



Surf Craft and Surf Boat Specifications



SPORT EQUIPMENT SPECIFICATIONS

BACKGROUND

Clubs and services

Any gear and equipment used by SLSA affiliated club and service members for the purposes of frontline sport competition must be approved for use by SLSA and listed on the SLSA 'Approved Gear and Equipment List'. This list can be found on the SLSA Members Portal.

Club and service members using equipment that is not approved for use and listed as approved should be aware that they may be susceptible to any possible insurance and litigation issues resulting from an incident.

Suppliers and Manufacturers

Manufacturers or suppliers wishing to have their equipment approved for use and listed on the SLSA approved Gear and Equipment List should contact SLSA and adhere to SLSA *Policy 1.6 Gear and Equipment* and the relevant equipment specifications listed below.

The following document outlines the specifications for the manufacture and supply of frontline sport competition equipment.

Compliance with these specifications ensures that SLSA clubs and services are supplied with equipment that is safe, of a high quality and is fit for sport operations.

The specifications listed in this document are the intellectual property of Surf Life Saving Australia (SLSA) and are to be strictly adhered to by all licensed manufactures.



Contents

SECTION 1: SURF CRAFT SPECIFICATIONS	4
1. PURPOSE OF SPECIFICATIONS.....	4
2. VARIATION FROM SPECIFICATIONS	4
3. DEFINITIONS.....	4
4. REGISTRATION INTO COMPLIANCE PROGRAM	4
5. COMPOSITE SURF BOARD	6
FIGURE 1	7
FIGURE 2	7
6. SINGLE SURF SKI.....	8
FIGURE 3	10
FIGURE 4	11
7. DOUBLE SURF SKI.....	12
8. JUNIOR 'NIPPER' COMPOSITE SURF BOARD	14
9. JUNIOR 'NIPPER' SOFT SURF BOARD	15
10. 'LONG BOARD' OPEN 9 FOOT DIVISION.....	16
11. SURF BOARD RIDING 'SHORT BOARD' DIVISION.....	16
12. COMMUNICATION & VIDEO DEVICES.....	17
13. SLSA Colour Chart	18
SECTION 2: SURF BOAT SPECIFICATIONS	19
1. PURPOSE OF SPECIFICATIONS.....	20
2. VARIATION TO CONSTRUCTION AND SPECIFICATIONS	20
3. INSPECTION PROCEDURE.....	21
4. REGISTRATION INTO COMPLIANCE PROGRAM	21
5. TECHNICAL SPECIFICATIONS	23
5.1 GENERAL.....	23
5.2 DIMENSIONS.....	23
5.3 HULL CONSTRUCTION.....	24
6. SPECIFICATION BINDING.....	31
7. COMMUNICATION & VIDEO DEVICES.....	32
FIGURE 1	33
FIGURE 2	34
FIGURE 3	34
FIGURE 4	35
FIGURE 5	35
FIGURE 6	36



SECTION 1: SURF CRAFT SPECIFICATIONS



1. PURPOSE OF SPECIFICATION

These specifications refer to craft used in SLSA competition and will be used by SLSA Officials to determine the eligibility, or otherwise, of competitor's craft.

Any competitor, or club, who attempts to win a race by any other than honourable means, may be disqualified. This includes the use of Craft not meeting the requirements of the appropriate SLSA specifications.

Manufacturers have an obligation to SLSA to ensure that all craft manufactured comply with the appropriate specifications.

Clubs/competitors have a responsibility to ensure craft remain with specification.

When a change in basic design is contemplated, manufacturers shall first seek the advice of SLSA. A National Surf Craft Advisor will be nominated by SLSA to provide this advice under the authority of the Chair, Sport.

2. VARIATION FROM SPECIFICATIONS

Provision is allowed in SLSA procedures for craft to be constructed outside the specifications – for the purpose of improvement of design, performance or material evaluation.

HOWEVER, such permission can only be forthcoming from SLSA in writing after a detailed submission in writing has been received. The applicant must not presume the application will have SLSA approval.

Submissions must contain all relevant information and "drawings where applicable" or any other material requested by SLSA in support of the application.

SLSA may request development craft are constructed and tested at the applicants cost.

SLSA permission to develop craft outside specification is no guarantee of final approval and such activity shall be at no expense to SLSA.

Manufactures should consult Policy Statement 1.6 Gear and Equipment

3. DEFINITIONS

Radius is the distance from the centre-point of a circle to the outer edge, as opposed to the diameter, which is the distance from edge to edge.

4. REGISTRATION INTO COMPLIANCE PROGRAM

- 4.1 Applications for registration must be in writing to SLSA, outlining all details of the applicant, such as company name if applicable, company principal, address, all contact details, company background and profile and craft to be manufactured. An initial (non-refundable) registration fee of \$5500.00 (including GST) is to accompany the initial application.



- 4.2 Subsequent applications, from a registered manufacture for registration to manufacture additional types of surf craft, must be accompanied by a supplementary (non- refundable) registration fee of \$200.00 (includes GST).
- 4.3 On receipt of the above application, the applicant will be advised in writing that they will be required to build one craft, of each type for which registration is sought, to SLSA at no cost. SLSA may require the craft to be destroyed for inspection. The applicant will also be issued with a copy of current relevant SLSA specifications. Manufactures should ensure that craft seeking registration are checked on the SLSA, State or Branch jigs prior to contacting SLSA for inspection.
- 4.4 On advice from the Manufacturer that the craft moulds (if appropriate) and appropriate manufactured craft are ready for inspection, the National Surf Craft Advisor (or nominee) will arrange an inspection to check that the appropriate standards are met.

NOTE: Manufacturer's operating outside of Australia will be required to meet travelling costs for such inspections and any future inspections required for Annual Registration.

- 4.5 Following the inspection, the manufacturer will be advised in writing of the outcome of the Application for Registration. The outcome of the application cannot be assumed until the manufacture has written confirmation from SLSA.

NOTE: SLSA reserves the right to reject a craft if it is deemed not to comply with the safety requirements of SLSA through design or materials.

- 4.6 If successful, an Official Agreement will then be forwarded to the manufacturer for their signature. Manufacturers cannot manufacture or sell items purporting to comply with SLSA specifications until the agreement has been signed and returned by SLSA.
- 4.7 If registration is not approved, the Manufacturer will be notified by SLSA of the reasons and what action that should be taken in order that registration may be reconsidered.
- 4.8 The Manufacturer is then required (if successful) to purchase from SLSA, compliance labels to be secured to the surface of all craft manufactured to SLSA specifications.
- 4.9 Compliance Labels are numbered. The Manufacturer is also required to date the label with date of manufacture (month and year). Further, the manufacturer is required to keep an up-to-date record of all numbers in sequence, craft type, colour, finished weight and name and address of purchaser of each craft.
- 4.10 Annual re-registration will occur on the 30th June each year at which time an Agreement will be forwarded by SLSA to each manufacturer. A re-registration fee of \$650.00 (non-refundable, includes GST) for surf craft manufacturers, and \$775.00 (non-refundable, includes GST) for surf boat manufacturers, must accompany the Agreement when returned to SLSA. If the Agreement, fee, and any other required documentation are not received by SLSA by 30th September of the same year, the manufacturer's agreement will become null and void. Should this occur, the manufacturer may again pay the \$5500.00 (includes GST) initial non-refundable registration fee and proceed through the original process in becoming a registered manufacturer if they wish to become a SLSA Registered Manufacturer.
- 4.11 Manufacturers applying for annual re-registration may continue to manufacture craft or sell items while the new Agreement is being signed.
- 4.12 Penalties for non-compliance with SLSA specifications (also see Agreement):



- A letter from SLSA will be sent asking the manufacturer to explain their actions to SLSA in writing
- A panel of the SLSA Sport Standing Committee (or their nominee) will adjudicate on each non-compliance matter separately and on its merits, as required.

- 4.13 Manufacturers should be aware that an authorised SLSA representative shall be entitled at all times during normal working hours to have necessary access to the premises of a manufacturer to inspect craft, moulds if appropriate, the manufacturing process and the Craft Manufacturing Register. This is necessary to ensure that craft, which have been manufactured or are in the course of manufacture, comply with the conditions and specifications as outlined in the document and SLSA specifications for manufacturing of surf craft.

