



SURF LIFE SAVING AUSTRALIA
POLICY STATEMENT
DESIGN & MANUFACTURE OF SURF BOATS

POLICY
NUMBER
5.7
OCT
2009

CONTENTS

This Bulletin contains the following information;

- 1 - Scope and Application
- 2 - Inspection Procedures
- 3 - Variation to Construction and Specifications
- 4 - SLSA Surf Boat Builders Registration Scheme
- 5 - Purpose of the Specification
- 6 - Technical Specification
- 7 - Weight Specification
- 8 - Boat Registration Numbers
- 9 - Specification Binding
- 10 - Attachments
- 11 - Further Information

1. SCOPE AND APPLICATION

- 1.1. This Specification applies to surf boats whose construction commenced on, or after the date of issue of this Bulletin and is henceforth Surf Life Saving Australia's current standard for glass reinforced plastic (GRP) or other alternative fibre types as approved by SLSA and foam or timber sandwich construction.
- 1.2. Surf boats constructed, or commenced, prior to the date of issue of this Bulletin shall conform to the previously promulgated relevant Specifications and/or amendments, except that all boats shall conform to Clauses 6.3.40. and 6.3.41. of this Specification.
- 1.3. The Specification includes requirements for dimensions, minimum hull weight, reserve buoyancy, materials, fittings and allowable equipment. It also covers requirements for inspection, registration and surf boat builder's compliance to the Specification.
- 1.4. All boats made in accordance with this Specification shall comply to the mandatory clauses of the Specification, and should follow wherever possible the recommendations made in the advisory rules. The word 'shall' is to be understood as mandatory throughout the Specification, and the word 'should' as advisory.
- 1.5. Purpose or ("Spirit") of the Specification - These Specifications describe the SLSA requirements for surf boats. Any competitor, club or boat builder not keeping within the purpose or spirit of specification, as determined by SLSA may be considered as not complying with the specifications. <Refer also Section 5>
- 1.6 All Builders of Surf Boats must be registered with SLSA
- 1.7 Surf Boats constructed by non registered builders will not be eligible for use within SLSA

2. INSEPECTION PROCEDURERS

- 2.1. Surf boats shall only be eligible to have a Compliance Label and Registration Number if constructed in accordance with the current Specifications. The registered boat builder shall have quality control procedures in practice that ensure the compliance to this specification and SLSA requirements.
- 2.2. SLSA appoints National Surf Boat Inspectors who have the authority, at any time, to inspect boats during their construction, witness the application of Compliance Labels and stamping of Registration Numbers, witness the signatures on Certificate of Initial Inspection and Registration Form, or check records and other relevant duties as requested by SLSA. The forms are available from SLSA but are normally in the possession of the National Inspectors. A Copy of this form is appended to this Specification, (Form No. 31/2001).
- 2.3. It is the responsibility of the National Boat Inspectors should, wherever possible check, by random visitation and liaison, that boats built (or noticed competing) within their area, comply with the current requirements. Any known departure from the Specification shall be also reported to SLSA and the club purchasing the boat. Boats built outside the current requirements shall not be permitted to compete at SLSA sanctioned competitions.
- 2.4. Mandatory Inspections—Boats being built in an Application for Registration procedure require a series of mandatory inspections by National Boat Inspectors and/or an appointed panel (see Clauses 4.3 and 4.4) who shall submit the panel's report through the Hon. National Boat Officer to SLSA for final decision. Similarly, boats classed as experimental shall be subject to a series of inspections (as determined by SLSA) during their construction and testing before final approval (see Clauses 3.3 and 3.4).
- 2.5. Inspection Records—National Inspectors undertaking the mandatory inspections, for either a Builder's Registration application or an experimental boat construction, shall use SLSA Certificate of Initial Inspection and Registration Form, for recording construction progress but shall omit the final witnessing and application of Compliance Label and stamping or engraving of the boats Registration Number until final approval by SLSA.
- 2.6. Builders Quality System—Under the conditions of the Official Agreement of Registration the Registered Boat Builder has an obligation and is responsible for the quality control and assurance that the boat is built to the Specification. Therefore the builder, once registered, shall then be fully responsible for final certification of compliance, including weighing, the application of the Compliance Label and the stamping or engraving of the Registration Number. The boat shall not leave the Boat Builder's premises until complete and certified as compliant.

3. VARITATION TO CONSTRUCTION AND SPECIFICATIONS

- 3.1. Deviation to the Specification—SLSA, upon the recommendation of the National Competition Manager and/or the Hon. National Surf Boat Officer, may allow a deviation to build a boat outside the SLSA Specification, subject to Clauses 3.2 and 3.3 of the Specification.
- 3.2. Experimental Boats—Before SLSA approval for the deviation, a detailed submission of the design, material and the construction methods to be used, shall be submitted

to the Hon. National Surf Boat Officer for investigation and opinion. One boat may then be allowed to be constructed, which shall include a series of SLSA inspections, and it shall be classed as experimental under these conditions. Experimental Boats shall not be used in any SLSA Competition unless specifically allowed by SLSA's Competition Manager and/or the Director of Competition after due consultation with the Hon. National Surf Boat Officer.

- 3.3. Experimental Testing Period—It shall be mandatory for an experimental boat to undergo an extensive testing period, under varying conditions as determined by SLSA, before a final decision on approval or other recommendations will be given by SLSA to alter the Specification.
- 3.4. Conditional Approval of Experimental Boats—SLSA approval of the development, building and trialing of an experimental boat is conditional in that SLSA and the association in general will not be responsible for any expenses incurred. Further, the issue of experimental status is no guarantee of the said boat being guaranteed final approval.
- 3.5. Specification Alteration Proposals—Any proposal to alter the Specification (including results of experimental testing) shall be submitted to the Hon. National Surf Boat Officer for evaluation and endorsement of SLSA before implementation is permitted. This requirement includes any change in basic design contemplated by the Boat Builder.
- 3.6. National Meetings—The Hon. National Surf Boat Officer in conjunction with the National Competitions Manager, may convene meetings to consider and evaluate proposed changes or additions to the existing Specification.
- 3.7. Meeting Participants—The meetings shall, in general, comprise appropriate National Boat Inspectors, State Boat Officers, Registered Boat Builders and other competent persons as co-opted by the Hon. National Officer or National Competitions Manager.

4. SLSA SURF BOAT BUILDERS REGISTRATION SCHEME

- 4.1. Applicant to apply in writing to SLSA, outlining company name, company principal, address, contact numbers, company background or profile, and details of boat to be built. An initial (non refundable) registration fee of \$500 is to accompany the initial application.
- 4.2. On receipt of the above application, the applicant will be advised in writing that they shall supply a detailed test panel of the proposed layout and that they will be required to build one boat for inspection by the Hon. National Surf Boat Officer (or nominees—the National Boat Inspectors). The applicant will also be issued with a copy of current relevant SLSA Specifications.
- 4.3. On advance notice from the Builder that the construction is to commence, SLSA will arrange for initial inspection of the boat moulds and construction procedure, by National Boat Inspectors (or nominee), to check that the Specifications have been met. Additional inspections at appropriate intervals will be carried out in accordance with the SLSA requirements. The series of inspections shall be reported on a Certificate of Initial Inspection and Registration Form (Form No 31/2001).
- 4.4. On completion, the builder shall present the boat to an SLSA panel of National Boat Inspectors (or SLSA nominees) for final inspection of compliance. The panel shall make a report, to the Hon. National Surf Boat Officer, for the recommendation to SLSA for registration or the need for further evaluation for an agreed period.

