

CHAPTER 3

PERIODIC SURVEYS OF LIFE-SAVING APPLIANCES

3.1 General

When carrying out a survey, surveyors should take the opportunity to impress upon masters and owners or their representatives the necessity and their statutory obligations to frequently inspect all life-saving appliances and maintain them in accordance with the "Instructions for On-board Maintenance". (See paragraph 21.3.)

3.2 Lifeboats

3.2.1 Method of survey

When ships are under survey for a Passenger and Safety Certificate, Passenger Certificate, a Cargo Ship Safety Certificate or Form MSF 1102 the lifeboats should be lifted clear of the chocks and carefully examined both inside and outside.

3.2.2 Portable air cases

In passenger ships, if portable air cases have been fitted they need as a general rule to be removed from more than half the total number of lifeboats at each survey provided that the surveyor is satisfied with the general condition of the lifeboats. If the surveyor is not satisfied he should require such larger proportion to be opened up for examination as he considers necessary. A complete examination of all lifeboats must, however, be made at intervals of not more than two years. In all other ships under periodic survey all the lifeboats should be opened up and portable air cases removed if fitted. Portable air cases of lifeboats should be carefully examined and tested if thought necessary by submersion in water. Care should be taken to prevent damage to portable air cases when replacing them in lifeboats. A final inspection should be made to ensure that their securing arrangements are entirely satisfactory.

3.2.3 Built-in buoyancy air cases

Where lifeboats are fitted with built-in buoyancy compartments the surveyor should, after careful examination, carry out such tests, which may include tests by air pressure, as he considers necessary. A pressure of 10 kgf/m² is sufficient for this purpose and should not be exceeded. In order to avoid overstressing the compartments, it is strongly recommended that the pressure should be applied by means of a hand pump in conjunction with a suitable calibrated mercurial U-tube for enabling small differences in pressure to be read. Leakage where indicated, may be located by the application of soapy water to the seams.

3.2.4 Solid buoyancy

Where solid buoyancy is fitted it will normally be unnecessary, to remove this for inspection at each survey unless the surveyor has reason, because of the condition or general appearance of the boat, to suspect defects. It should be noted that some of the earlier types of solid buoyancy, e.g. polystyrene, were not fully oil resistant and were subject to damage from oil leakage in motor propelled lifeboats. Partial opening up should be required to facilitate examination of such material and any defective portions should be replaced by an accepted oil resistant material which is not chemically incompatible with existing material.

3.2.5 Lifting hooks

Careful attention should be paid to the condition of lifting hooks and their connection in all lifeboats. Where signs of corrosion are evident in the lifeboat lifting connections the lifting hooks should be removed and one or more lifting hook connection bolts through keel backed out for examination. Where disengaging gear is fitted surveyors should carry out and witness tests in accordance with paragraph 9.8. See also Merchant Shipping Notices Nos. M.1492 and M.1523.

3.2.6 Steel lifeboats

Rust and scale should be removed from steel lifeboats before any detailed inspection is carried out.

3.2.7 Aluminium alloy lifeboats

Aluminium alloy lifeboats should be carefully examined for condition, particularly behind the skates, their securing wires and also gripe wires where metals other than aluminium may have been in contact with the hull of the lifeboat. Surveyors should pay special attention to the riveting of aluminium alloy as in some cases rivets of NR6 material were used which have proved to be unsatisfactory. Where re-riveting is found to be necessary only rivets of NR5 material should be used.

3.2.8 Glass-reinforced plastic lifeboats

Glass-reinforced plastic lifeboats should be carefully examined for fractures particularly in garboard attachments of built-in buoyancy and the junction of thwarts and side seats. Fractures may also have occurred in the horizontal and vertical surfaces of side buoyancy and in the gunwale, usually at positions approximately one-quarter of the length of the lifeboat from the bow or stern. Repairs should be carried out as recommended by the lifeboat manufacturer to the satisfaction of the surveyor. If repairs are extensive a 25% overload strength test may be necessary on completion (see paragraph 4.1.6.1).