NOTES

i) Craft built by Registered Manufacturers and not bearing the “SLSA Approved” sticker will not be permitted to participate in SLSA competitions/activity.

ii) SLS registered members may build one craft per annum and must have an “SLSA Approved” sticker and will need to be scrutineered by a National Surf Craft Advisor nominated by SLSA under the authority of the Chair, Sport.

iii) SLSA at all levels through carnival/activity organisers, reserves the right to scrutineer any or all equipment at any said activity.

TECHNICAL SPECIFICATIONS:

5. COMPOSITE SURF BOARD

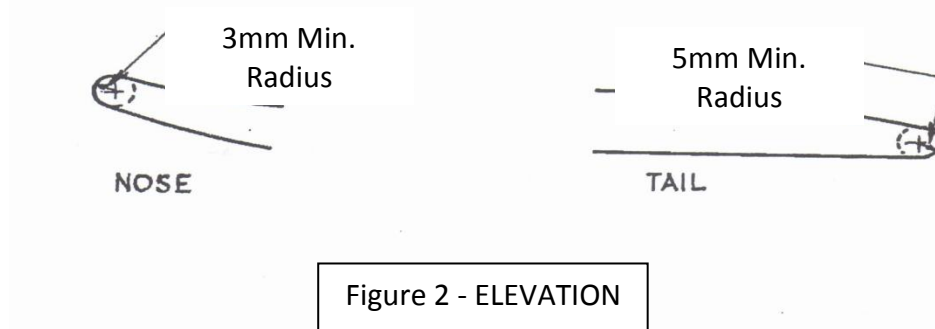
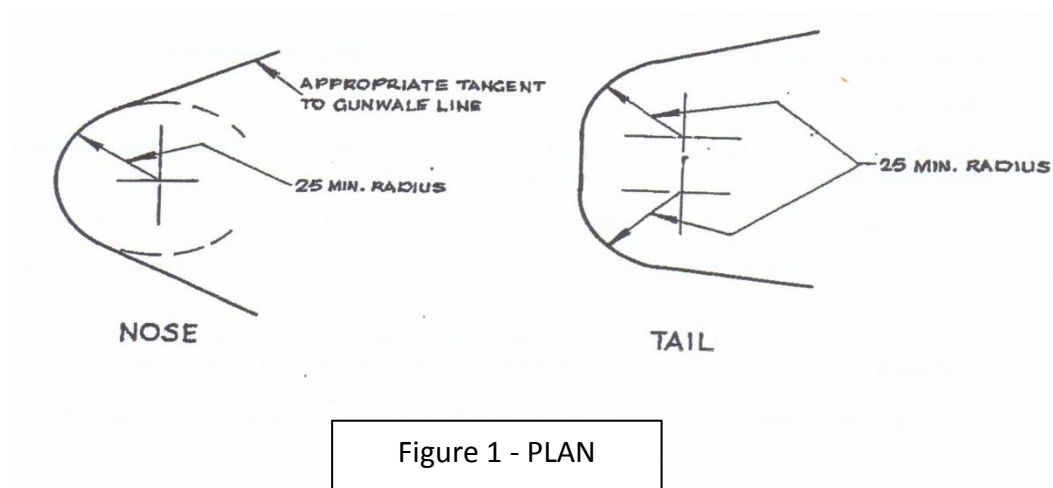
- 5.1 Maximum length – 3.2m
- 5.2 Minimum Radii – Nose and Tail in plan view (see Figure 1) – 25mm
- 5.3 Minimum Radii – Leading edge Nose and trailing edge Tail in elevation view (see Figure 2) – 3mm.
- 5.4 Minimum Structural Weight – 7.6kg (includes one fin, plastic/rubber handles and knee/chest pads).
- 5.5 Minimum Width – not specified.
- 5.6 Only one fin is permitted and must have a minimum profile radius of 25mm at any point, minimum leading edge radius of 3mm and minimum trailing edge radius of 2mm.
- NOTE:** Leading edge extends from the underside of the board to the lowest point of the fin.
- 5.7 The board may be constructed of foam sandwich core with a composite laminate skin or of thermoplastic construction solid or hollow with or without a soft foam surface.
- 5.8 Surf boards must contain a minimum flotation in the form of foam or other approved material to provide buoyancy of 20kg mass. If the buoyancy foam used in the manufacturing of the board absorbs water, a permanent sticker must be applied advising the user “if the outer protective layer is pierced the board will absorb water”.
- 5.9 Surf boards to be of mono construction.
- 5.10 Compliance labels to be secured to the surface of all surf boards manufactured to SLSA specifications.
- 5.11 All newly manufactured/approved Surf Boards shall have highly visible coloured tips. The approved colours are outlined in the SLSA Colour Chart attached to this specification. Tips are to be applied with

colourfast paint, resin or thermoplastic adhesive film from the tip of the nose and back from the end of the tail to a length of 100mm. This can be part of the logo or design. Where the deck and hull (bottom and top) join an allowance of 10mm disconnect, is acceptable.

5.12 Exemptions apply to boards with nose and tail colours in excess of 100mm in the colours detailed in the Colour Chart.

5.13 Surf board radius specifications:

- a. Tail side view minimum radius 5mm.
- b. Tail plan view minimum radius 25mm on both outside edges.
- c. Nose plan view minimum radius 25 mm on both outside edges.
- d. Nose side view minimum radius 3mm at tip of nose.





6. SINGLE SURF SKI

- 6.1 Maximum length 5.79 m (includes wave deflector – not including any rudder).
- 6.2 Minimum structural weight 18kg (excludes removable deflector, includes all rudders and mechanism, rudder pedals and cables, all flexible foot straps, adjustable foot blocks and mechanism, pedals and seat pads, fixed fins, hatch covers and starting handles).
- 6.3 Ski structural laminate construction must not contain more than 1 layer of 225 gm E glass CSM (except where reinforced patches are required) all other layers must consist of stitched fabric or woven fabric of E, S or R glass, carbon fibre or Aramid fibre.

Core materials maybe used provided they do not absorb water.

Gel coat must be a NPG Isophthalic ,NPG orthophthalic or Isophthalic with high UV protection.

NOTE: A Ski can lose weight after manufacture, if weight loss is less than 250gms the weight maybe replaced with permanent material provided the material is fixed to the craft e.g. Thermoset resin. Greater weight loss MUST be reported to SLSA and the manufacture. The craft cannot be used within surf lifesaving until the weight is to the specification (18 kg).

- 6.4 Ski's to be of mono construction.
- 6.5 Compliance labels to be secured to the surface of all Ski's manufactured to SLSA specifications.
- 6.6 Minimum width shall be 480mm, measured at the widest point of the hull and exclude any rubbing strips, mouldings, additional protective mouldings or edge of rollover decks. If they are incorporated in the ski the measurement will be taken from the underside of the hull at the widest point excluding all rubbing strips, additional protective mouldings or rollover decks and shall have a minimum width of 480mm.
- 6.7 Minimum width at a point 400mm from the bow shall be 180mm.
- 6.8 Minimum width at a point 200mm from the bow shall be 75mm.
- 6.9 Where a build in deflector greater than 400mm in length is used, the minimum width 400mm from the bow shall be measured as detailed in Item 8.11
- 6.10 Where the deck and/or gunwale is raised in a manner which increases the width of the hull, the minimum width of 480mm is required to occur at a point on the underside of the hull on a line which represents the true line of the gunwale.
- 6.11 Reverse curve is permitted in the hull to provide greater lift and shall be built according to the following details.

(i) Reverse curve is permitted in hull only between forward edge of foot wells and bow of ski

(ii) The maximum depth of the reverse curve shall be 20mm measured over 130mm span. Width of span to be measured from deck line when removable deflector or built-in deflector less than 400mm in length is used.

(iii) The maximum reverse curve width shall be measured at a point 400mm from the bow of the ski and will reduce to no reverse curve at a point to the front of the forward edge of foot wells.

(iv) When a built in deflector longer than 400mm is used the method following shall be used to measure the 180mm and 75mm minimum width of the hull. From the underside of the ski any deflector length in excess of 400mm shall be disregarded and the measurement taken from the 400mm point.

An approved SLSA template (see Figure 3) 180mm wide shall be placed against the underside of the ski, 400mm from the bow of the ski. Adjustable straight edges, fitted to the template, 130mm long shall be



moved to touch the hull of the ski and check made to ensure reverse curve to such straight edges do not exceed 20mm each side.

(v) No reverse curve in any direction is permitted in the hull between the front foot straps and the stern of the ski.

NOTE: When repairs or manufacture result in a reverse curve being created the ski should be filled and faired to remove the reverse curve.