- 4.5. Following the inspections, the Builder will be advised in writing of the outcome of the Application for Registration. The outcome of the application cannot be assumed until written confirmation has been received by the Builder from SLSA.
- 4.6. If successful, an Official Agreement will then be forwarded to the Builder for their signature. Builders cannot manufacture or sell items purporting to comply to SLSA Specifications until the agreement has been signed and returned to SLSA. The builder will then be a Registered SLSA Surf Boat Builder.
- 4.7. Builders applying for re-registration may continue to manufacture boats and or sell items while a new agreement is being signed.
- 4.8. If registration is not approved, the Builder will be notified by SLSA of the reasons and what action that should be taken in order that registration may be reconsidered.
- 4.9. The Builder is then required (if successful) to purchase from SLSA, Compliance Labels (\$150 each) to be glassed under the surface of all boats manufactured to the SLSA Specifications. This label shall be located inside of the hull, port side, forward of bow rowlock, just below the gunwale.
- 4.10. Compliance Labels are numbered (Registration Number) and stamped with the Builder's name. The Builder is also required to mark the label with the date of manufacture completion (month and year). The builder shall also stamp Initials, this date and the Registration Number solidly into the inner gunwale (see Clause 8.) located between the quarter bar and the stern bulkhead (or engrave directly, or glue and engraved or stamped plate to GRP). Further, the Builder is required to keep an up-to-date record for each boat of all numbers in sequence, boat type, colour, the finished bare structural condition weight, and the name and address of the purchaser.
- 4.11. Annual re-registration will occur on 30th September of each year at which time an agreement will be forwarded by SLSA to each Builder. A re-registration fee of \$200 (non-refundable) must accompany the agreement when returned to SLSA. If the agreement and fee is not received by SLSA in 30 days, the Builder's agreement will become null and void. Inactive Boat Builders have a period of two years in which they can re-register by paying the re-registration fee of \$200. Should this two year period lapse, the Builder must again pay the \$500 initial non-refundable registration fee and proceed through the original registration process in becoming an SLSA Registered Builder.
- 4.12. Penalties for non-compliance with SLSA Specifications (also see Agreement) will be determined by SLSA after consideration of the circumstances of the non-compliance, and may result in cancellation of registration. The procedures in dealing with non-compliance are:
 - (a) A letter from SLSA will be sent asking the Builder to explain their actions to SLSA in writing.
 - (b) A panel consisting of the SLSA Chief Executive Officer, the Director of Competition and the Hon. National Surf Boat Officer (or their nominees) will adjudicate on each non-compliance matter separately and on their merits, as may be required.
- 4.13. The Builder should be aware that an authorised SLSA representative shall be entitled at all times during normal working hours to have necessary access to the Builder's premises to inspect boats, moulds, the construction process and the Boat Construction Register. This is necessary to ensure that boats which have been

constructed, or are in the course of construction, comply with the conditions as required in this Specification or additional SLSA rulings and requirements.

- 4.14. Builders will be placed on the SLSA national mailing list and will receive club mail in order to keep abreast of current matters within SLSA.
- 4.15. The above registration and compliance fees may be varied by SLSA as deemed necessary and will be notified to Builders prior to implementation.
- 4.16. Boats built by Registered Builders and not bearing the "SLSA Compliance Label" will not be permitted to participate in SLSA competitions/activity.

5. PURPOSE OF THE SPECIFICATION

- 5.1 The purpose of these specifications are to describe SLSA requirements for surf boats and to ensure that all surf boats used within SLSA comply with the specifications and with the spirit of the specifications.
- 5.2 These specifications refer to boats used in SLSA and will be used by SLSA Officials to determine the eligibility, or otherwise, of a surf boat.
- 5.3 Any competitor, or club, who attempts to win a race by any other than honorable means may be disqualified. This includes the use of boat not meeting the requirements of the appropriate SLSA specifications.
- 5.4 Builders have an obligation to SLSA to ensure that all boats manufactured comply with the appropriate specifications.
- 5.5 Clubs/competitors have a responsibility to ensure boats remain within specification.
- 5.6 When a change in basic design is contemplated, Builders shall first seek the advice of the National Surf Boat Officer or his/her nominee as assigned by Surf Life Saving Australia.

6. TECHNICAL SPECIFICATION

6.1 GENERAL

- 6.1.1. Boat builders commencing construction of Composite foam sandwich boats for the first time shall submit a test panel as directed by the Hon. National Surf Boat Officer of the proposed layup with full details to the Hon. National Surf Boat Officer.
- 6.1.2. Any proposed changes or alternatives to approved layups, stiffening or construction shall be submitted prior to construction, along with supporting professional engineering calculations and advice, for the consideration and approval of the Hon. National Surf Boat Officer. As a minimum requirement, the layups shall be at least as strong (eg. equal or greater reinforcement fabric weight and improved fibre orientation) as the presently approved layups in the Specification.
- 6.1.3. All components and items listed in HULL CONSTRUCTION (Clause 6.3.) shall be fitted to the boat unless described as advisory or where an otherwise SLSA approved alternative is allowed.

6.2. DIMENSIONS

- 6.2.1. Length Overall – Minimum 6.86m to a maximum 7.925m (not including the sweep outrigger).
- 6.2.2. Beam – Minimum of 1.62m between projections of outside hull at top of gunwale, measured at widest midship section near to Nos. 2 or 3 thwart; see also Clause 6.2.4.
- 6.2.3. Moulded depth – Minimum of 558mm from top of gunwale to lowest part of outside hull at keel, measured at the same section as the beam measurement.
- 6.2.4. Hull reverse curvature – Any reverse curvature of the hull, between the stern and a point 3.04m from the bow, shall be limited to a maximum of 13mm, measured between gunwale and keel. Where the gunwale has been moulded, or where the outside hull at top of the gunwale is otherwise hard to measure, the reverse curvature may be measured by placing a straight edge batten over the hull with the top end of the straight edge within 5mm of the gunwale. A projection of the straight edge to the top of the gunwale must also comply with minimum beam measurement requirements of Clause 6.2.3.
- 6.2.5. Longitudinal Hull Profile – Minimum hull depths and the minimum profile, relative to the baseline at a maximum of 57mm from the hull at midships, shall be in accordance with the dimensions given in Figure 1. The gunwale and keel centre line at hull profiles shall each maintain a smooth and continuous curve.

6.3. HULL CONSTRUCTION

- 6.3.1. Construction Materials – wherever the words ‘suitable or approved timber’ are mentioned they shall refer only to one of the species allowed in the Specification and shall be suitable for the particular purpose. Similarly, for GRP (E-Glass fibre Reinforced Plastic) and closed-cell foam core materials the type and minimum weights/densities shall be as specified or otherwise approved by the SLSA. Adhesives used shall be either Urea, Resorcinol, Melamine, Methacrylate (Plexus, Weldon etc.) or Epoxy and shall be a gap filling, marine grade, suitable for the particular purpose. Resins used shall be marine grade, suitable for the particular purpose and the resin to glass fibre ratio shall typically be 2:1 by weight for CSM (Chopped Strand Mat) and CFM (Continuous Filament Mat for vacuum resin infusion) and 1:1 (hand-layup) or 0.7:1 (vacuum resin infusion) by weight for E-glass stitched non-crimp non-woven reinforcement fabrics. That is, for optimum strength the percentage of glass fibre content shall be matched to the reinforcement style in recognition of best practice. The use of resin only, without fibre reinforcement, to build up structure or to add hull weight is not permitted.
- 6.3.2. Fastenings and Fittings – The fastenings shall be as specified, or of marine grade composition, suitable for the particular application from the following metals: ASTM 316 stainless steel, monel metal, silicone bronze, aluminium bronze or copper. The use of brass, steel or plated steel fasteners is not permitted, with exception of brass in electrical circuit fastenings only. Brass or steel shall not be used for any fittings unless specifically allowed in the Specification. All fittings and fastenings shall be installed ensuring that there are no dangerous protruding, sharp edges or screw threads.