3.2.9 Wood lifeboats

Wood lifeboats are to be carefully examined for timber decay, and if found, the affected timber should be cut out well beyond the affected area and replaced.

3.2.10 Repairs

Where defective portions are found in lifeboats, surveyors should refer to the relevant paragraph of these Instructions and ensure that repairs are effected with the materials and in accordance with the procedure detailed therein. All repairs, renewals, etc. to the hulls of fibre-reinforced plastic lifeboats should be carried out by experienced laminators.

3.2.11 Lowering of lifeboats at survey

As many lifeboats as possible should be lowered into the water at the time of survey to test not only the watertightness of the lifeboats but also the operation and efficiency of the lowering gear.

3.2.12 Stowage of lifeboats and embarkation

Surveyors should be guided by the relevant paragraphs in Chapter 18 of these Instructions in respect of the stowage arrangements for lifeboats. The means to be provided for embarkation into lifeboats together with the illumination of stowage and launching positions, are also set out in Chapter 18.

3.3 **Motor and other mechanically propelled lifeboats**

3.3.1 Motor lifeboats and rescue boats

The machinery of motor lifeboats and rescue boats should be inspected. Engine running and manoeuvring trials should be carried out at each survey. The engine need only be dismantled for examination if the surveyor has reason to doubt its condition and performance. The survey should include the fuel tanks, their filling and relief arrangements, the fire extinguishing appliances and, where fitted, the searchlight, the radio battery, etc.

3.3.2 Mechanically propelled lifeboats

Propelling gear should be inspected at each survey and tried preferably afloat, for ahead and astern operation.

3.3.3 Totally enclosed lifeboats

In addition to those tests described in paragraph 3.3.1 when a totally enclosed lifeboat is in the water the opportunity should be taken to run the engine to full operating temperature to see if fumes develop from the exhaust system. Surveyors should check that:

- there are no exhaust system leaks;
- there are no oil or diesel leaks and the engines are clean;
- the exhaust and its lagging runs clear of the bilge water area and that there is little risk of bilge water contacting the engine manifold and exhausts when the boat is in use;
- exhaust lagging is clean and dry and is provided with suitable protection;
- bilges are kept dry and clear of oil; and
- any paint used on engines, manifolds and exhausts does not give off fumes when it is heated.

3.3.4 Outboard motors for rescue boats and inflated boats

Surveyors should inspect and conduct running trials on outboard motors for rescue boats and inflated boats at each survey. Servicing of outboard motors is dependent upon the amount of use they receive, but in any case should be serviced annually. A record of the servicing should be kept. The fire extinguishing appliances and arrangements for the stowage of petrol should also be examined (see paragraphs 5.2.2.6 and 6.4.9).

3.4 **Lifeboat equipment and fittings**

3.4.1 General

All lifeboat equipment and fittings should be checked for condition and compliance with the Regulations. The surveyor should ensure that each item meets the requirements set out in the relevant paragraphs of these Instructions.

3.4.2 Masts and sails, etc.

Masts and sails where provided should be rigged, exposure covers where required should be placed in position, rudder and tiller shipped and grab lines and their means of attachment to the boat examined.

3.4.3 Skates

Skate securing arrangements where fitted should be examined and their means of release from the lifeboat tested for satisfactory operation. The shell of the boat in way of the skates should be carefully examined.

3.4.4 Water and ration tanks

Fresh water tanks and ration tanks should be examined at each survey and their markings renewed if necessary. Filling plugs and aperture covers should be well fitting and properly rubbered to prevent the entry of contaminants. Portable plastic water containers should be examined to ensure that the dipper is secured by its lanyard or chain to the inside of the larger of the two caps. The surveyor should be satisfied that fresh water tanks are clean and that the water is changed frequently.

3.4.5 Rations

Should be examined for their condition and those defective should be replaced. Surveyors should ensure that the scale of rations is provided in accordance with the 1999 Regulations. (See paragraph 11.6).