6.12 Component Specifications

- (a)** Deflectors (removable or built-in): Wave deflectors shall not be wider than maximum width of ski. Minimum edge radius shall be 3mm in elevation and in plan deflectors shall have a minimum radius of 25mm.
- (b)** Rudders: Rudder blades shall be of composite material or other approved material. Rudders must have a minimum profile radius of 25mm, except at the hull, minimum leading edge radius of 3mm and minimum trailing edge radius of 2mm. Leading Edge extends from the underside of the hull to the lowest point of the rudder. Any fixed fin must also conform to this clause.
- (c)** Rudder Mechanisms: There must be no projection of the rudder mechanism, e.g., balls, screws, nails, pins or rods etc which could cause injury or damage. A plastic cover shall protect all rudder cables made of stainless steel.
- (d)** Footwells and seating wells shall be incorporated in the overall construction and be completely sealed from the hull.
- (e)** Adjustable footblocks/straps may be used. Mechanism used in the adjustment must be approved and have no projections or sharp edges that can cause injury.
- (f)** All foot straps MUST incorporate an approved centre release system.
- (g)** All ventures protruding from the hull must have a minimum of 1.5mm radius on all exposed edges and be designed so no leading edge can cause injury due to wear through use. They must be constructed of plastic, rubber or composite. The use of metal ventures is not permitted.

6.13 Flotation: Single skis shall contain a minimum flotation in the form of foam or other approved material to achieve 30kg of positive buoyancy.

Flotation foam must not absorb water. If polystyrene is used the surface MUST be sealed.

6.14 All newly manufactured/approved Surf Boards shall have highly visible coloured tips. The approved available are outlined in the SLSA Colour Chart attached to this specification. Tips are to be applied with colourfast paint, resin or thermoplastic adhesive film from the tip of the nose and back from the end of the tail to a length of 100mm. This can be part of the logo or design. Where the deck and hull (bottom and top) join an allowance of 10mm disconnect, is acceptable.

6.15 Exemptions apply to Single Surf Skis with nose and tail colours in excess of 100mm in the colours detailed in the Colour Chart.

6.16 Design: Minimum measurements along the hull from a flat horizontal surface require are as follows:

- (a)** 75mm at stern to underside, which will be the general continued curvature line of the hull.
- (b)** 300mm at bow along true line of gunwale. (Deflectors are not considered to be a part of a true line of the gunwale and should not be included in the measurement).
- (c)** At 600mm in from stern, a clearance of 50mm.
- (d)** At 100mm in from bow, a clearance of 200mm.
- (e)** At 400mm in from bow, a clearance of 75mm.



- (f) A single ski less than the maximum length of 5.79 metres must still comply to the measurements from bow and stern – for the curvature check.

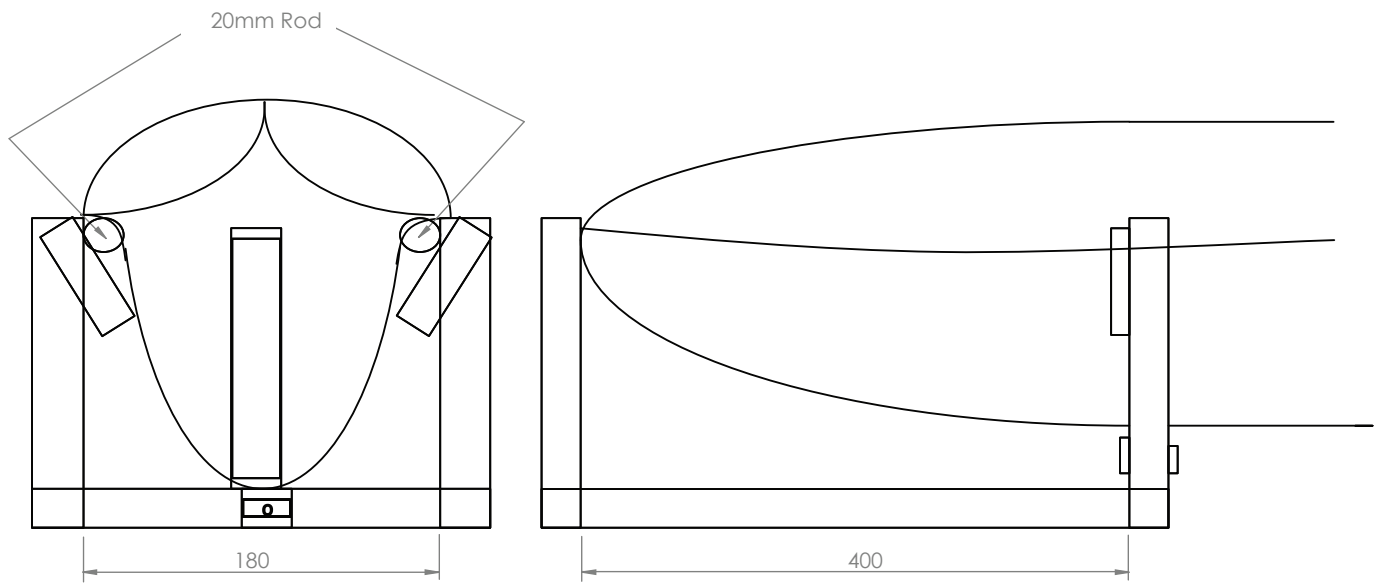
For measuring: The ski must sit on SLSA's standard jig (see Figure 4) and touch or clear all jig measurements, keeping within the overall length. For skis less than the minimum length the jig must be adjusted to the length of the ski.

There must be no reverse curvature of the bottom of the ski from the bow to the line of the SLSA's standard jig.

NOTE: For details of procedures of measurement refer to the appropriate Bulletins issued by Australian Council on Scrutineering of Surf Craft.

- 6.17** As a safety precaution, minimum profile of hull/deck at tail and bow (where removable deflector is used) of skis in either plan or side elevation shall be 25mm. Minimum radii in other directions to be 4mm. Further minimum radii of V bow to be 4mm.
- 6.18** Projection of the overlapping deck past the hull at tail (and bow) to not exceed 5mm.
- 6.19** If a deck is less than 25mm deep at the join the 25mm radius must extend to 25mm depth minimum.
- 6.20** Ski Paddles. Currently no specification for paddles exists. However, all paddles must be free of sharp or jagged edges (which may cause injury). Metal tipped paddles are NOT permitted to be used. Paddles with adjustable handles must have tape covering the joining mechanism.
- 6.21** Carrying handles may be attached to the skis such handles are not to cause injury and are approved by scrutineers.

Figure 3 – Detail of approved SLSA Jig for
measuring reverse curve of Ski
NOT TO SCALE



Tail

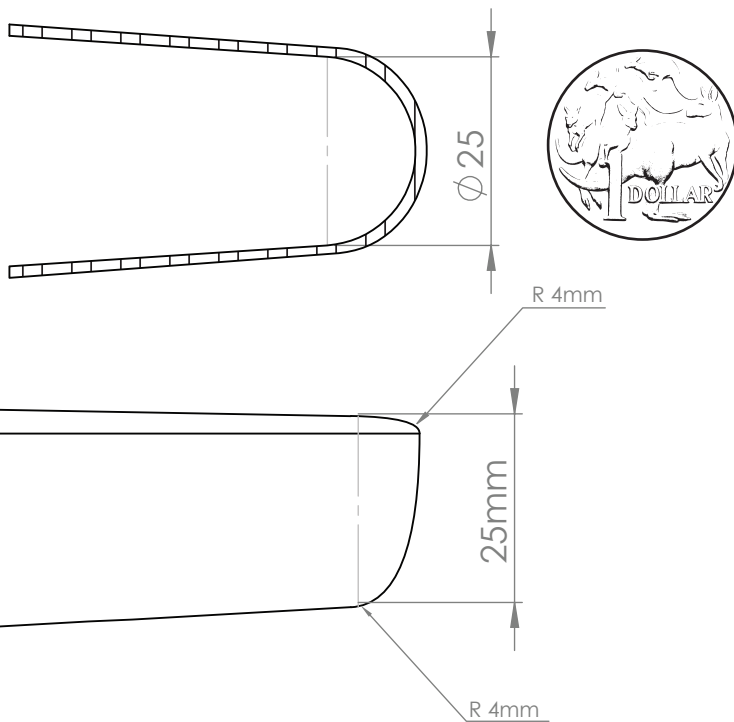


Figure X - Plan elevation of tail
Minimum inside profile - 25mm
It cannot be smaller than a dollar coin.
SCALE 1:1