6.3.3. Foam Sandwich Hull

- 6.3.3.1. Core Material – Core material shall be an approved PVC or SAN foam (presently approved products are Klegecell, Airex, Divinycell and CoreCell). The minimum manufacturer's nominal sheet density shall be 70kg/m³. The minimum nominal thickness shall be 12mm in hulls and generally 10mm in decks (6mm in fore and aft cover decks and bulkheads).
- 6.3.3.2. Skin material – The type of fibre in the reinforcement fabrics used shall be conventional E-glass and resin in the laminate must be marine grade polyester or vinylester containing styrene and suitable for the purpose. Resin used in the vacuum infusion process shall be specifically formulated for this process.
- 6.3.3.3. Basic hull shell layup – the outside GRP sandwich skin laminate shall have a minimum of 675g/m² dry fibre. The layup shall include a minimum 225g/m² CSM (Chopped Strand Mat) as a tie/skin coat behind the gelcoat.. The inner GRP sandwich skin laminate shall have a minimum of 450g/m² of dry fibre. Basic deck shell layup shall comprise a minimum of CSM – 225g/m² either side of 10mm foam core.
- 6.3.3.4. Multi-Layers of Woven Cloth – Should multi-layers of woven reinforcement be used anywhere in the construction of the hull or fittings, a layer of CSM (e.g. 225g/m²) shall be placed between each layer of cloth. This provision does not apply if the vacuum infusion process is used in the layup of the hull or deck shells.
- 6.3.3.5. Connection of Layup Skins – The inner and outer skins shall be solidly connected or joined at the gunwale by excluding the foam core or replacing it with a suitable high-density core. The core material shall be continuous from gunwale to gunwale, or shall be divided at the centre line of keel with skins fixed to, or integral with, the full internal keel in one of the following ways, or otherwise as only approved by SLSA:
- (a) (i) The foam core shall cease 50mm from each side of centreline;
(ii) The edge of the foam next to centre line shall be chamfered on its inner edge at a minimum taper of 1:1;
(iii) The inside skin shall join the outside skin at the bottom of the chamfered edge and overlap the centre line a minimum of 50mm;
(iv) The internal keel shall be bonded to the lapped skins using epoxy adhesive, OR,
 - (b) (i) A timber spacer, 50mm x 12mm section shall be shaped and laid full length to fit outside skin along the keel line, and effectively glued using epoxy adhesive;
(ii) The foam core shall be laid hard up to the edge of the timber spacer and the inside skin laid over foam and the timber spacer;
(iii) The internal keel shall be glued to the inside skin over the top of the keel line timber spacer using epoxy adhesive; OR,
 - (c) (i) The internal keel shall be effectively glued to the outside skin using an epoxy adhesive;

- (ii) The foam core shall be laid hard up to the internal keel on each side;
- (iii) The inside skin shall be laid over the foam core and internal keel in a continuous run.

6.3.4. Single Skin Glass Reinforced Plastic (GRP) Hull.

Refer to Oct 10, 2002 Specification. Builders of single-skin FRP boats use Oct 10, 2002 rule.

6.3.5. Timber Sandwich Hull. Refer to Oct 10, 2002 Specification. Builders of timber/timber-sandwich boats use Oct 10, 2002 rule.

6.3.6. Scantlings, Stiffening and Strengthening – All “timbers”, including stringers, risers and gunwales, where used, shall be full length, straight grained, approved timber varieties. If stringers, risers and gunwales cannot be fitted in one length, the use of scarf joints shall be acceptable with a full taper ratio of minimum 12:1. Where specifically allowed in the Specification an SLSA approved foam cored GRP construction may be used in lieu of timber.

6.3.7. Structural and Scantling Sizes – All sizes quoted for timber, other material scantlings and structural components shall be the minimum finished sizes. Extreme or unnecessary dressing, scalloping, bevelling or shaping of timbers shall not be permitted. Similar restrictions shall apply to specified sandwich construction alternatives.

6.3.8. Inner gunwale – The inner gunwale shall be 44mm x 22mm Silver Ash, Mountain Ash, Yellowwood or White ash efficiently glued to the hull. The dimensions shall be maintained continuously for the length of the boat and shall not be bevelled or scalloped to attach fittings.

6.3.9. Outer Gunwale – The outer gunwale (gunwale mould) shall be 44mm x 22mm Silver Ash, Mountain Ash, Yellowwood or White Ash screwed and glued to the hull and inner gunwale. The depth shall be maintained continuously for the total length of the boat and shall not be bevelled to attach fittings. Some shaping of the thickness is permitted forward of the splashboard. As appropriate, any end grain hull veneers or soft core material shall be sealed off, for example with a 3mm cover board or a suitable high-density core material (see Clause 6.3.3.7.). The gunwale unit shall not be weakened in the fitting of the rowlock bosses, etc.

6.3.10. Gunwale Strengthening – Inner gunwales shall be strengthened, underneath or adjacent to rowlock fittings, with 44mm x 19mm timber of the same species as the inner gunwale and shall extend full length between adjacent thwart knees; they may be tapered from the rowlock fitting to the knees or to a minimum of 300mm if the knees are not fitted. Alternatively, equivalent strengthening at the bow and stroke rowlocks may be fitted only on the outside of outer gunwale or may be incorporated in outrigger construction.

6.3.11. Foam Sandwich Gunwales – Alternatively, the gunwales may be of an approved foam sandwich construction but maintaining the dimensions and profile, and excluding and bevelling or shaping, as per timber gunwales. The following are presently approved layups:

- 6.3.11.1. Construction No 1 – The inner and outer gunwale shall each be a minimum of 44mm x 20mm approved foam with a minimum nominal density of 130kg/m³. The GRP skin layup shall be a minimum of:
- 1000g/m² E-glass fabric or unidirectional rovings
- 6.3.11.2. Construction No 2 – The total gunwale is 44mm deep x 50mm wide approved foam with a minimum nominal density of 130kg/m³. The GRP skin layup is:
- 2 layers of min. 668g/m² triaxial reinforcement fabric
- 6.3.11.3. Construction No 3 – The inner and outer gunwales are each 55mm deep x 25mm wide approved foam with a minimum density of 130kg/m³. The GRP skin layup is:
- Unidirectional Roving 500g/m² (fore & aft)
2 layers Woven Fabric 330g/m² each
- 6.3.12. Stringers and Seat Risers – Stringers and seat risers, when used shall be 32mm x 19mm approved timber (extending from stem to stern) glued to contacting surfaces. Timers approved are: Silver Ash, Yellowwood, Spruce, Oregon, Alpine Ash, Coachwood, Celery-Top Pine, Hoop Pine, Huon Pine, Myrtle Beech, Queensland Maple, select Spotted Gum. A foam core with GRP skin of the same layup as the hull may be used in lieu of timber in stringers and seat risers.
- 6.3.13. Stringers in Single Skin GRP Hulls – Hulls of solid GRP construction shall have a minimum of two full-length stringers (stiffeners). If a buoyancy insert or tanking is used, its construction may be incorporated with the hull stringers which shall maintain continuity end to end.
- 6.3.14. Internal Keel – A full length internal keel shall be fitted using Oregon, Spruce, Celery-Top Pine or Huon Pine and the unshaped size shall be 98mm x 31mm; if Silver Ash, Mountain Ash, Alpine Ash or White Ash the unshaped size shall be 76mm x 31mm; or if a foam box section is used the unshaped core size shall be 98mm x 36mm which shall be fully encased in a GRP skin. An alternative approved construction is, when using full length buoyancy tank inserts, the longitudinal bulkhead verticals are considered to replace the role of the box section internal keel, providing: (a) the verticals are fully glassed and within 180mm of the centre line; (b) a minimum of 75mm of each side of each vertical is additionally glassed with min. 300g/m² reinforcement fabric each side and adequately glassed to the hull; (c) the reinforcement component in the normal lapped hull skin layup between the verticals is increased by a minimum of 40%; and (d) the lapped hull layup must be adequate to support the external false keel and connections.
- 6.3.15. External False Keel – A full length external keel shall be glued and/or screwed to the internal keel over the lapped hull layup using 38mm x 19mm Silver Ash, Yellowwood or Alpine Ash. The false keel may be shaped from 38mm down to 19mm at the keel rubbing band and the depth may be evenly tapered from 19mm to 6mm over the aft 1.8m. The keel rubbing band shall not include brass in its composition. Suitable plastic materials are recommended and metallic bands are generally discouraged for reasons of crew safety.