3.4.6 Radio equipment

The examination and testing of all lifeboat radio equipment will be carried out by a Radio Surveyor as part of the Safety Radio Certificate survey or upon request. MCA surveyors should ensure that battery charging arrangements for the two-way radio telephone sets are in order and that stowage arrangements for radar transponders (SARTs) are satisfactory. The float free arrangements for the Satellite Emergency Position Indicating Radio Beacons (EPIRB) are in good condition and working order. Hydrostatic release units used on EPIRBs should be serviced or replaced in the same way as those required for liferafts.

3.4.7 Special equipment for fire protected lifeboats

Surveyors should ensure that any air cylinders fitted in the lifeboats are fully charged and that the air system is in working order. Closing arrangements for ventilators, and spray pumps and associated equipment should be examined and tested. Whenever possible the spray equipment should be tested with the lifeboats afloat. Surveyors should also ensure that the necessary instructions and fittings are aboard the ship to enable the ship's staff to recharge and test the equipment at intervals specified by the manufacturers (see paragraph 4.12).

3.4.8 Seat belts

Surveyors should ensure that seat belts and their fastenings together with their anchor points and head restraints, where fitted, are in good serviceable condition.

3.5 Inflatable liferafts, rigid inflated rescue boats and inflated boats

3.5.1 General

The survey of inflatable liferafts and boats and their equipment including any provisions should be carried out at approved service stations. (A list of approved manufacturers' service stations is published in the form of a Merchant Guidance

Notice from time to time, the latest being MGN 62(M+F). Surveyors should ensure that inflatable liferafts and boats are serviced and tested strictly in accordance with the procedure set out in the relevant maintenance manuals. Particular attention should be given to the packing and sealing of inflatable liferafts in their containers (or valises where still used and accepted).

3.5.2 Stowage of inflatable liferafts

Careful consideration should be given to the siting of inflatable liferafts for ease of launching, particularly in those Classes of ships where they must be stowed in position such that they can be readily transferred to the water on either side of the ship. Whilst it is considered that the practice in small ships of stowing boats and liferafts alongside the accommodation is generally most desirable the concentration of these appliances in small areas is to be avoided if possible. It is impracticable to lay down precise instructions as to where liferafts should be sited but in small ships, generally, the liferafts should not be placed alongside the boat(s). Where more than one liferaft is provided they should be distributed on each side of the ship and so sited, fore and aft, that an incident (fire or collision) is unlikely to make all liferafts inaccessible. For further guidance see paragraphs 7.7.1 and 7.7.4.3.

3.5.3 Quick release of liferafts

The surveyor should examine the arrangements for affecting quick release of each liferaft from its stowage and in the case of passenger ships where chutes or ramps are provided the operation of the release arrangements should be examined.

3.5.4 Stowage of inflated and rigid inflated rescue boats

Surveyors should be guided by the relevant paragraphs in Chapters 5 and 6 of these Instructions in respect of the stowage arrangements for inflated and rigid inflated rescue boats and should ensure that the securing arrangements are adequate in every case, and are not damaging the craft.

3.5.5 Embarkation

The means to be provided for embarkation into liferafts, inflated and rigid inflated rescue boats, together with the illumination of stowage and launching positions, are set out in Chapter 18.

3.6 **Buoyant apparatus**

Buoyant apparatus, when fitted, should be carefully inspected at every survey of life-saving appliances. If air cases are fitted not less than 25% of the total number of units in a passenger ship, and the cases of not less than 50% of the total number of units in any other ship should be removed and tested by submersion in water at each periodic survey. If on examination the surveyor considers it necessary he should require a higher proportion to be opened out in order to satisfy himself as to the general condition. Particular attention should be paid to the condition of the

outer surface of buoyant apparatus made of plastic materials and to any plastic foam buoyancy blocks which may be provided. Buoyant apparatus constructed of wood should be carefully examined for timber decay and if found the affected parts should be cut out well clear of the affected area and suitably repaired.

3.7 Lifebuoys, lifebuoy lights, smoke markers and lines

3.7.1 General

All lifebuoys together with their lights, smoke markers or lines, should be inspected and any defects or deficiencies made good.

