued to a UK registered ship to which freeboards are being assigned as a 'new ship' the MCA must be satisfied that the stability of the ship complies with the minimum criteria laid down in paragraph 2(2) of Schedule 2 of MSN 1752(M). Part 5 of these Instructions gives full details of stability requirements.

2.3.3 Approval of stability

Where MCA approves the stability information the responsible Surveyor will notify the appropriate Assigning Authority by letter when he is satisfied from an examination of the stability information that the ship complies with the Rules relating to stability.

2.3.4 Loading and ballasting information (Regulation 33)

Type A ships and bulk carriers over 150 metres in length must carry loading and ballasting information. Where such ships are classed the relevant Assigning Authority will have approved this information. In the case of unclassified ships this information is to be submitted by the Surveyor to Headquarters for approval.

2.3.5 Load lines and marks

2.3.5.1 The Surveyor should inform the Owners or their agents on form FRE 11 when the MCA has approved the freeboards for the ship, deleting those load lines not assigned.

2.3.5.2 Passenger ships to which subdivision load lines have been assigned will ordinarily be marked with the load lines required under the Load Line Regulations as well as with the subdivision load line or lines. Where the lowest of the ordinary load lines is higher on the ship's side than the uppermost subdivision load line the latter should form part

of the same marking, the vertical line of the grid being extended downwards as necessary to reach the lowest subdivision load line. The subdivision load line or lines should appear on the after side of the vertical line.

2.3.5.3 Where the deepest subdivision load line coincides or nearly coincides with the Fresh Water line, the subdivision marking or markings may be indicated on the forward side of the grid by adding C; C.1; C.1, C.2, etc; or C.A, C.B, etc. as the case may be according to the Class of passenger certificate applicable to the ship. See also paragraph 5.3.2 of Instructions to Surveyors for Passenger Ships of Classes I, II and II(A), and paragraph 5.11.2 of Instructions to Surveyors for Passenger Ships of Classes III to VI(A).

2.3.5.4 The loading of a passenger ship will usually be governed by the subdivision load line or lines and the Owners may wish to dispense with the ordinary load lines on the grounds that they would never be applicable. Provided the uppermost subdivision load line is as low as, or lower than, the lowest load line computed under the Regulations the line through the centre of the ring may be marked on a level with the uppermost subdivision load line and the ordinary load lines omitted. The fresh water line, however, would be marked at the appropriate distance above the uppermost subdivision load line with a vertical line joining the forward end of the fresh water load line (F) to the forward end of the subdivision load line 'C.1'. In such cases the subdivision load line (or the uppermost subdivision load line if there is more than one) would be inserted in the load line certificate as the 'T', 'S' and 'W' line and the certificate endorsed as follows:

"When more than 12 passengers are carried the ship must comply with the conditions stated on the Passenger/Passenger and Safety Certificate."

2.3.5.5 Where no request is received from the Owner to dispense with the ordinary load lines and where the uppermost subdivision load line is not as low on the ship's side as the lowest load line computed under the Regulations all the lines (ordinary load lines and subdivision load lines) should be marked on the ship's side.

2.3.5.6 Where a ship is issued with a load line exemption certificate the markings, in general, will be the same as those required by Regulation 15(1). Where, however, the ship is assigned special freeboards which are less than those permitted by Regulation 7 the markings should comply with the requirements of Regulation 22(4).

2.3.5.7 Where the MCA is the assigning authority the disc should be marked with the letters DT.

2.4 Renewal Surveys and Annual Surveys of Ships (Regulation 8(1)(b) and (c))

2.4.1 General

The Owner or his agent must make application for the renewal or annual survey that is required under the regulations. The application should be accompanied by a fees deposit. Where the survey is not completed in one operation the whole survey must be commenced and completed in a period not exceeding three months. When such a partial survey has been carried out the Surveyor should state on form FRE 12 (Report of Annual Survey) the items which remain to be dealt with and inform the Surveyors at the port where the Owners propose to have the survey completed.