6.3.16. Deep False Keel – Variations to the above configuration may be permitted if they comply with the following guidelines. The false keel shall be:

- (a) of minimum length 2m;
- (b) placed, as a minimum, between No 2 thwart and the quarter bar;
- (c) of maximum depth 75mm;
- (d) of minimum single side elevation area 0.10m², i.e., greater than a basic 75mm x 2.67m triangular shape plus an allowance for the concave curvature next to the hull or equivalent area variations;
- (e) suitably tapered at each end;
- (f) fitted with an approved rubbing band extending as a minimum from the bow to the bottom of the stern end of the false keel. The rubbing band is optional from the stern end of the false keel to the stern; and
- (g) material may be GRP of equivalent layup as hull.

6.3.17. Stem – The stem shall be reinforced internally with either:

- (a) a suitable timber insert shaped from 25mm x 36mm section effectively glued to inside of hull: OR,
- (b) a minimum of two layers of 15mm foam interleaved with two layers of reinforcement fabric similar to hull layup and extending a minimum of 200mm either side; OR,
- (c) the GRP hull layup overlapping at least 200mm either side.

6.3.18. Thwarts – Thwarts shall be fitted using 178mm x 22mm approved timber, suitably glued and/or screwed or fibreglassed at the seat risers or support blocks. Alternatively, they shall be 178mm x 20mm approved foam and sheathed with same layup as the hull.

6.3.19. Thwart Stanchions – The thwarts shall have stanchions which shall be:

- (a) of approved timber insert of 125mm x 22mm section effectively glued and or screwed and fastened with shoulder moulds to thwarts and keel to function as both a tie down and support to the thwart. The stanchions may be shaped, provided a minimum of 75% of its original cross-sectional shape is retained; OR,
- (b) of approved foam material with the same layup as hull and effectively glassed to thwarts and keel. The foam stanchion may be constructed as part of a sealed box designed to support the thwart; OR,
- (c) alternatively, if the stanchions above are not used the thwarts shall be constructed as an inverted U and be of same thickness and construction as the thwart, with the depth of the downward flanges to be a minimum of 200mm where the flange contacts the inner hull (see figure 2).

6.3.20. Thwart Knees – Thwarts shall be fitted with knees by one of the following methods:

- (a) Each thwart shall have four timber knees, blocked and glued to the hull, with three fastenings to the thwart and one through the gunwale. The knees shall be grown Tea-tree, plywood or steamed laminates and of 22mm minimum thickness. Copper fastenings (boat nail and roove/burr) through the gunwale may be replaced with 10 gauge screws of approved material, which shall penetrate the outer gunwale a minimum of 10mm; OR,

- (b) Each thwart shall have central single knees at each end of all thwarts of the above timber or similar sandwich construction as the hull and shall extend from the thwart to near the top of the inner gunwale. The knees shall be adequately glassed to the inner gunwale, inside hull and the thwart with additional reinforcement extending the full width of the thwarts; OR,
- (c) Each thwart shall have a sandwich foam stiffener of the same width as the thwart at each end. The stiffener shall be of the same thickness as the hull and extend from the thwart to near the top of the inner gunwale, and shall be adequately glassed to the inner gunwale, inside hull and the thwart (see Figure 3).

6.3.21. Extra Thwart – An extra thwart shall be fitted between the quarter bar and the stroke thwart by one of the following methods:

- (a) of 75mm x 19mm approved timber, strengthened on underside by 38mm x 19mm timber on edge and tapering to the hull or by a 62mm x 19mm stanchion, and shall be fastened to hull with 2 knees similar to thwart knees; OR,
- (b) of 62mm x 20mm approved foam and strengthened on underside with 62mm x 20mm approved foam on edge, both with same layup as the outer hull; OR,
- (c) an approved sealed chamber shaped to the hull may be used with approved knees fastened to the hull as in 6.3.20.

6.3.22. Buoyancy tank insert – A suitable buoyancy tank insert may be moulded and/or fitted inside the hull, also contributing to hull strength, and may incorporate part of the function of the thwarts and stanchions. All such inserts and “liners” generally shall be bonded to the inner surface of the hull shell with similar materials so as to form a structural connection in at least three locations, two of which are to be the gunwales. The following modifications may then be incorporated:

6.3.22.1. Buoyancy Tank Insert Knees – In sandwich construction only, the “thwart” knees/stiffeners may be deleted if complying with all the following conditions:

- (a) a suitable buoyancy tank insert is fitted to the inside hull;
- (b) the insert runs continuously the length of the hull and contributes to boat strength;
- (c) the full thickness sandwich construction hull runs through and between the inner and outer gunwales; and,
- (d) there is suitable reinforcement doubling at the insert/hull interface at the normal thwart/riser height and running the full length.
- (e) Note that knees/stiffeners are still required in all other types of construction.

6.3.22.2. Insert Tank Thwarts – in boats fitted with full length buoyancy tank inserts, a minimum of three thwarts including the bow shall be fitted. The thwarts shall be of the above specified size and shall be incorporated into insert so that full strength is maintained across the boat, gunwale to gunwale.

6.3.23. Hull Decking – The decking shall be moulded and securely screwed/glued to, and supported by, the gunwales and at least two deck beams of 75mm x 22mm timber or equivalent GRP/foam sandwich shall be securely connected to the gunwales. The decking shall be constructed by one of the following methods:

- (a) 6mm minimum core GRP foam sandwich; OR,
 - (b) 5mm ply covered with 3mm timber veneer; OR
 - (c) 2 x 3mm moulded timber veneers to finish not less than 6mm thickness;
OR,
- 6.3.24. Bulkheads – Bulkheads shall be 6mm ply or foam sandwich panels, of same layup and thickness as the hull, and shall be efficiently back framed to withstand surge of water in boat. Approved sealed bulkheads may be incorporated into the design of the buoyancy tank insert and foam part of the buoyancy provisions.
- 6.3.25. Buoyancy – As a safety provision the boat shall remain buoyant in the damaged condition and/or with inspection hatches missing or open. Buoyancy shall be provided as follows.
- 6.3.25.1. Buoyancy – Full foam Sandwich Hull Construction additional buoyancy not required.
 - 6.3.25.2 Buoyancy-Solid GRP Hull Construction – Two units to a total minimum of 0.4m³ of polystyrene foam, or similar material, evenly distributed fore and aft to ensure the boat will float when damaged and full of water. The additional foam shall be used unless demonstrated that sufficient buoyancy exists.
- 6.3.26. Coaming – A coaming shall be provided aft of the forward decking using 10mm timber, moulded or laminated in one piece, to stand 75mm above decking at the centre, or in two pieces fixed to three knees. Alternatively, the coaming may be made of GRP or foam sandwich of same layup and thickness as the hull.
- 6.3.27. Tuck – The tuck stern shall be of same materials used in hull skin and shall be additionally reinforced with a minimum 12mm timber or foam backing or core. Timber may be used as the core material for a sandwich tuck, or as backing for an effectively reinforced solid GRP tuck.
- 6.3.28. Quarter Knees to Tuck – Two quarter knees shall be fitted using 22mm sided Tea-tree or laminated or moulded plywood. Alternatively, an approved GRP lamination may be used.
- 6.3.29. Breast Hooks – Breast hooks knees shall be fitted using 22mm sided Tea-tree or moulded plywood, suitable timber or approved GRP or foam sandwich construction moulded to shape of hull.
- 6.3.30. Sweep Outrigger – The sweep outrigger shall be a minimum 150mm x 50mm Silver Ash, Mountain Ash, Yellowwood or Blue Gum securely fixed and glued to deck beams and fastened to the tuck with a 38mm sided knee or metal bracket. Alternatively, the sweep outrigger may be constructed with 150mm x 60mm approved foam, with a minimum density of 130kg/m³, sheathed with a minimum of 1000g/m² of dry reinforcement and glued or glassed to the tuck and deck structure. The outrigger may be tapered down from the tuck to the aft bulkhead.
- 6.3.31. Quarter Bar – The quarter bar shall be shaped from a suitable timber minimum 63mm x 25mm and bolted to the gunwale with maximum 6mm stainless steel bolts; or, glued using epoxy adhesive and fastened each end with 75mm x 10

gauge stainless, monel metal or silicone bronze screws. Alternatively, the quarter bar may be constructed with 60mm a 60mm approved foam, sheathed with a minimum of 1000g/m² of dry reinforcement and glued or glassed to gunwales.