Figure X - Side elevation of tail
Minimum wide - 25mm
Minimum radii in other directions to be 4mm.
SCALE 1:1

Nose

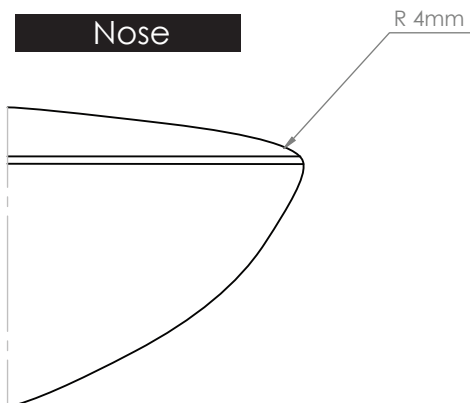
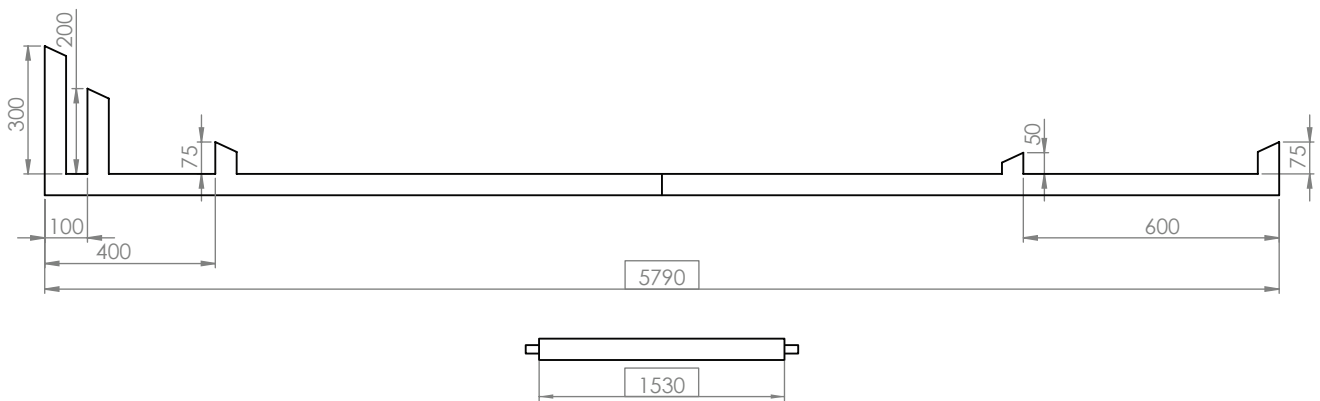


Figure X - Shear line
A downward curve of the deck at the deck to hull
join ie shearline is permitted as long as the
shearline is horizontal or curving upwards.

Figure 4 - Single Ski Jig
Drawing NOT TO SCALE

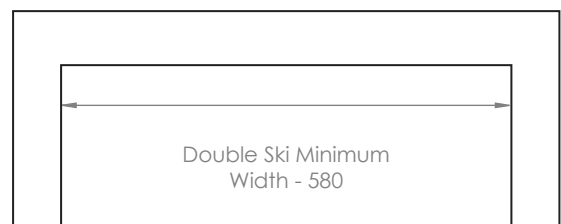
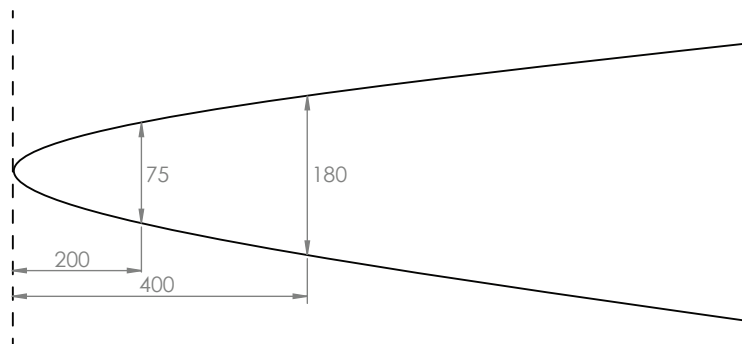
Bow

Stern



Add 1530mm spacer into centre of single jig to expand for the double jig.
Total length of double jig should be 7320mm

Bow Section





7. DOUBLE SURF SKI

- 7.1 Maximum length - 7.32 m (Includes wave deflector – not including any rudder)
- 7.2 Minimum structural weight 32kg. (Excludes removable deflector), includes all rudders and mechanism, rudder pedals and cables, all flexible foot straps, adjustable foot blocks and mechanism, pedals and seat pads, fixed fins, hatch covers and starting handles).
- 7.3 Ski's to be of mono construction.
- 7.4 Compliance labels to be secured to the surface of all Ski's manufactured to SLSA specifications
- 7.5 Ski structural laminate: Construction must not contain more than 1 layer of 225 gm E glass CSM (except where reinforced patches are required) all other layers must consist of stitched fabric or woven fabric of E, S or R glass, carbon fibre or Aramid fibre.

Core materials may be used provided they do not absorb water.

Gel coat must be a NPG Isophthalic, NPG orthophthalic or Isophthalic with high UV protection.

NOTE: A Ski can lose weight after manufacture, if weight loss is less than 250gms the weight may be replaced with permanent material provided the material is fixed to the craft e.g. Thermoset resin. Greater weight loss **MUST** be reported to SLSA and the manufacture. The craft cannot be used within Surf Life Saving until the weight is to the specification (32 kg.)

- 7.6 Minimum width: 580mm measured at widest point of hull and shall not include rubbing strips, mouldings, additional protective moulding or edges of rollover decks. 'If they are incorporated in the ski'. The measurement will be taken from the underside of the hull at the widest point excluding all rubbing strips, additional protective mouldings or rollover decks and shall have a minimum width of 580mm. Where rubbing strips, mouldings, additional protection mouldings or rollover decks are used the minimum width of the hull measured at the underside of such strip, moulding or rollover deck shall be 580mm.
- 7.7 Minimum width at a point of 400mm from the bow shall be 180mm.
- 7.8 Minimum width at a point of 200mm from the bow shall be 75mm.
- 7.9 The deck shall be continuous from the front of the footwell to the bow and shall not deflect down 400mm from the bow. This will apply to all new models, (does not apply to existing models in production) from the issue date of the new specifications.
- 7.10 When a built in deflector longer than 400mm is used the following method shall be used to measure the 180mm and 75mm minimum width of the hull. From the underside of the ski any deflector length in excess of 400mm shall be disregarded and the measurement taken from the 400mm point.

NOTE 1: Where the deck and/or gunwale is raised in a manner which increases the width of the hull the minimum width of 580mm is required to occur at a point on the underside of the hull on a line which represents the true line of the gunwale.

NOTE 2: Where rubbing strips, mouldings, additional protection mouldings or rollover decks are used the minimum width of the hull measured at the underside of such strip; moulding or rollover deck shall be 580mm.

- 7.11 Reverse curve is permitted in hull to provide greater lift and shall be built according to the following details:
 - (i) Reverse curve is permitted in hull only between forward edge of front footwells and bow of ski.
 - (ii) The maximum depth of the reverse curve shall be 20mm measured over a 130mm span. Width of span to be measured from deck line when removable deflector or built in deflector less than 400mm in length is used.



(iii) The maximum reverse curve width shall be measured at a point 400mm from the box of the ski and will reduce to no reverse curve at a point to the front of the forward edge of footwells.

(iv) When a ski has a built-in deflector longer than 400mm is used the following method shall be used to measure the 180mm minimum width of the hull [Clause 9.10 and maximum reverse curve Clause 9.11(ii)].

An approved SLSA template (see Figure 3) 180mm wide shall be placed against the underside of the ski, 400mm from the bow of the ski. Adjustable straight edges fitted to the template 130mm long shall be moved to ensure reverse curve to such straight edges do not exceed 20mm each side.

(v) No reverse curve, in any direction, is permitted in the hull between the front footstraps and stern of the ski.

NOTE: if repairs or manufacture result in a reverse curve being created the ski should be filled and faired to remove the reverse curve.