3.7.2 Lifebuoy lights - electric dry battery type

Lights using dry batteries should be opened up for examination and attention paid to the condition of rubber or similar seals, the batteries and the bulb. The lights which are normally operated by turning upside down should be tested when re-assembled. Electric batteries should be renewed at regular intervals not normally exceeding one year. The surveyor should ensure that a supply of spare bulbs and batteries is provided.

3.7.3 Lifebuoy lights - sea-activated cell type

3.7.3.1 Sea-activated cell type lights should be carefully examined as they can be damaged by being accidentally dropped or otherwise misused.

3.7.3.2 The filament of the lamp can be tested by applying 1.5 to 3 volts from an external supply across the bulb terminals. If the lamp does not light it should be replaced and the plastic dome screwed back tightly on to the rubber washer. If any of the sealing buttons are missing or displaced or if the sea-activated cell is in any way suspect it should be replaced.

3.7.4 Lifebuoy lights - calcium type

The seams and upper and lower solder seals should be carefully examined periodically as corrosive action can make some types of lifebuoy light dangerous. The wire spoke which passes through the signal from the upper ring should be inspected to ensure that it terminates flush with the lower solder seal; if the signal has been strained the lower end of the wire spoke will protrude below the surface. If any doubt exists as to the condition of the chemical signals they should be replaced and in any case they should be renewed at least once every two years.

3.7.5 Quick release of lifebuoys

Surveyors should satisfy themselves, if necessary by a practical test, that a lifebuoy in a quick release position will fall immediately the securing pin is released or withdrawn. If it fails to do so either the release chute should be modified or another type of lifebuoy substituted.

3.8 **Lifejackets**

3.8.1 General

Every lifejacket should be carefully examined at each survey and replaced if not entirely satisfactory. If the surveyor suspects faulty manufacture a report should be made to headquarters. The surveyor should also be satisfied with the lifejacket stowage arrangements. The condition of all attachments should be checked including whistle, lights where fitted and also retro-reflective material.

3.8.2 Inflatable lifejackets

The survey of inflatable lifejackets should be carried out at approved service stations. Surveyors should ensure that inflatable lifejackets are serviced and tested strictly in accordance with the procedure set out in the relevant service manuals. The condition of the inflation unit in addition to the attachments listed in paragraph 3.8.1 should also be checked. (A list of approved manufacturers' service stations is published in the form of a Merchant Guidance Notice from time to time, the latest being MGN 62(M+F).

3.8.3 Illustrated donning instructions

Surveyors should ensure that illustrated donning instructions are posted up in conspicuous places throughout the passenger and crew accommodation. These illustrations should be suitably protected to prevent defacement and loss. In passenger ships where assembly stations are under cover and there are adequate crew members to deal with the number of passengers at each station conventional arrangements for assisting passengers with their lifejackets should suffice. However, on passenger ships where the proportion of passengers to crew is large, where assembly stations are on open decks, where there is a small number of lifejackets distribution points and where there are large passenger numbers, surveyors should ensure that the conventional lifejacket donning notices be supplemented by poster type instructions at the lifejacket distribution points and at other suitable positions, e.g. at assembly stations (if different) and in other public spaces. Where appropriate the poster could also be on the inside of lifejacket locker lids or doors. The poster need not necessarily be merely enlarged editions of the donning notices but could be an abbreviated form of the actual instructions supplemented say by one simplified illustration. The object of having such posters is twofold. Firstly that a larger number of passengers can make use of them than is possible with the conventional donning notices, which is more suitable for individual use (or by a very small group who can get close enough to read the instructions) and secondly

that it will be more likely the instructions will have been read before any emergency occurs.

3.9 Line-throwing appliances and pyrotechnic signals

All line-throwing appliances and pyrotechnic signals should be carefully examined at each survey. If any doubt exists as to the condition of line-throwing appliances or pyrotechnic signals at any time within the stipulated period of life, they should be replaced.