6.3.32. Foot-stretchers – Foot-stretchers shall be a minimum of 10mm marine ply laminate; or, 20mm approved foam, sheathed with a minimum of 225g/m² of dry reinforcement (e.g. CSM – 225g/m²) ; or, approved equivalent GRP construction. These alternatives may be incorporated into the buoyancy tank insert.

6.3.33. Keel Band – The keel band shall be 19mm, marine grade stainless or approved non-ferrous or synthetic material. Note, this item needs regular inspection to ensure there are no damaged or sharp edges.

6.3.34. Rowlock Fittings.

6.3.34.1. Metal rowlock Fittings – The four rowlock fittings shall be fabricated from marine grade stainless steel or monel metal; or cast from marine grade phosphor bronze or similar. The fittings shall fit over the top of the gunwale or approved outrigger gunwale construction and designed so that rowlocks and oars are in the correct position of r rowing. All sharp edges shall be eliminated and corners to top and bottom plates shall have a minimum 10mm radius. Fastening shall be kept to a minimum to avoid weakening of the gunwale. Fabricated fittings shall include a full tubular section for housing the rowlock shaft and the inside of this shank tube shall not extend more than 10mm from a longitudinal line parallel to the widest line of the outer gunwale. Any rowlock fitting may be outriggered to a maximum of this widest line and is called an “outrigger rowlock fitting”.

6.3.34.2. Moulded GRP Rowlock Fittings – The rowlock fittings may be incorporated into GRP gunwale construction. The dimensions and restrictions shall be as for the metal fittings. The reinforcement fabric layup of the approved GRP gunwale shall be increased a minimum of 200% at the fitting, and a suitable synthetic or metal shank tube incorporated into the construction. Note: this fitting may not be as strong as the metal type.

6.3.35. Outrigger Rowlock Fittings – An outriggered rowlock fitting is defined as one where the inside of the shank tube is more than 10mm from the normal outside line of the top edge of the outer gunwale. Outriggered fittings must be additionally protected for safety by a method approved by the Hon. National Surf Boat Officer. Approved methods are as follows.

- (a) Cover Plates. The top and bottom plates of the rowlock fittings shall be fully enclosed with an approved metal cover ensuring that there are no protruding or sharp edges and the fitting shall have a minimum taper of 1:1, fore and aft (see Figure 4). This enclosed fitting only, may also be used in combination with the outer gunwale outriggered with the approved timber or GRP foam sandwich and which shall extend fore and aft with a minimum taper of 1:1.
- (b) Protective Wedges. Other types of outrigger fittings, if not fully enclosed and/or not tapered correctly, shall be protected, fore and aft, by timber

wedges of species approved for gunwales. The wedges shall have a minimum taper of 3:1, and shall extend from the outer gunwale to the inside edge of the shank tube as a minimum, or to the outside edge of the fitting as a maximum. The depth of the wedges shall taper from the full fitting depth, at the fitting, down to the full depth of the gunwale, at the gunwale. The wedges shall be suitably rounded, adequately glued and screwed to the gunwale gaps minimized in the fitting and not exceeding 10mm (see Figure 5).

- 6.3.36. Rowlocks – The rowlocks shall have sufficient spring to allow the oars to be released should they become fouled under the boat. The rowlocks shall also be designed so the oars will slip out when pulled inboard past the leather or synthetic sleeve. The rowlock shank shall not be greater than 16mm diameter, shall not protrude more than 50mm below the rowlock fitting and shall have a hole at the heel for a rowlock retaining pin. The retaining pin shall be manufactured from stainless steel or monel metal and be ring shaped without sharp or protruding ends to prevent injury.
- 6.3.37. Sweep Rowlock – The rowlock shall be manufactured from stainless steel, monel metal or galvanized steel, may be rounded or goose-necked and bolted through the sweep outrigger rowlock fitting of similar material for rowlock fitting. Nyloc type nuts or a nut with a ring shaped pin shall be used to prevent release and injury.
- 6.3.38. Bungs – Drain holes in the hull and/or stern shall have the bungs attached to the boat by nylon cord or non-ferrous chain and screw fittings.
- 6.3.39. Oars – There is no specific Specification for surf boat oars. However, for safety the blade shall have a minimum 6mm thickness with no sharp corners at the edges.
- 6.3.40. Rescue Tube – An SLSA approved rescue tube shall be fixed to topside of the bow thwart decking or tank top by velcro straps (for quick release).
- 6.3.41. Optional Equipment – Additional equipment may be fitted or carried on the boat and includes pumps additional GRP seats, SLSA approved sliding seats, approved signal plate, signal flags, stainless steel boat or raft knife and buckets. Specific requirements are as follows.
- 6.3.41.1 Pumps – A maximum of two manual or battery operated pumps of unrestricted capacity may be fitted ensuring that associated piping and fixtures cannot cause injury.
- 6.3.41.2 Batteries – The batteries used shall be restricted to the fully sealed type and shall be securely attached to the boat in a battery housing of suitable shape and material. The battery housing does not need to be fully enclosed or waterproof; but if the battery is contained in a box, breathing holes shall be provided to dissipate any dangerous gases. Care should be taken when charging the sealed batteries which should be done out of the boat and only using chargers suitable for this type of battery. NOTE: ORDINARY CAR BATTERIES SHALL NOT BE USED. Associated switching and wiring fitted for pumps and batteries shall have no sharp or protruding parts, edges, screws, etc, by design and/or location which could cause injury.

- 6.3.41.3 GRP Seats – GRP seat shall be suitably fastened to thwarts or Buoyancy Tank inserts ensuring that they shall be readily removed for scrutineering and ensuring that there are no gaps, sharp edges or corners, etc, that could cause injury. If GRP seats are incorporated permanently, or are part of the buoyancy tank insert moulding and/or the thwart, then a minimum weight allowance of 10kg for the seats shall be added to the minimum allowed weight of the 180kg (refer section 7.3).
- 6.3.41.4 Sliding seats – Only sliding seats approved by SLSA may be used in normal SLSA competition. Special events, etc, may specifically allow other types. Currently the only SLSA approved sliding seat is the Ferrett (South Australia) design and manufacture.
- 6.3.41.5 Weight - The bare weight of the finished craft shall have a minimum weight of 180 kg, with a maximum weight of 190 kg. Final weight excludes all equipment and seats. Finished craft must be signed off by the builder and the purchaser or their designated official
- 6.3.41.6 Racing weight- The racing weight of the surf boat shall have a minimum weight of 209 kg including batteries, seats, pumps and foot blocks. Excludes rowlocks, oars and any other additions . 6.3.41.6 MUST be read in conjunction with 6.3.41.5 (bare weight of hull to have a minimum weight of 180 kg).

7. PURPOSE OF THE SPECIFICATION

- 7.1. Weighing Of Boats—The weight (mass) of new boats shall be established on the boat builders premises on completion of construction and before delivery to a purchaser. The boat shall finished for delivery, including rowlock fittings, with all components fully painted, and weighed in the “bare structural condition” using calibrated and accurate equipment.
- 7.2. Bare Structural Condition—The bare structural condition is defined as the boat finished for delivery including rowlock fittings and footstretchers; but excluding oars, rowlocks, rescue tube and all optional equipment or their equivalent (refer Clause 6.3.41.).
- 7.3. Minimum Weight—The minimum allowable weight in the bare structural condition shall be 180.0 kg. If a boat does not achieve the specified minimum, then, additional weight shall be added only by using construction material in strategic area of the hull structure and which will strengthen the boat (ie, hull skin, keel or gunwale). NOTE: THE USE OF BALLAST (LEAD, RESIN OR OTHER) TO ADD ADDITIONAL WEIGHT IS NOT PERMITTED.
- 7.4. Weighing Equipment—The boat shall only be weighed using accurate equipment calibrated by a recognised organisation authorised to calibrate to a relevant National Standard. In determining the boat weight, corrections for the minimum graduation (or readability), calibrated error and stated accuracy of the equipment shall be taken into account to ensure the boat is over the 180.0 kg plus the corrections.