7.12 Component Specification

- (a) Deflectors (removable or built-in): Wave deflectors shall not be wider than maximum width of ski. Minimum edge radius shall be 3mm in elevation and in plan deflectors shall have a minimum radius of 25mm
- (b) Rudders: Rudder blades shall be of composite material or other approved material. Rudders must have a minimum profile radius of 25mm, except at the hull, minimum leading edge radius of 3mm and minimum trailing edge radius of 2mm. Leading Edge extends from the underside of the hull to the lowest point of the rudder. Any fixed fin must also conform to this clause.
- (c) Rudder Mechanisms: There must be no projection of the rudder mechanism, e.g., balls, screws, nails, pins or rods etc which could cause injury or damage. A plastic cover shall protect all rudder cables made of stainless steel.
- (d) Foot wells and seating wells shall be incorporated in the overall construction and be completely sealed from the hull.
- (e) Adjustable footblocks/straps may be used. Mechanism used in the adjustment must be approved and have no projections or sharp edges that can cause injury.
- (f) All foot straps MUST incorporate an approved centre release system.

7.13 Flotation: Double skis shall contain a minimum flotation in the form of foam or other approved material to achieve 30kg of positive buoyancy.

Flotation foam must not absorb water. If polystyrene is used the surface MUST be sealed.

7.14 All newly manufactured/approved Surf Boards shall have highly visible coloured tips. The approved colours available are outlined in the SLSA Colour Chart attached to this specification. Tips are to be applied with colourfast paint, resin or thermoplastic adhesive film from the tip of the nose and back from the end of the tail to a length of 100mm. This can be part of the logo or design. Where the deck and hull (bottom and top) join an allowance of 10mm disconnect, is acceptable.

7.15 Exemptions apply to Double Surf Skis with nose and tail colours in excess of 100mm in colours detailed in the Colour Chart.

7.16 All ventures protruding from the hull must have a minimum of 1.5mm radius on all exposed edges and be designed so no leading edge can cause injury due to wear through use. They must be constructed of plastic, rubber or composite. The use of metal ventures is not permitted.

7.17 Rudders: Rudder blades shall be of composite material or other approved material. Rudders must have a minimum profile radius of 25mm, except at the hull, minimum leading edge radius of 4mm and minimum trailing edge radius of 2.0 mm.



- 7.18** Design: Minimum measurements along the hull from a flat horizontal surface required are:
- (a) 75mm at stern to underside, which will be the general continued curvature line of the hull.
 - (b) 300mm at bow along true line of gunwale (deflectors are not considered to be a part of a true line of the gunwale and should not be included in the measurement).
 - (c) At 600mm in from stern, a clearance of 50mm.
 - (d) At 100mm in from bow, a clearance of 200mm.
 - (e) At 400mm in from bow, a clearance of 75mm.
 - (f) A double ski less than the maximum length of 7.32 metres must still comply to the measurements from bow and stern – for the curvature check.

Measuring: The ski must sit on SLSA's standard jig (see Figure 4) and touch or clear all jig measurements, keeping within the overall length. For skis less than the minimum length the jig must be adjusted to the length of the ski.

There must be no reverse curvature of the bottom of the ski from the bow to the line of SLSA's standard jig.

NOTE: For details of procedures of measurement refer to appropriate bulletins issued by Australian Council on Scrutineering of Surf Craft.

- 7.19** As a safety precaution, minimum profile of hull/deck at tail and bow (where removable deflector is used) of skis in either plan or side elevation shall be 25mm. Minimum radii in other direction to be 4mm.

Further minimum radii of V bow to be 4mm.

NOTE 1: Projection of overlapping deck past the hull at tail (and bow) to not exceed 5mm.

NOTE 2: If a deck overlap is less than 25mm deep at the join the 25mm radius must extend to 25mm depth minimum.

- 7.20** Ski Paddles: Currently no specification for paddles exists, however all paddles must be free of sharp or jagged edges (which may cause injury). Metal tipped paddles are NOT permitted to be used. Paddles with adjustable handles must have tape covering the joining mechanism.
- 7.21** Carrying handles may be attached to the skis provided such handles are not to cause injury and are approved by scrutineers.

8. JUNIOR 'NIPPER' COMPOSITE SURF BOARD

- 8.1** Maximum length – 2.0m
- 8.2** Minimum radii – Nose and Tail in plain view (see Fig 1, Page 5 – 25mm)
- 8.3** Minimum radii – Leading edge Nose and trailing edge Tail in elevation view (see Fig 2, Page 5 – 3mm)
- 8.4** Minimum Structural Weight – 4.5kg (includes one fin, plastic/rubber handles and knee/chest pads)
- 8.5** Minimum Width – not specified.
- 8.6** Only one fin is permitted. Fin must have minimum profile radius of 25mm at any point, minimum leading edge radius of 3mm and minimum trailing edge radius of 2.5mm. The Leading edge extends from underside of the board to the lowest point of the fin.
- 8.7** The board may be constructed of foam sandwich core with a composite laminate skin or of thermoplastic construction solid or hollow with or without a soft foam surface.



- 8.8** Surf boards must contain a minimum flotation in the form of foam or other approved material to provide buoyancy of 20kg mass. If the buoyancy foam used in the manufacturing of the board absorbs water, a permanent sticker must be applied advising the user "if the outer protective layer is pierced the board will absorb water".
- 8.9** Surf boards to be of mono construction.
- 8.10** All newly manufactured/approved Surf Boards shall have highly visible coloured tips. The approved colours are outlined in the SLSA Colour Chart attached to this specification. Tips are to be applied with colourfast paint, resin or thermoplastic adhesive film from the tip of the nose and back from the end of the tail to a length of 100mm. This can be part of the logo or design. Where the deck and hull (bottom and top) join an allowance of 10mm disconnect, is acceptable.
- 8.11** Exemptions apply to Nipper Fibreglass Surf Boards with nose and tail colours in excess of 100mm in colours detailed in the Colour Chart.
- 8.12** Surf board radius specifications
- (a)** Tail side view minimum radius 5mm.
 - (b)** Tail plan view minimum radius 25mm on both outside edges.
 - (c)** Nose plan view minimum radius 25 mm on both outside edges.
 - (d)** Nose side view minimum radius 3mm at tip of nose.
- 8.13** Junior (Nipper) Soft Surf boards complying to Specification No. 9 shall be deemed to comply to this Specification No. 8 if:
- (a)** Minimum structural weight complies to Clause 8.4, (i.e. 4.5kg) and
 - (b)** SLSA "Approved Compliance Sticker" is attached and date of manufacture and actual weight of board is recorded by manufacturer, and/or weight is verified before competition.

9. JUNIOR 'NIPPER' SOFT SURF BOARD

- 9.1** Maximum length – 2.0m
- 9.2** Minimum Nose Radii – Nose and Tail in plan view (see Fig 1, Page 5) – 25mm.
- 9.3** Minimum Radii – Leading edge Nose and trailing edge Tail in elevation view (see Fig 2, page 5) – 3mm.
- 9.4** Minimum Structural Weight – not specified.
- 9.5** Minimum Width – not specified.
- 9.6** Durometer hardness – Durometer reading will cover the complete radius of the rail, deck, nose and tail. The Durometer reading is type Shore A, hardness no greater than 70.
- 9.7** Only one fin is permitted. Fin must have minimum profile radius of 25mm at any point and minimum leading edge radius of 3mm and minimum trailing edge radius of 2.0mm. The fin is to be of flexible rubber/plastic material or moulded foam. The leading edge extends from underside of the board to the lowest point of the fin.
- 9.8** The board must be constructed of foam with solid core construction. No solid reinforcing stringers (e.g. fibreglass, wood, etc) are permitted. No hard plastic/fibreglass type coverings over the foam are permitted, i.e., the surface of the craft must be flexible.

NOTE: Plastic/rubber handles and plug attachments are permitted.



Boards constructed of Polyethylene or similar flexible material may incorporate internal stringers to provide rigidity. Such stringers must be adequately covered and approved by the National Surf Craft Officer.

Surf boards must contain a minimum floatation in the form of foam or other approved material to provide buoyancy of 20kg mass. If the buoyancy foam used in the manufacturing of the board absorbs water, a permanent sticker must be applied advising the user "if the outer protective layer is pierced the board will absorb water".

- 9.9** Newly manufactured Junior (nipper) Foam Surf Boards require a SLSA approved compliance sticker i.e those boards manufactured after the date of circulation of these Specifications (October 2016).

10. 'LONG BOARD' OPEN 9 FOOT DIVISION

This specification outlines the board requirements for all age divisions in the Long Board 9 Foot Division.