2.4.2 Requirements

2.4.2.1 At each renewal survey the Surveyor must ensure that the matters referred to in Regulation 6(1)(c) are in order and that the requirements of paragraphs 15 and/or 18 of Schedule 2 of MSN 1752(M) are met.

2.4.2.2 During the survey the Surveyor should satisfy himself that where enclosed superstructures have been taken into account in the construction of the cross curves of stability the closing appliances fitted to any openings therein are fully effective and that no alterations have been made.

2.4.2.3 If the Surveyor finds that alterations or additions have taken place which would materially affect the stability (e.g. significant increase in the light weight of the ship) he should ask for revised stability information to be submitted for approval.

2.4.2.4 The characteristics and details of the fittings, appliances and arrangements approved for the ship, which are recorded on form FRE 7 (Record of Particulars Relating to the Conditions of Assignment) are to be checked carefully at each periodical inspection.

2.4.2.5 No hatchway or fitting in its vicinity should be inspected when cargo is being worked at the hatchway if this interferes with effective inspection. Advantage should be taken of any opportunity to hold the inspection when the ship is in dry dock.

2.4.3 Items to be given particular attention

2.4.3.1 Hatchways in Position 1 and Position 2 and hatchways within superstructures which are not enclosed superstructures.

(a) The Surveyor should ensure that all the materials, bearing surfaces and fittings associated with hatches, including rollers, chains, hatchway coamings, beams, fore-and-afters, covers, tarpaulins, battens and securing arrangements are in good and

effective condition. The whole arrangement should be assembled in place for inspection either before or after the examination of the individual parts. Steel covers and their components are to be examined carefully in place and where the Surveyor has doubts as to the effectiveness of the sealing arrangements he may require hose tests to be carried out. Where hatch coamings are of a height less than that required under paragraph 6(1)(a) of Schedule 2 of MSN 1752(M) or where in exceptional circumstances flush hatches have been permitted the Surveyor should survey these hatches for their effectiveness and, if extensive repairs have been carried out, hose test and report details on FRE 12.

(b) The Surveyor should report any alterations which have been made to the closing appliances of enclosed superstructures. Where alterations have been made to the closing appliances reducing the effectiveness of such superstructures the Surveyor should request modification or replacement to meet the Regulation requirement. Alternatively the Owner should be advised that the ship will be assigned an increased freeboard and that appropriate action will be required to ensure compliance with the Regulations in respect of any hatchway or other openings leading below the freeboard deck fitted within the superstructure.

2.4.3.2 Openings in the ship's side below the freeboard deck and in the sides and ends of enclosed superstructures

Means of closing these openings are to be examined carefully in place and hose tested if considered necessary to ensure water tightness or weather tightness as appropriate.

2.4.3.3 Machinery casings, companionways and deckhouses

Casings protecting machinery openings in Position 1 and Position 2 and companionways, whether separate or within deckhouses, are to be examined ensuring that their sills, doors, fastenings, etc. continue to be effective.

2.4.3.4 Freeing port shutters

The Surveyor should ensure that the shutters hang freely and that any fittings for retaining them in the closed position will not prevent them from opening if a substantial amount of water is shipped. It is recommended that ships operating in areas subject to icing should not have freeing port shutters.

2.4.3.5 Ventilators and air pipes

The Surveyor should ensure that the closing appliances e.g. ball-valves, hinged gasketed plates, flap valve steel covers etc. are satisfactorily maintained and are effective.

2.4.3.6 Type A Ships and Type B Ships with reduced freeboards and Type B ships with timber markings

The Surveyor should ensure that all fittings or appliances required by Parts II, III and IV, as appropriate, of Schedule 2 of MSN 1752(M) are in good condition.

2.4.3.7 Departures from recorded conditions of assignment

Where alterations to the conditions of assignment have been made the alterations are to be recorded on form FRE 7 (Record of Particulars Relating to Conditions of Assignment). Where these alterations may affect the position of the load lines the case is to be submitted to Headquarters so that new freeboards may be considered.