For example: if the equipment, when calibrated at a load of 180.0 kg, has an indicated reading error of - 0.4 kg (correction +0.4) and the digital graduations are 0.2 kg; then the “indicated” bare structural weight should be over the total which is 180.6

kg. Additionally, if the calibration authority quote an accuracy, for example +/- 1% OR +/-0.1kg, then this figure should be added to the minimum allowable weight of the boat. These corrections will protect clubs from the boats weighing under specified weight in later scrutineering when different or more accurate equipment may be used.

- 7.5. Equipment Certification—The boat builder shall ensure that the weighing equipment used is kept in calibration in accordance with the relevant National Standard, and that the certificate of calibration is made available to SLSA.
- 7.6. Weight Registration—The measured bare structural weight shall be entered on the Certificate of Registration Form by the boat builder who shall forward the fully completed copies to SLSA and other distributees, as listed on the form, within one week of completion and weighing. The boat builder shall keep up-to date records of the weight with other required data for each boat.
- 7.7. Reweighing—The SLSA or the Hon. National Surf Boat Officer shall have the authority to direct a re-weighing of a boat by approved means, if not satisfied with the initial weight or the circumstances of its weighing.
- 7.8. Weight Scrutineering—If boats are weighed during competition scrutineering the following procedures should be undertaken:
 - (a) Boats shall be clean, dry and stripped to bare structural condition (Clause 7.2).
 - (b) All internal compartments shall be open for inspection.
 - (c) Weighing instrument should have:
 - a capacity of 250-300 kg,
 - a readability of 0.1 kg or better,
 - an accuracy of +/-0.1 kg or better,
 - a current calibration certificate from a recognised authority, and
 - all should be taken into account in determining the weight.
 - (d) If required, boats should be weighed prior to the competition. If a boat is found to be under the minimum 180.0 kg it shall be excluded from competition until such time it is brought up to specification in an approved manner. Details of any boats found not to meet specifications shall be referred to the Hon. National Surf Boat Officer and SLSA for investigation.
 - (e) If the boat is weighed during competition it shall be thoroughly cleaned, drained and dried by towelling, etc, prior to weighing. If a crew has already competed in a boat found to be underweight the boat shall be withdrawn from that competition. Crews/individuals who have used the boat may be disqualified from the event entered and may also face disciplinary action.
 - (f) Preliminary weighing with some equipment installed may be undertaken and an estimate of the bare structural weight calculated using accurate weight allowances for the additional equipment. However, only known, accurate equipment weights shall be used, and if the calculated weight is close to the 180.0 kg minimum, or if there is doubt about the type and weight of the equipment, then the boat shall be stripped and weighed in the bare structural condition, as above

8. BOAT REGISTRATION NUMBERS

- 8.1. This number is basically the number on the Compliance Label and is separate from any other State boating registration requirements. Combined in the stamping or engraving of the Boat Registration Number it is a more permanent identification of the boat. It shall replace all existing numbering systems.
- 8.2. The Builder shall stamp the Boat Registration Number solidly into the inner gunwale at a position located between the quarter bar and the stern bulkhead. Alternatively on GRP gunwales, it may be engraved directly, or on an engraved or stamped plate permanently attached by resin or glue.
- 8.3. The Boat Registration Number shall be at least the first and last letter of the boat builder's surname, followed by the month then year of manufacture; finally, the next consecutive number (after the letters "No") taken from the SLSA Compliance Label for the particular boat and builder
For example, "Smith" built his fourteenth boat (since using Compliance Labels starting in July 1998) in August 2001, the boat should be branded thus:

SH8/01 NO 14

9. SPECIFICATION BINDING

- 9.1. All SLSA clubs and State Associations, and Registered Boat Builders shall accept this Specification, along with official amendments and relevant bulletins, as a condition of the boats use and manufacture. All clubs and competitors have a responsibility to ensure that their boats maintain compliance to the specifications.
- 9.2. It shall be understood as a part of the condition of manufacture or use, that the SLSA shall reserve the right to direct the removal of a core sample from the boat and submit that core for analysis and testing if, in the opinion of the SLSA, there is reason to suspect that the GRP, foam or timber sandwich construction does not conform to the Specification.
- 9.3. Should a dispute arise in relation to any aspect of this Specification then the Hon. National Surf Boat Officer shall, after consultation with the appropriate parties, arbitrate on the matter and whose decision shall be binding.

10. ATTACHMENTS

- 10.1. Attached will be found sample copies of SLSA forms and sample documents listed as follows:

SLSA Certificate of Initial Inspection and Registration Form

11. FURTHER INFORMATION

- 11.1. Further information or enquires concerning the construction of surf boats should be directed to:

Physical Address: Hon National Surf Boat Officer, SLSA at
Surf House, Level 1, 1 Notts Avenue Bondi Beach NSW 2026, or,

Postal Address: Locked Bag 2
Bondi Beach, NSW 2026
Australia

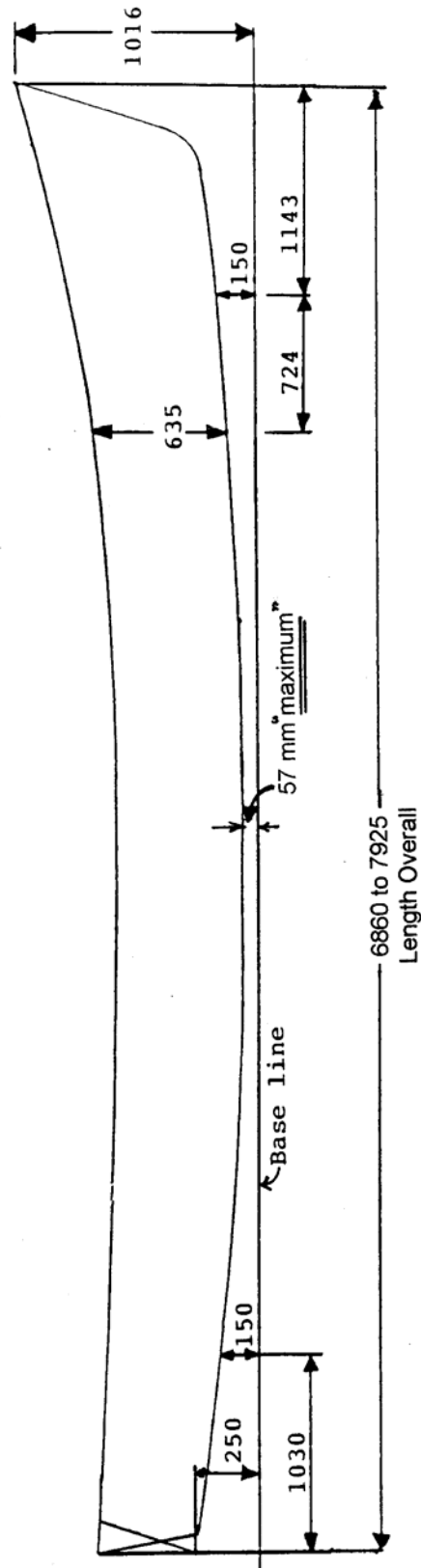


FIGURE 1. SURF BOAT MINIMUM ALLOWABLE PROFILE MEASUREMENTS (mm).