- 10.1** Length is a minimum 2.74 metres (9 feet) long measured from the nose to tail on the deck of the surf board.
- 10.2** Minimum width dimensions to total a minimum total 1195mm (47 inches) aggregate. i.e. the total of the widest point plus the width 305mm (12 inches) up from the tail and the width 305mm (12 inches) from the nose.
- 10.3** Surf boards must contain a minimum floatation in the form of foam or other approved material to provide buoyancy of 20kg mass.
- 10.4** The shape of the board is to be traditional and can include multiple fins and channels but cannot have non-integrated tail or nose blocks to make length.
- 10.5** A long board may be declared ineligible to be used in competition if it is deemed to be dangerous to either the competitor other competitors other competitors in the event.

11. SURF BOARD RIDING 'SHORT BOARD' DIVISION

- 11.1** This specification outlines the board requirements for all Board Riding age divisions in the Short Board Division.
- 11.2** Length is a maximum of 2.74 meters (9 feet) long measured from the nose to tail on the deck of the surf board.
- 11.3** Surf boards must contain a minimum floatation in the form of foam or other approved material to provide buoyancy of 20kg mass.
- 11.4** A short board may be declared ineligible to be used in competition if it is deemed to be dangerous to either the competitor other competitors other competitors in the event.



12. COMMUNICATION AND VIDEO DEVICES ON SURF BOARD AND SKIS

- 12.1** The use of communication devices is **NOT** permitted by competitors (either attached to a craft or to their person) from commencement to completion of a race.

Note: Surf Boat Sweep Coach Mentors, Assessors and Level 3 Coaches may, with the support of the appointed Boat Panel, make application to the Referee to utilise electronic communication devices at non-championship competitions to further mentor boat sweeps to gain competency in surf conditions, provided that such mentoring does not extend to "competing unfairly".

- 12.2** The use of a video camera is **NOT** permitted in competition on any Nipper Craft or attached to a competitor in a race using surf craft detailed in this document.
- 12.3** The use of one video camera is permitted on all other craft (except Nipper Craft – as detailed above) provided it is installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.
- 12.4** Installation on 3.2m Racing Surf boards shall be placed anywhere between the hand grips closest to the nose and the nose of the craft.
- 12.5** Installation on single and double skis shall be anywhere in front of the foot well.
- 12.6** The weight of any plugs permanently installed into the craft to attach the video camera shall be included in the overall weight of the craft.
- 12.7** The weight of other (non-permanently installed) mounts and camera are **NOT** to be included in the overall weight of the craft.
- 12.8** Installation on board riding short and long boards shall be up to the discretion of the rider provided that the video camera is installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.



SLSA APPROVED SURF CRAFT COLOUR CHART

The following are the approved colour codes for tips and solid colours of surf craft.



Fluorescent Pink
(PMS #16-2130 TN
'Knockout Pink')



Fluorescent Yellow
(PMS #13-0630 TN
'Safety Yellow')



Fluorescent Green
(PMS#13-0340 TN
'Green Gecko')



Fluorescent Orange
(PMS# 15-1360-TN
'Shocking orange')



Blue
Pantone Reflex Blue C



Red
Pantone 485C



Orange
Pantone 021C



Green
Pantone 7488C



Yellow
Pantone 102C



Violet
Pantone 2385 C



Pink
Pantone 232C



Black
Pantone Black C

Note: Junior Nipper Soft Surf Board and Board Riding Boards which are exempt form this requirement.

The colours depicted are for reference only. The actual colours are as per the colour codes. For further information refer to SLSA at 02 9215 8000 or info@slsa.asn.au.



SECTION 2: SURF BOAT SPECIFICATIONS



1. PURPOSE OF SPECIFICATION

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.

These specifications refer to boats used in SLSA competition and will be used by SLSA Officials to determine the eligibility, or otherwise, of a surf boat.

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.

Manufacturers have an obligation to SLSA to ensure that all boats manufactured comply with the appropriate specifications.

Clubs/competitors have a responsibility to ensure boats remain within specification.

When a change in basic design is contemplated, manufacturers shall first seek the advice of SLSA. A National Surf Boat Advisor will be nominated by SLSA to provide this advice under the authority of the Chair, Sport.

2. VARIATION TO CONSTRUCTION AND SPECIFICATIONS

- 2.1 Deviation to the Specification—SLSA, upon the recommendation of the National Competition Manager and/or the Chair, Sport after due consultation with the National Technical Adviser and Surf Boat Advisor, may allow a deviation to build a boat outside the SLSA Specification, subject to Clauses 3.2 and 3.3 of the Specification.
- 2.2 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 Craft / Surf Boat Advisor 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 Chair, Sport after due consultation with the Technical Adviser and the nominated National Surf Boat Advisor.
- 2.3 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.
- 2.4 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.
- 2.5 Specification Alteration Proposals—Any proposal to alter the Specification (including results of experimental testing) shall be submitted SLSA and nominated National Surf Boat Advisor for evaluation and endorsement of SLSA before implementation is permitted. This requirement includes any change in basic design contemplated by the Boat Builder.



- 2.6 National Meetings—The National Competitions Manager and/or the Board Appointed Chair of Sport and National Technical Adviser may convene meetings to consider and evaluate proposed changes or additions to the existing Specification.
- 2.7 Meeting Participants—The meetings may, in general, comprise SLSA's Competition Manager, the Board Appointed Chair of Sport, the National Technical Adviser the nominated National Surf Boat Advisor, Registered Boat Builders, and other invited persons such as surf boat scrutineers and inspectors.

3. INSPECTION PROCEDURE

- 3.1 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.
- 3.2 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.
- 3.3 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 Surf Craft / Surf Boat Advisor 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 3.5 Inspection Records—National Inspectors undertaking the mandatory inspections, for either a SLSA Compliance Program application or an experimental boat construction, shall use Surf Boat Checklist 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.
- 3.4 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.

4. REGISTRATION INTO COMPLIANCE PROGRAM

- 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 \$5500.00 (inc. GST) 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 layup and that they will be required to build one boat for inspection by the Hon. National Surf Craft / Surf Boat Advisor (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 Boat Manufacturer 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.
- 4.4 On completion, the manufacturer shall present the boat to the SLSA Surf Craft / Surf Boat Advisor or nominated National Inspector. The Advisor or nominated Inspector will pass or fail the boat. If the boat fails inspection the manufacturer can make the necessary changes for compliance, and further inspections can be arranged at a fee of \$200.00 (inc GST) pre inspection, plus travelling expenses incurred by the Inspector. Hon. National Surf Craft / Surf Boat Advisor
- 4.5 If the boat passes the inspection the manufacturer will be advised in writing of the outcome. This outcome cannot be assumed until written confirmation has been received by the manufacturer from SLSA.
- 4.6 If successful, an Official Agreement will then be forwarded to the manufacturer for their signature. Boat manufacturers cannot manufacture or sell items purporting to comply to SLSA Specifications until the agreement has been signed by the manufacturer and counter-signed by SLSA. The builder will then be acknowledged as a compliant manufacturer.
- 4.7 Manufacturers 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 manufacturer will be notified by SLSA of the reasons and what action that should be taken in order for registration to be reconsidered.
- 4.9 The manufacturer is then required (if successful) to purchase from SLSA, Compliance Labels 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). 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 located between the quarter bar and the stern bulkhead (or engrave directly, or glue and engraved or stamped plate to GRP). Further, the manufacturer 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 (known as the Compliance Decal Register).

Annual re-registration will occur prior to the 30th June of each year at which time an agreement will be forwarded by SLSA to each compliant manufacturer of the Compliance Program. A re-registration fee of \$775.00 (inc. GST; non-refundable) must accompany the agreement when returned to SLSA. If the agreement and fee is not received by SLSA by 30 September of the same year 30 days, the Manufacturer's agreement will become null and void. Should this occur, the manufacturer may again pay the \$5500.00 (includes GST) initial non-refundable registration fee and proceed through the original process in becoming a registered manufacturer if they wish to become a SLSA Registered Manufacturer.

- 4.11 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 Board Appointed Chair of Sport, the National Technical Adviser and the National Surf Boat Adviser (or their nominees) will adjudicate on each non-compliance matter separately and on their merits, as may be required.



- 4.12 The manufacturer should be aware that an authorised SLSA representative shall be entitled at all times during normal working hours to have necessary access to the manufacturer's premises to inspect boats, moulds, the construction process and the Compliance Decal 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.
- 4.13 The above registration and compliance fees may be varied by SLSA as deemed necessary and will be notified to manufacturers prior to implementation.
- 4.14 Boats built by registered manufacturers and not bearing the "SLSA Compliance Label" will not be permitted to participate in SLSA competitions/activity.