3.10 Emergency signals

General emergency alarm systems, emergency means of two way communication and public address systems or other equivalent means of two way communication fitted, in compliance with regulations 7(15)(a), 8(18)(a), 10(12)(a), 33, 42(16)(a), 43(17)(a), 44(18)(a), 45(11)(a), 47(3)(a), 47(12)(a) 63(16), 64(18), 65(18), 66(11) and 68(3) of the Merchant Shipping (Life-Saving Appliances For Ships Other Than Ships of Classes III to VI(A)) Regulations 1999 and regulations 5(6)(a), 6(8), 7(2)(d), 8(2)(e), 8(3)(e) and 9(2)(e) of the Merchant Shipping (Life-Saving Appliances For Passenger Ships of Classes III to VI(A)) Regulations 1999 as appropriate should be tested for satisfactory operation at weekly intervals.

3.11 Lifeboat and rescue boat davits, liferaft launching appliances, winches, lowering and release gear (See Chapters 9 and 18 also for details.)

3.11.1 General

3.11.1.1 Surveyors should check that arrangements for operational readiness, maintenance, shipboard periodic inspections and servicing manuals are in place. Ships officers and crew should be aware of the Training Manuals and Instructions for on-board maintenance for these appliances including release hooks and that log records of inspections and maintenance are kept up-to-date. (See Chapter 21.)

3.11.1.2 The lifeboat davits, the lowering gear including blocks and falls, the fairleads, the tricing gear, the bowsing-in tackles and the boat lowering winches should be inspected at each survey. Particular attention should be given to parts of the davits structure and wire rope falls which are normally out of sight and to the security of the attachment of the ends of the falls. In the case of a limited number of specialised designs of davits which requires some structural dismantling to enable a proper examination of all parts of the davit structure to be made, it should be arranged that such thorough examination be made at intervals not normally exceeding five years. It should be seen that sufficient attention has been given to the lubrication of the working parts and that no grease nipples have been removed or painted over. (See also paragraphs 9.9.1 to 9.9.7.6.)

3.11.1.3 Turning out and boat lowering tests or proof tests should be witnessed, and the remote control of pumps discharging in way of lifeboats and liferafts, and the limiting devices to prevent the overloading of the falls in gravity davits should be tested by the surveyor at each survey.

3.11.1.4 While turning out and boat lowering the release gear should be tested for on-load simultaneous release (if fitted) when the keel of the boat is near the water. After this is demonstrated to be satisfactory, the boat can be lightened if it was weighted, and hooked up again to be hoisted by the winch within its designed SWL. It should be specially noted that the winch is normally designed to hoist a lifeboat with its launching crew only and that hoisting with additional persons or load could damage the winch and be dangerous for persons in the boat. It should also be specially noted that following a satisfactory release of the boat from the hooks it is also essential that re-attachment of the falls to the hooks and proper locking of the hooks and the operating lever, as advised by the manufacturer in the instruction manual, is carried out. Many accidents can be attributed to the eagerness to bring the boat back on board after a satisfactory boat drill and overlooking the importance of relocking properly. It may be that a fault in the release gear develops after release so that it cannot be re-set and locked properly in which case the hooks should not be used until the fault has been rectified. The boat can be hoisted back on board by using the maintenance lugs and pennants. Once the boat can be safely handled by the shipboard winch, the off-load release test may be carried out by lowering the boat in water until it is waterborne and then operating the release mechanism. Note that the precautions and checks for re-setting and re-locking of the hooks and the operating lever is applicable after every release whether on-load or off-load or whether the boat is loaded or light. (See also paragraphs 9.8.1 and 9.8.2.)

3.11.2 Wire rope falls

3.11.2.1 Wire rope falls (Regulation 84(3)) should be reversed after 30 months in service and renewed after a further 30 months giving a total life span of five years. If on removal from the davits for reversal after 30 months service, those parts of the falls that have been exposed to the weather are found to have deteriorated to an extent likely to affect their strength the surveyor should not permit reversal, and should require the falls to be renewed. Where davits, which employ a single length of wire rope fall, middled between the davits with the two ends attached to the winch, are fitted, reversal can be achieved by cutting the falls at the centre of its length and splicing the ends which were originally on the winch barrels with thimbles to form eyes. The eyes can then be joined with a suitable shackle and the pin fitted with a satisfactory locking arrangement. Compliance with Schedule 6, Part 1, paragraphs 4(3) and 4(4) of MSN 1676(M) as appropriate is required in respect of the spliced connection and surveyors should be satisfied with the components used.