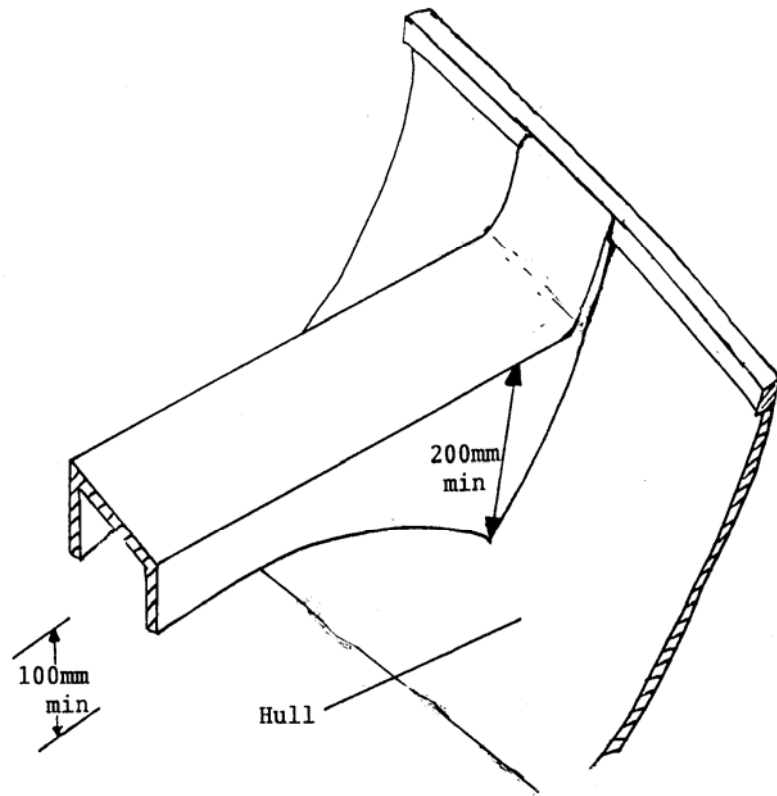


FIGURE 2. INVERTED U SHAPED THWART

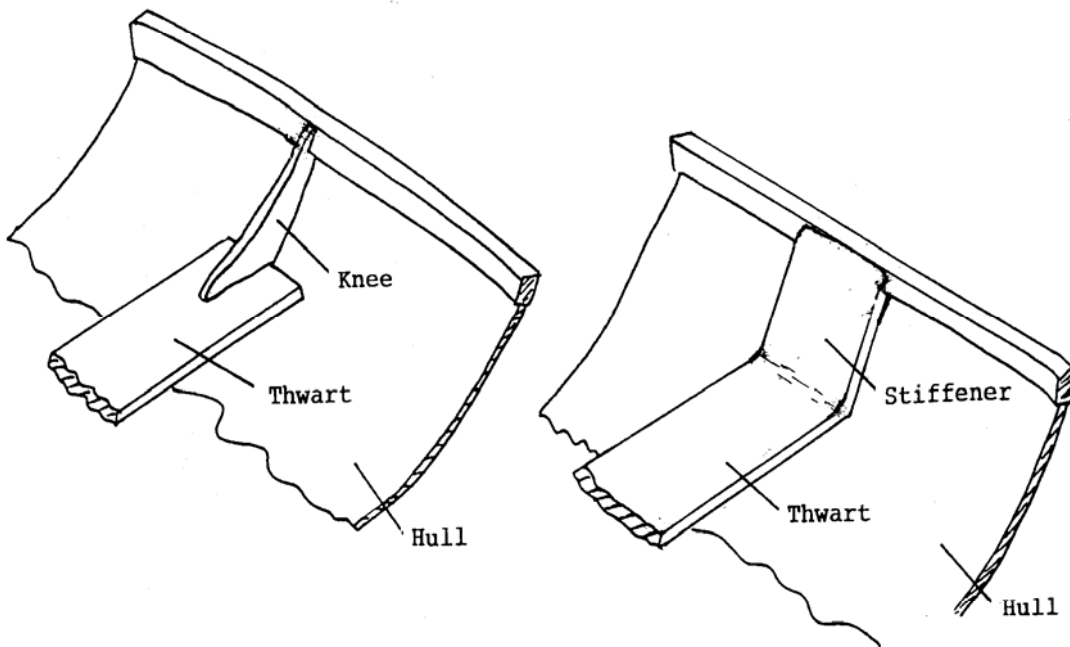


FIGURE 3. SINGLE THWART KNEE OR ALTERNATIVE STIFFENERS

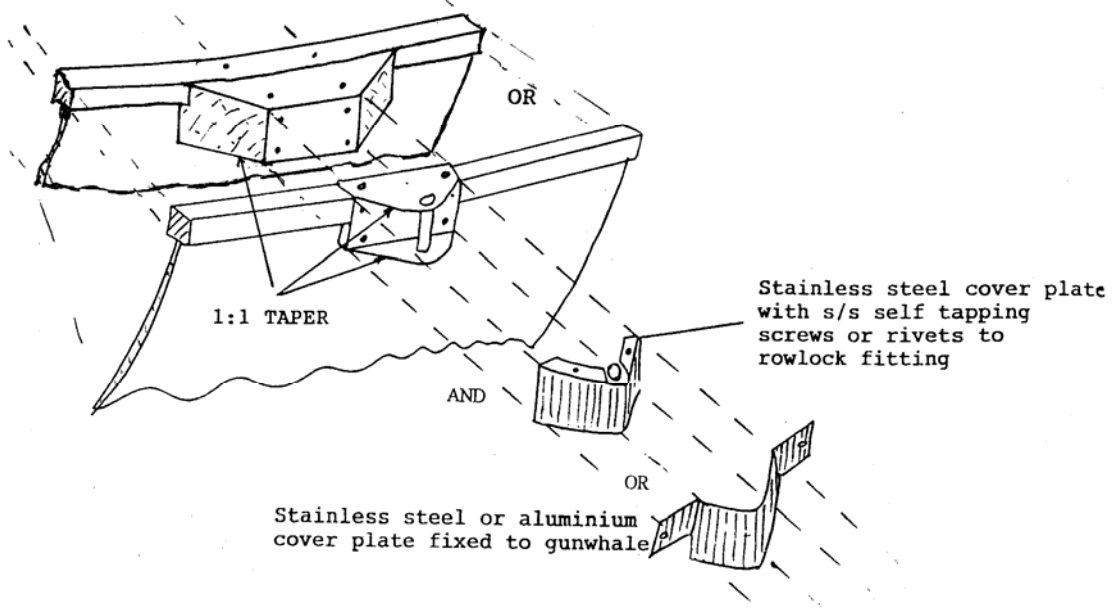


FIGURE 4. ROWLOCK FITTINGS APPROVED COVERS.