2.4.3.8 Bilge keels on steel or aluminium alloy hulls

At renewal surveys or on any other occasions when the ship is seen out of water the bilge keels should be closely examined for damage and cracks, either of which may be the source of fatigue and brittle fracture of the shell plating. Any repairs should be carried out paying full attention to welding details and procedures and with the Surveyor's explicit approval. The same care should be taken in dealing with other shell attachments.

2.4.4 Load line marks

2.4.4.1 The positions of the load line marks and the deckline are to be checked at each annual survey and, if necessary, they are to be re-marked and re-painted.

2.4.4.2 "Permanently marked" is considered to include welding of the marks on the sides of the ship provided the usual precautions as to material, electrodes etc, are observed.

2.4.5 Endorsement of certificates, completion of report etc.

On completion of the annual survey if the Surveyor is satisfied that the load line certificate should remain in force he/she will:

2.4.5.1 return the ship's copy of form FRE 7, suitably endorsed, to the Master drawing his attention to the need to retain this document on the ship;

2.4.5.2 endorse the certificate and the certified copy in possession of the master, and

2.4.5.3 submit form FRE 12 (Report of Annual Survey) to Headquarters and return the file copy of FRE 7.

2.5 Inspections (Section 258 of the Act)

2.5.1 This Section of the Act empowers MCA Surveyors to go on board any ship at all reasonable times to verify that the provisions of the Regulations are complied with, and so that the inspections required under Port State Control legislation may be carried out.

2.5.2 Limitations apply to the inspection of ships possessing valid Convention certificates and must be strictly adhered to, noting that in paragraph 2.5.3 below the word "alterations" embraces "deterioration."

2.5.3 If a valid Convention Certificate is produced, this inspection shall be limited to seeing that:-

2.5.3.1 the ship is not loaded beyond the limits allowed by the certificate;

2.5.3.2 lines are marked on the ship in the positions of the load lines specified in the certificate;

2.5.3.3 no material alterations have taken place in the hull or superstructures of the ship which affect the basis on which any of those lines have been marked; and

2.5.3.4 the fittings and appliances for the protection of openings, the guard rails, the freeing ports and the means of access to the crew's quarters have been maintained on the ship in as effective a condition as they were when the certificate was issued.

2.6 Conditions of Assignment (Part IV of the Regulations)

2.6.1 Requirements relating to the assignment of freeboards (Regulation 25)

2.6.1.1 All 'new' load line ships (i.e. those whose keels were laid or which were at a similar stage of construction on or after the material date must comply with all the requirements of Schedule 2 of MSN 1752(M) relevant to their type.

2.6.1.2 'Existing Ships' (i.e. those whose keels were laid or which were at an equivalent stage of construction before the 21st July 1968 (the material date) must comply with such of the requirements of the 1959 Load Line Rules as are applicable in their cases. However, Regulation 29 provides that where an 'existing ship' is to be assigned a freeboard as a 'new ship' computed in accordance with the provisions of Schedule 4 all the requirements of Schedule 2 applicable to its type

must be met. This policy should be applied no matter how small the difference in assigned freeboards resulting from the regulation change

2.6.1.3 Where however a ship is intended to operate only in restricted areas of a sheltered nature the MCA is prepared to consider applications for a departure from strict compliance with all the Rule requirements.

2.6.2 Record of particulars (form FRE 7)

In determining whether or not a ship complies with the conditions of assignment as laid down in Schedule 2 of MSN 1752(M), and referred to in Regulation 27, the 'Record of Particulars Relating to the Conditions of Assignment' represented by form FRE 7, will be a determining factor and Regulation 26 should be carefully studied.

2.6.3 Information relating to the stability, loading and ballasting of ships (Regulation 32)

2.6.3.1 Under the Regulations all UK registered ships to which the Regulations apply must carry stability information in accordance with Regulation 32 and Schedule 6 of MSN 1752(M), and information as to loading and ballasting of ships as required by Regulation 33. Both the content and the presentation of this information must be approved.

2.6.3.2 The Surveyor should therefore ensure that the stability information is presented in an acceptable manner and that the various conditions of loading are derived from accurate basic data. The formal approval of the stability data will not be given until the basic elements of stability, the development of the information, the holding of an inclining test where necessary, and the results obtained from the foregoing have been proven to the satisfaction of the Surveyor.