5. **TECHNICAL SPECIFICATIONS**

5.1 **General**

- 5.1.1 Boat manufacturers commencing construction of composite foam sandwich boats for the first time shall submit a test panel as directed by the National Surf Boat Adviser of the proposed layup, with full details to the National Surf Boat Adviser.
- 5.1.2 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 Craft / Surf Boat Advisor. 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.
- 5.1.3 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.

5.2 **Dimensions**

- 5.2.1 Length Overall – minimum 6.86m to a maximum 7.925m (not including the sweep outrigger).
- 5.2.2 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.
- 5.2.3 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.
- 5.2.4 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.
- 5.2.5 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.



5.3 Hull Construction

- 5.3.1 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 SLISA. 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.
- 5.3.2 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.
- 5.3.3 Foam Sandwich Hull
- 5.3.3.1 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).
- 5.3.3.2 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.
- 5.3.3.3 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.
- 5.3.3.4 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.
- 5.3.3.5 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 SLISA:
- (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.

5.3.4 Single Skin Glass Reinforced Plastic (GRP) Hull. Refer to Oct 10, 2002 Specification. Builders of single-skin FRP boats use Oct 10, 2002 rule.

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

5.3.6 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 joins shall be acceptable with a full taper ratio of minimum 12:1. Where specifically allowed in the Specification a SLSA approved foam cored GRP construction may be used in lieu of timber.

5.3.7 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.

5.3.8 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.

5.3.9 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.

5.3.10 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.



- 5.3.11 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 layouts:
- 5.3.11.1 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 layout shall be a minimum of: - 1000g/m² E-glass fabric or unidirectional rovings
- 5.3.11.2 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 layout is: - 2 layers of min. 668g/m² triaxial reinforcement fabric
- 5.3.11.3 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 layout is:
- | | |
|-----------------------|----------------------------------|
| Unidirectional Roving | 500g/m ² (fore & aft) |
| 2 layers Woven Fabric | 330g/m ² each |
- 5.3.12 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. Timbers 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 layout as the hull may be used in lieu of timber in stringers and seat risers.
- 5.3.13 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.
- 5.3.14 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 layout between the verticals is increased by a minimum of 40%; and (d) the lapped hull layout must be adequate to support the external false keel and connections.
- 5.3.15 External False Keel – A full length external keel shall be glued and/or screwed to the internal keel over the lapped hull layout 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.
- 5.3.16 Deep False Keel – Variations to the above configuration may be permitted if they comply with the following guidelines. The false keel shall be:
- of minimum length 2m;
 - placed, as a minimum, between No 2 thwart and the quarter bar;
 - 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.

5.3.17 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.

5.3.18 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.

5.3.19 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).

5.3.20 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 he top of the inner gunwale, and shall be adequately glassed to the inner gunwale, inside hull and the thwart (see Figure 3).

5.3.21 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.

5.3.22 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.

5.3.22.1 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.

5.3.22.2 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.

5.3.22.3 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

5.3.23 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:

5.3.23.1 Buoyancy – Full foam Sandwich Hull Construction additional buoyancy not required.

5.3.23.2 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.

5.3.24 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.



- 5.3.25 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.
- 5.3.26 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.
- 5.3.27 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.
- 5.3.28 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.
- 5.3.29 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.
- 5.3.30 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.
- 5.3.31 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.
- 5.3.32 Rowlock Fittings.
- 5.3.32.1 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 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”.
- 5.3.32.2 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.



- 5.3.33 Outrigger Rowlock Fittings – An outrigger 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. Outrigged fittings must be additionally protected for safety by a method approved by the Hon. National Surf Craft / Surf Boat Advisor. 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 outrigged 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).
- 5.3.34 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.
- 5.3.35 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.
- 5.3.36 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.
- 5.3.37 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.
- 5.3.38 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).
- 5.3.39 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.
- 5.3.39.1 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.



- 5.3.39.2 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.
- 5.3.39.3 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).
- 5.3.39.4 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.
- 5.3.39.5 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
- 5.3.39.6 Racing weight- The racing weight of the surf boat shall have a minimum weight of 197kg including seats, pumps and foot blocks. Excludes rowlocks, oars, batteries 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).

6. SPECIFICATION BINDING

- 6.1 All SLSA clubs and State Associations, and Compliant Boat Manufacturers 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.
- 6.2 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.
- 6.3 Should a dispute arise in relation to any aspect of this Specification then the Hon. National Surf Craft / Surf Boat Advisor shall, after consultation with the appropriate parties, arbitrate on the matter and whose decision shall be binding.



7. COMMUNICATION AND VIDEO DEVICES ON SURF BOATS

7.1 The use of communication devices is **NOT** permitted by competitors (either attached to a craft or to their person) from commencement to completion of a race in Championship competition.

However, Surf Boat Sweep Coach Mentors, Assessors and Level 3 Coaches may, with the support of the appointed Boat Panel, make application to the Referee to utilize electronic communication devices at non-championship competitions to further mentor boat sweeps to gain competency in surf conditions, provided that such mentoring does not extend to "competing unfairly".

7.2 With the exception of Boat Sweeps the use of a video camera attached to any part of a competitor is not permitted from the commencement of, to the completion of a race.

7.3 The use of video cameras on Surf Boats is permitted provided they are installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.

7.4 Installation shall be permitted on the splash board (front deck), on the tank opposite the stroke's seat (No.4) and rear deck.

7.5 The weight of any plugs permanently installed into the boat to attach the video camera shall be included in the overall "bare weight" of the boat.(d) The weight of other (non-permanently installed) mounts and camera are not to be included in the overall "racing weight" of the craft.

7.6 A Surf Boat Sweep (only) is also permitted to have a video camera on a helmet, worn by them, provided that the camera is installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.

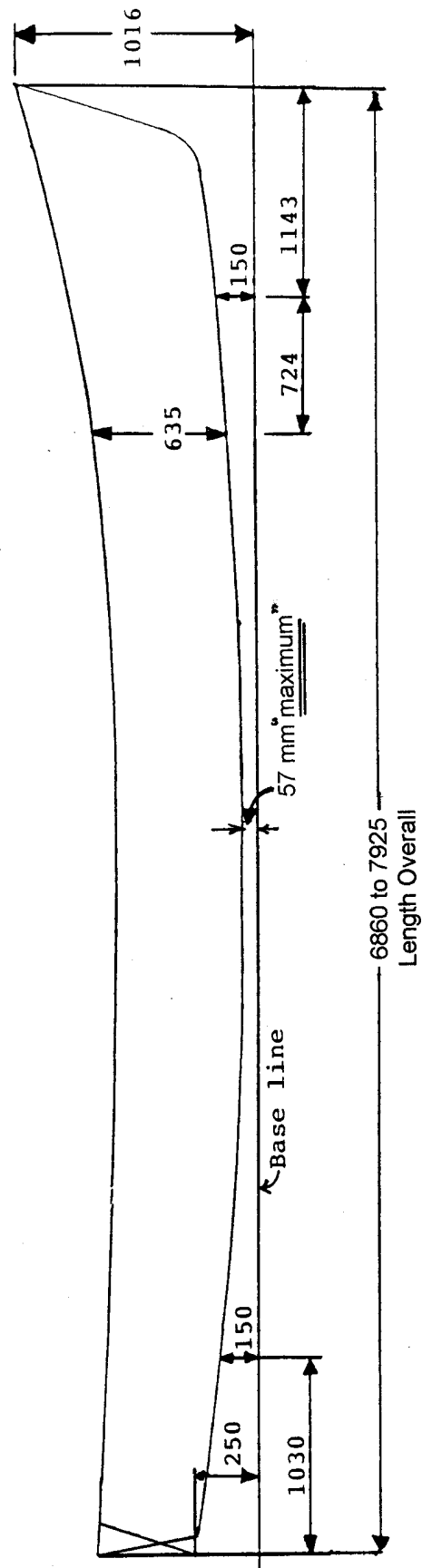


FIGURE 1. SURF BOAT MINIMUM ALLOWABLE PROFILE MEASUREMENTS (mm).