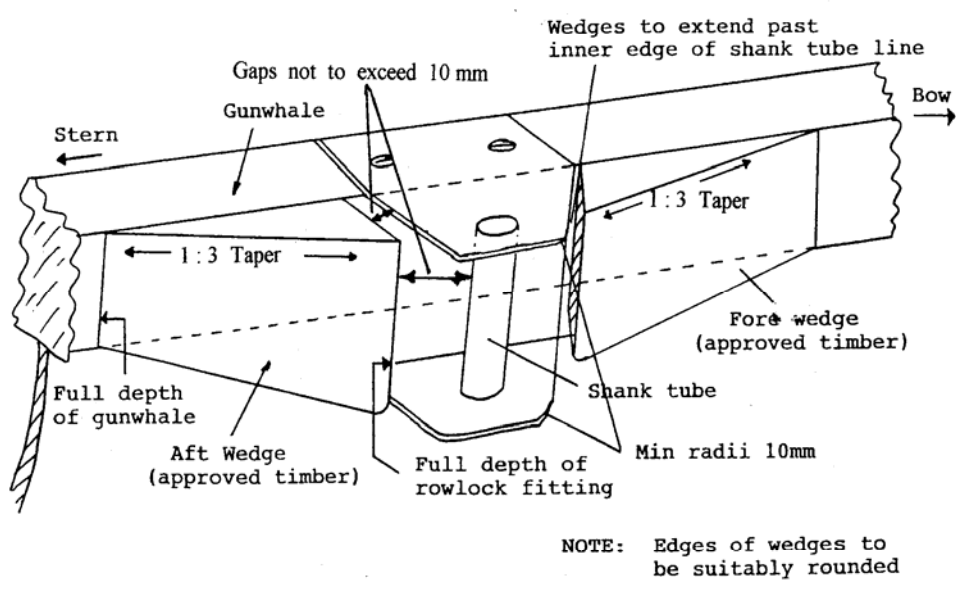
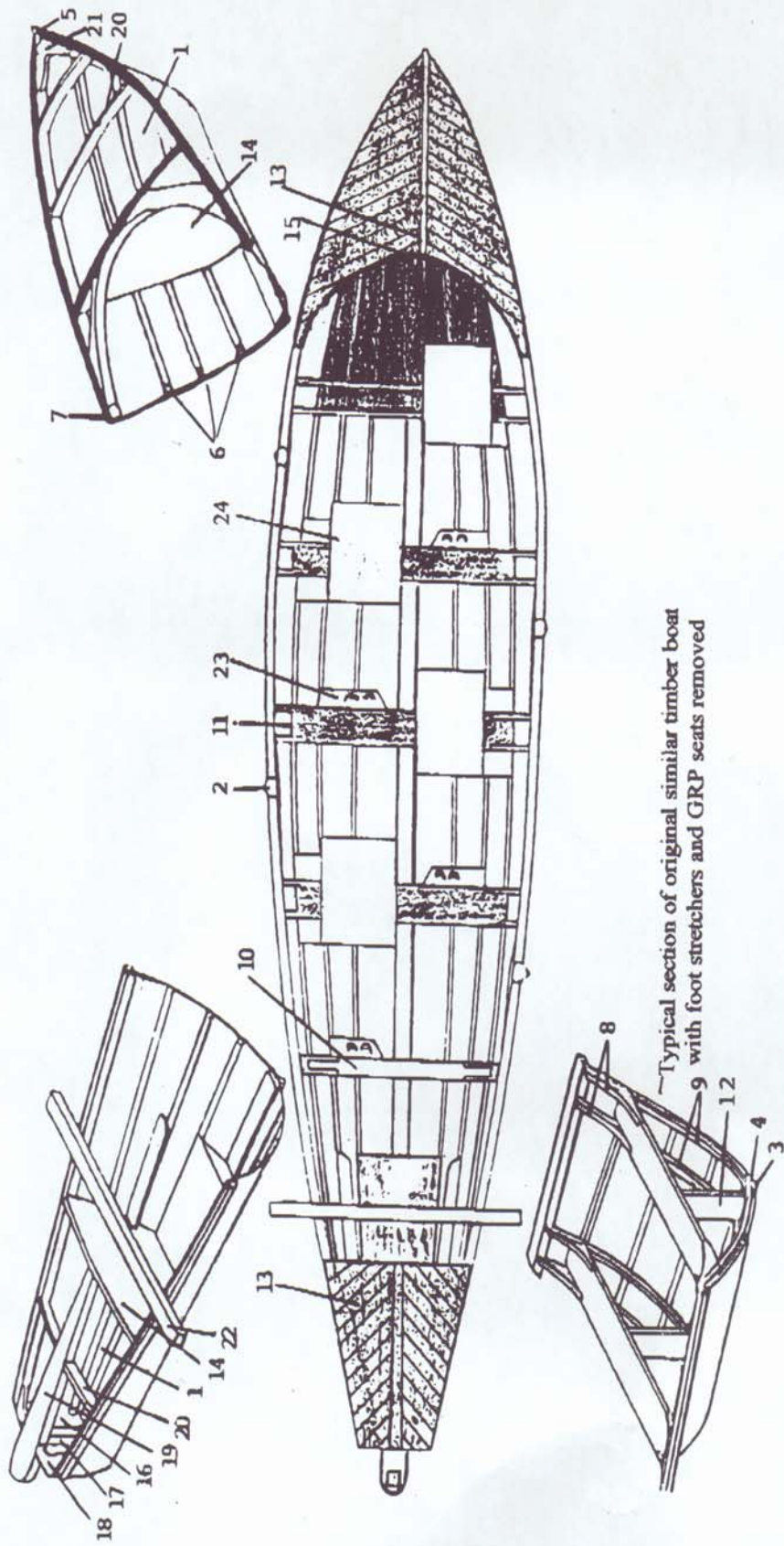


FIGURE 5. ROWLOCK FITTINGS PROTECTIVE WEDGES.



Typical section of original similar timber boat
 9 with foot stretchers and GRP seats removed

ITEM LIST	
1. Buoyancy	17. Stern Post (Tuck Knees)
2. Rowlock Fittings	18. Quarter Knees
3. External False Keel	19. Sweep Outrigger
4. Inside Keel	20. Deck Beams
5. Stem	21. Breast Hook
6. Stringers (& Seat Riser)	22. Quarter Bar
7. Gunwales	23. Foot Stretchers
8. Thwart Knees	24. GRP Seats
9. Timbers	
10. Extra Thwart	
11. Thwarts	
12. Thwart Stanchion	
13. Decking	
14. Bulkheads	
15. Coaming	
16. Tuck	

FIGURE 6. SECTIONS OF BOAT AND ITEM LIST



Surf Life Saving Australia Limited

CERTIFICATE OF INITIAL INSPECTION AND REGISTRATION

SURF LIFE SAVING BOAT

DISTRIBUTION
BY BUILDER:

WHITE SLSA
GREEN PURCHASING CLUB
YELLOW BOAT BUILDER
PINK CLUB'S STATE CENTRE
BLUE INSPECTOR

A. ORDERING INFORMATION:

BOAT ORDERED BY: _____ SLSC STATE: _____ DATE: ____/____/____
CONSTRUCTION STATUS: REGISTRATION EXPERIENCE STANDARD OTHER DESCRIBE: _____
BASIC CONSTRUCTION MATERIALS: _____

*DATE OF SLSA ADVICE TO BUILD: ____/____/____ DATE CONSTRUCTION COMMENCED ____/____/____

B. REPORT ON INSPECTION:

NOTE: MANDATORY FOR REGISTRATION OR EXPERIMENTAL CONSTRUCTION, AS DIRECTED BY SLSA*. MAY ALSO BE USED BY SLSA INSPECTION VISITS, OR BY THE BUILDER AS A CHECK LIST RECORD

1. PRELIMINARY INSPECTION ON ADVANCE NOTICE OF BUILDER

INSPECT MOULD CHECK MOULD DIMENSIONS CONSTRUCTION PROCEDURES OTHER DESCRIBE: _____
COMMENT: _____
SIGNED: _____ SIGNED: _____ DATE: ____/____/____
BOAT BUILDER BOAT INSPECTOR

2. INTERMEDIATE INSPECTION DURING CONSTRUCTION AND FITTING OUT

HULL REMOVED FROM MOULD HULL SKIN STRINGERS AND BRACKETS
GUNWALES AND KEEL THWARTS STANCHIONS OTHER LIST:
COMMENT: _____
SIGNED: _____ SIGNED: _____ DATE: ____/____/____
BOAT BUILDER BOAT INSPECTOR

3. FINAL INSPECTION AT COMPLETION

DECKING BULKHEADS BUOYANCY MATERIAL BUOYANCY TANK INSERT
ROWLOCK FITTING ZERO BALLAST OVERALL FINISH WEIGHING CALIBRATION
THE WEIGHT IN THE BARE STRUCTURAL CONDITION IS _____ KG (I.A.W CLAUSE 7.)
COMMENT: _____
SIGNED: _____ SIGNED: _____ DATE: ____/____/____
BOAT BUILDER BOAT INSPECTOR

C. SLSA BOAT REGISTRATION: (Mandatory for all Boats)

1. CERTIFICATION OF COMPLIANCE

I, _____, REGISTERED SLSA SURF BOAT BUILDER, HEREBY DECLARE AND CERTIFY THAT THE ABOVE MENTIONED SURFBOAT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE CURRENT

SPECIFICATION FOR THE CONSTRUCTION OF SLSA SURF BOATS AND SLSA AGREEMENTS AND INSTRUCTIONS; AND THAT THE WEIGHT MEASURED IN ACCORDANCE WITH THE SPECIFICATION IS OVER THE MINIMUM ALLOWABLE, AS IS RECORDED IN SECTION B.3 ABOVE.

SIGNED: _____ WITNESS: _____ DATE: ____/____/____
BOAT BUILDER
ADDRESS: _____

2. BOAT REGISTRATION.

COMPLIANCE LABEL NO.; _____ DATE: ____/____/____ STAMPED REGISTRATION NO: ____/____/____ NO _____
EG Stamping for Engraving would be; **BT8/01 No 14**

Eg Barnet finish August 2001: SLSA Label 00014 08/2001