2.6.3.3 Builders and consultants are advised to submit preliminary intact, and where applicable, damage stability data for new buildings at an early stage of construction, preferably no later than six weeks prior to the inclining test (where applicable). Drawings necessary to define the vessel and confirm hydrostatics, KN values and tank capacities should also be submitted at an early stage. Where a final version of the information is received at an advanced stage, in order to permit the vessel to enter service without delay provisional approval of the information may be given, subject to:

(a) incorporation of any adjustments deemed necessary by the Surveyor; and

(b) basic data including hydrostatic information, KN's, lightship particulars and tank capacities having been verified.

In such cases the information should be marked "PROVISIONAL STABILITY [AND LOADING/BALLASTING] INFORMATION ONLY, PENDING FORMAL APPROVAL BY [MCA] [OTHER ASSIGNING

AUTHORITY]" and be dated and signed on behalf of the approving authority.

Provisional information should be substituted by fully approved information at the earliest possible opportunity.

2.6.4 Delegation of Stability Approval

2.6.4.1 The regulations (Regulation 32(5)) provide for the delegation of stability approval to Assigning Authorities for certain categories of ships. Ships within those categories may be dealt with either by the MCA or the Classification Society acting as Assigning Authority, at the Owner's option. Ships outside those categories must have their stability information approved by the MCA.

2.6.4.2 On receipt of the application for survey the Surveyor should establish with the Owner or his agent which option is to be taken. If the Classification Society is chosen the Surveyor should inform the Society immediately.

2.6.5 Information as to loading and ballasting of ships (Regulation 33)

In the case of UK registered ships the application of Regulation 33(3) means that in general, all such information will be approved by the Assigning Authority before including it in the statutory stability information.

2.6.6 Endorsement of the information in respect of Intact Stability Criteria

2.6.6.1 In addition to the stamp of approval, the following endorsements should be made on the front cover of the booklet;

(a) an additional stamp to be used in conjunction with the Load Line stamp for vessels where compliance with paragraph 2.2 of Schedule 2 is impossible due to the special nature of the vessel. The additional stamp will take the following form:-

"STABILITY INFORMATION APPROVED USING
COMPLIANCE WITH
.....
AS AN EQUIVALENT PROVISION UNDER
REGULATION 34 (A)
OF THE MERCHANT SHIPPING (LOAD LINE)
REGULATIONS 1998 TO THE REQUIREMENTS OF
PARA 2(2) PART I OF SCHEDULE 2 OF
M NOTICE MSN 1752(M)"

1. For offshore supply vessels the stamp to be completed as follows:

.....COMPLIANCE WITH "PARA 25.2 OF IMO RES A 469 (XII)"

2. For unmanned pontoons

.....COMPLIANCE WITH "PARA 5.5 OF IMO MSC/CIRC 348"

(b) "No addition or amendment is to be made to this document without prior approval of the MCA."

(c) "Number of pages..... "

(d) "Index of separate documents."

2.6.6.2 Each page should be numbered and the back of each page stamped at the bottom left hand corner with an MCA stamp. As an alternative to the stamping of each page the books may be drilled, and secured by means of a wire and lead seal closed and embossed with the MCA emblem. Builders and consultants should be requested to supply books already drilled to facilitate sealing.

2.6.7 Treatment of grain loading conditions

2.6.7.1 The information and loading conditions relating to the carriage of grain cargoes may be provided in a separate booklet which is supplementary to the stability information booklet required to comply with the Load Line Regulations.

2.6.7.2 Where a stability Information Booklet includes grain loading conditions intended to demonstrate compliance with statutory grain loading requirements then these conditions are considered as Service Conditions under paragraph 10(1)(d) of Schedule 6 of MSN 1752(M). Such loading conditions, in addition to complying with the appropriate grain loading requirements, must meet the requirements of Schedules 2 and 6 of MSN 1752(M) and are also approved under the load line approval stamp with which the booklet is endorsed.