3.11.2.2 It may be that the reversal of the falls cannot be carried out safely or conveniently as required and in such event the MCA has recognised the

equivalent of renewing the falls after four years instead of five provided thorough inspection does not reveal any deterioration. Shipowners requiring the benefit of such equivalence should contact the nearest Marine Office. Surveyors attention is also drawn to Part 2, paragraph 2.5 of MCA - Survey and Inspection Policy Instructions.

3.11.2.3 Regulation 84(3) also allows the use of stainless steel falls without renewal but this is dependent on the service life recommended by the manufacturer. As there are many kinds of stainless steel, only the very best quality is likely to have a service life greater than five years. Stainless steel falls are subject to heavy pitting in inside areas where this is not easily visible by simple outside inspection and if no service life is recommended by the manufacturer for marine use, stainless steel falls should be treated no differently than galvanised steel falls for renewal purposes.

3.11.3 Winches

3.11.3.1 A proportion of boat winches should be opened up for thorough examination at each survey, the programme for this work should be arranged in such a manner that every winch is opened up for examination at intervals of not more than four years.

3.11.3.2 Where winches are used for lifeboat/passenger launches or any other highly worked survival craft or work boat the winches should be opened up for thorough examination every two years. In addition, on all winches which are fitted with a roller ratchet mechanism the opportunity should be taken to renew the roller retaining springs at these examinations.

3.11.3.3 There have been reports of some hand brake failures during tests of this type of winch. The winch is used normally in conjunction with a single arm davit for handling rescue boats. The winch was originally type approved by the MCA in 1979 for a maximum load of 500 kg and the design is such that an externally fitted spring tension holds the hand brake in effective position. The failures reported are for winches which have been more recently manufactured and accepted for loads higher than 800 kg.

3.11.3.4 Investigations of failure suggest that the spring tension is reduced over time until the hand brake is no longer able to hold a heavy load. In each case the replacement of the spring rectified the fault. The MCA has therefore informed the manufacturer that such a design of winch will no longer be accepted for UK Registered Vessels for a working load over 500 kg.

3.11.3.5 For vessels which already have these winches fitted for loads higher than 500 kg acceptance will be continued on condition that:-

- the spring is inspected at least once a week if the equipment is not in use, and inspected prior to commencement of any operation, and

- sufficient spare springs are carried on the vessel to replace any faulty or suspected spring.

3.11.3.6 Although no adverse reports have been received for the winches where the working load is 500 kg or less, the winch operators are nevertheless advised to inspect the external spring regularly and carry spares.

3.11.3.7 Winches used for any type of survival craft, work boat or launch should, if fitted with a roller ratchet mechanism, have such mechanisms regularly maintained. The ratchet mechanisms should never be packed with grease; a light non-solidifying grease or light oil should be lightly smeared on the mechanisms to assist easy movement and to prevent the onset of corrosion.

3.12 Stand Safety Vessel - Fast Rescue Craft and Daughter Craft Release Hook Arrangements

3.12.1 The release arrangements for FRC and Daughter Craft are not currently approved to the LSA regulations. Hook manufacturers usually test in accordance with the SOLAS requirements as a minimum, although the operational conditions that these vessels encounter when on station place on the hooks additional forces that are not encountered on SOLAS vessels.

3.12.2 Surveyors should pay particular attention to the hook release arrangements when carrying out inspections due to the operational conditions, frequency of operation and the speed of recovery of the launching arrangements. Attention should be given to parts of the hook release arrangements out of sight or concealed by other obstructions.

3.12.3 Surveyors should ensure when carrying out inspections of the release arrangements on these vessels that a full set of operational, inspection and servicing manuals are in place. Ships officers and crew should be aware of the Training Manuals and Instructions for on-board maintenance for the hooks and that log records of inspections and maintenance are kept up to date.