2.6.7.3 Where grain loading information is provided in a separate booklet both booklets should be submitted, and both will be stamped with the load line approval stamp in addition to any grain loading approval stamp.

2.6.8 Treatment of SOL AS or MARPOL damage stability conditions

2.6.8.1 The information and loading conditions relation to damage stability requirements deriving from SOLAS, MARPOL or other instruments may be provided in a separate booklet supplementary to the stability information booklet for compliance with load line regulations.

2.6.8.2 Where a stability information booklet includes damage stability conditions for compliance with SOLAS, MARPOL or other instruments, such conditions are considered Service Conditions under paragraph 10(1)(d) of Schedule 6 of MSN 1752(M). Such loading conditions in addition to complying with the appropriate damage stability requirements of those instruments, must meet the requirements of Schedules 2 and 6 of MSN 1752(M) and are also approved under the load line approval stamp with which the booklet is endorsed.

2.6.8.3 Where such damage stability information is provided in a separate booklet both booklets should be submitted, and both will be stamped with the load line approval stamp in addition to any MARPOL or other stamp.

2.6.9 Examination of Stability Information for ships on transfer to UK registry

2.6.9.1 The Surveyor should examine the stability information on board to establish if it is stamped approved by another Administration and if an inclining experiment report is included. He/she should ensure that it is presented in English, gives adequate guidance to the Master and that the loading conditions shown meet the necessary stability standards for the type of vessel. The information should be sufficient to enable the Master to calculate any alternative loading condition to that shown in the booklet. Subject to his/her satisfaction the Surveyor should mark the information "Provisional" and sign and date the booklet. A report on this action should be made to Headquarters. The Owner should be informed that a final stability book is to be submitted to the Surveyor for approval showing compliance with the required stability standards and presented in a format as recommended in the Model Stability Information Booklet. The Owner should supply the following plans for checking purposes:-

- Lines Plan
- General Arrangement
- Structural Plan
- Trim and Stability Book as above

2.6.9.2 For all ships the inclining experiment report should be examined with reference to Part 6, paragraphs 6.5 and 6.6 of these Instructions. In the case of a passenger ship transferring to UK registry reference should also be made to Regulations 37 and 38 of the Merchant Shipping (Passenger Ship Construction: Ships of Classes I, II and II (A)) Regulations 1998.

2.7 Greater than Minimum Freeboards (Regulation 30)

2.7.1 Under this Regulation Owners may request the assignment of freeboards greater than minimum. Where the difference between the assigned summer freeboard and what would be the minimum summer freeboard is substantial the MCA may in exceptional cases allow some departures from full compliance with the requirements of Regulation 25 and Schedule 2. Provision is made for

these departures under paragraph 31(b) of Schedule 2 whereby freeboards to be assigned to the ships are increased to such an extent as to satisfy the MCA that the safety of the ship and protection afforded to the crew will be no less effective than would be the case if the ship complied fully with the requirements of Regulation 25 and Schedule 2 of MSN 1752(M) and there had been no increase in the freeboard.

2.7.2 In the general sense, however, the Regulations do not allow compensation for inefficient arrangements to be made by an increase of freeboard. If a ship is assigned a greater than minimum freeboard any relaxations in the conditions of assignment will be considered by Headquarters on the basis of the merits of each particular case having regard to the ship's intended service. See Regulation 30(2)(b) regarding timber allowance.

2.7.3 Since the reason for assignment of greater than minimum freeboards is likely to be present whether or not timber deck cargoes are carried, timber load lines will be inapplicable. See regulation 30(2)(b).

2.8 Less than Statutory Minimum Freeboards

In services within particular limits of operation and weather conditions the MCA will be prepared to consider a ship for a freeboard less than the statutory minimum provided the strength arrangements and stability are acceptable. Each case should be submitted to Headquarters for consideration; the types of ships which may be considered are:

2.8.1 hopper dredgers; and

2.8.2 barges and hopper barges which usually proceed in winter to the Summer Category D limits, for example, on the Humber and Thames. Reference should also be made to paragraph 5.3.