3.13 Lowering devices other than davits for lifeboats, rescue boats, inflated boats, Class C boats or boats

Surveyors should be satisfied with the condition of all parts of the devices and its fittings, and with the lowering and recovery gear including the purchase, blocks, topping lift and guys. Turning out and boat lowering tests would be witnessed at each survey.

3.14 Under-strength davits or other launching devices for lifeboats, rescue boats, inflated boats, Class C boats or boats and launching crews

3.14.1 General

In a case where the boat or the means of launching is not of sufficient strength for the boat to be lowered safely into the water when loaded with its full complement of persons and equipment required by the Regulations the davits or other means of launching shall be conspicuously marked with a RED BAND 150 millimetres wide painted on a white background, in accordance with Regulation 28(19) of the Merchant Shipping (Life-Saving Appliances for Ships Other Than Ships of Classes III to VI(A)) Regulations 1999.

3.14.2 The MCA considers that the proper number of men for a launching or recovery crew when the device is "RED-BANDED" is two. Shipowners, Masters, Officers and Seamen of merchant ships, and Owners, Skippers, Mates and Crews of fishing vessels are, therefore, asked to note that this number should never be exceeded.

3.14.3 A notice should be attached to each relevant set of davits or other device stating "Lower or recover with two man crew only".

3.14.4 In the case of a launch/recovery device for an inflatable boat, although in certain circumstances the boat is not required to be fitted with an engine, an allowance is made in all cases for the weight of an engine and its fuel of at least 60 kgs in case one is fitted at a later date.

3.14.5 **Note:** Under the Merchant Shipping (Life-Saving Appliances for Ships Other Than Ships of Classes III to VI(A)) Regulations 1999 and the Merchant Shipping (Life-Saving Appliances for Passenger Ships of Classes III to VI(A)) Regulations 1999 Lifeboat Davits must be of sufficient strength to launch the boat and full complement. Rescue boat davits must be of sufficient strength to safely enable recovery of the rescue boat, its equipment and full complement of persons.

3.15 Side ladders, pilot ladders and lifelines from davit span wires where fitted

3.15.1 General

These should be examined for condition and care should be taken to ensure that they comply with the requirements (see Chapter 17 and 18.12).

3.15.2 Mechanical descent units

Mechanical descent units should be subjected to a lowering test of 100 kg at intervals of not more than six months by the ship's personnel and an appropriate note made in the ship's records. Surveyors should check that these entries have been made and also witness a test of the unit at each renewal survey for Passenger

or Safety Equipment Certificates (see paragraph 18.4.9). Portable descent units should be stowed on board in a manner to prevent corrosion and damage.

3.15.3 Mechanical pilot hoists

Mechanical pilot hoists should be examined under operated conditions at each survey (see paragraph 17.10).

3.16 Immersion suits

Every immersion suit should be carefully examined at each survey and replaced if not entirely satisfactory. If the surveyor suspects faulty manufacture a report should be made to headquarters. The surveyor should also be satisfied with the immersion suit stowage arrangements and that the size of the immersion suits are suitable for those officers and crew for whom they are intended. Officers and crew should be advised that inspection of these suits should be carried out before every voyage or at least every three months.

3.17 Electric lighting

The lighting required by regulations 34, 50(4) and (5) and 71(4) and (5) of the Merchant Shipping (Life-Saving Appliances For Ships Other Than Ships of Classes III to VI(A)) Regulations 1999 as appropriate should be tested using the main and emergency sources of power supply, see paragraph 18.14.

3.18 Retro-reflective material

The performance of the retro-reflective material fitted to life-saving appliances should be checked by the following method at regular intervals and when life-saving appliances are being serviced:

- Place a new piece of the same retro-reflective material adjacent to, and on the same plane as, a representative piece of material fitted to the appliance.
- Pour water over both pieces of material.
- Using a powerful torch or Aldis lamp held at eye level, compare the performance of the two pieces of material from a distance of 10 metres.
- If a noticeable deterioration in performance is observed then the retro-reflective material on the appliance should be replaced.
- Dry off the appliance before re-stowing.