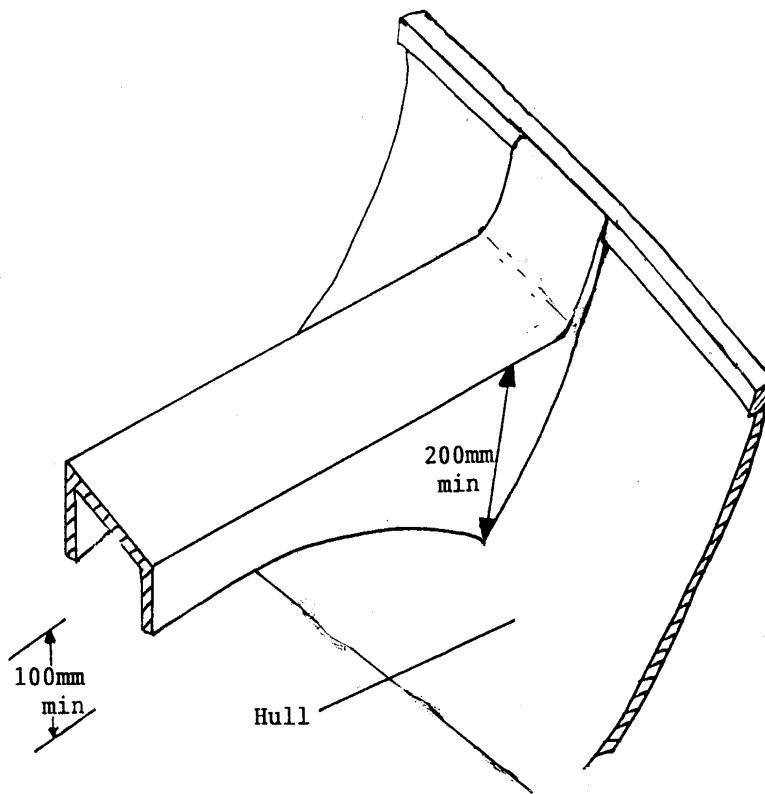


FIGURE 2. INVERTED U SHAPED THWART

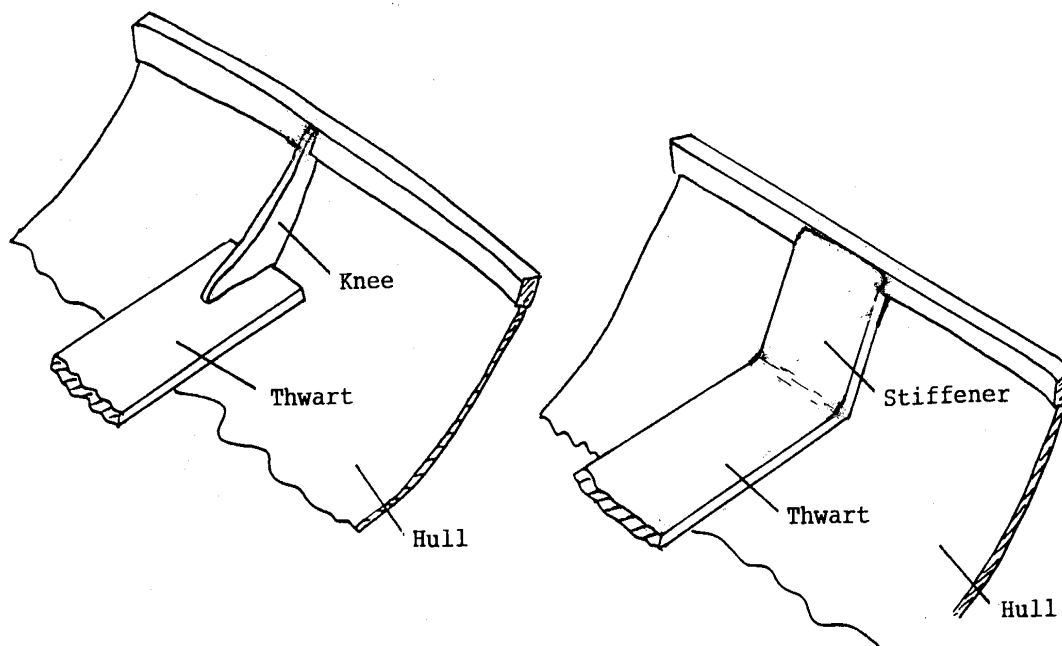


FIGURE 3. SINGLE THWART KNEE OR ALTERNATIVE STIFFENERS

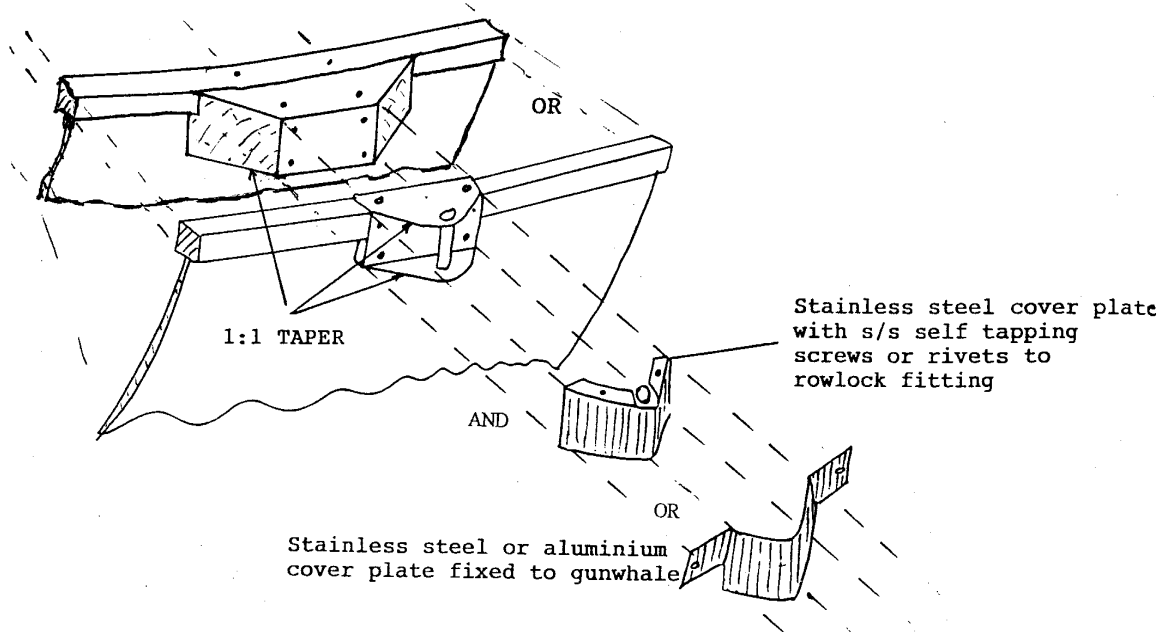


FIGURE 4. ROWLOCK FITTINGS APPROVED COVERS.

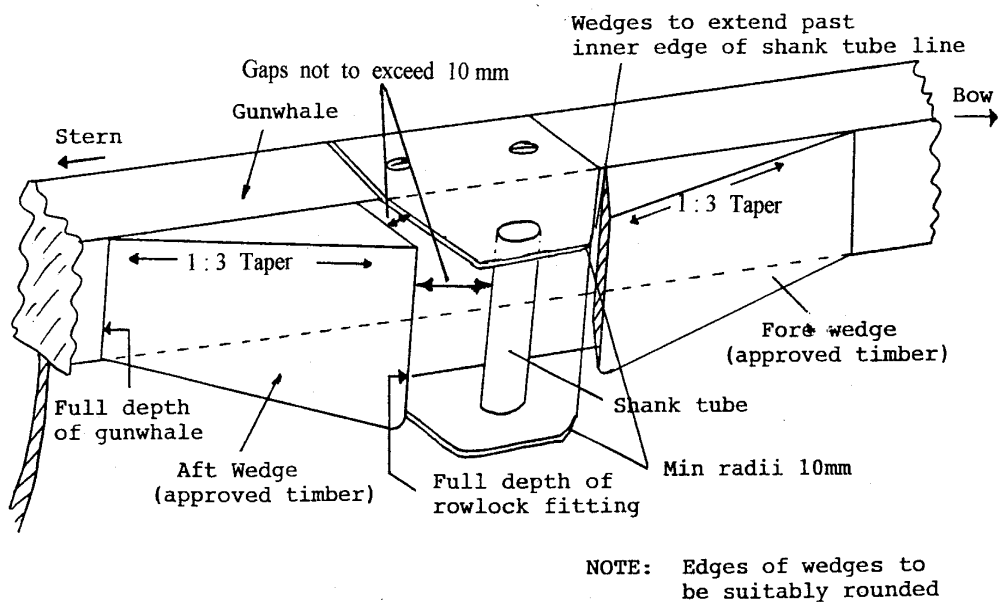
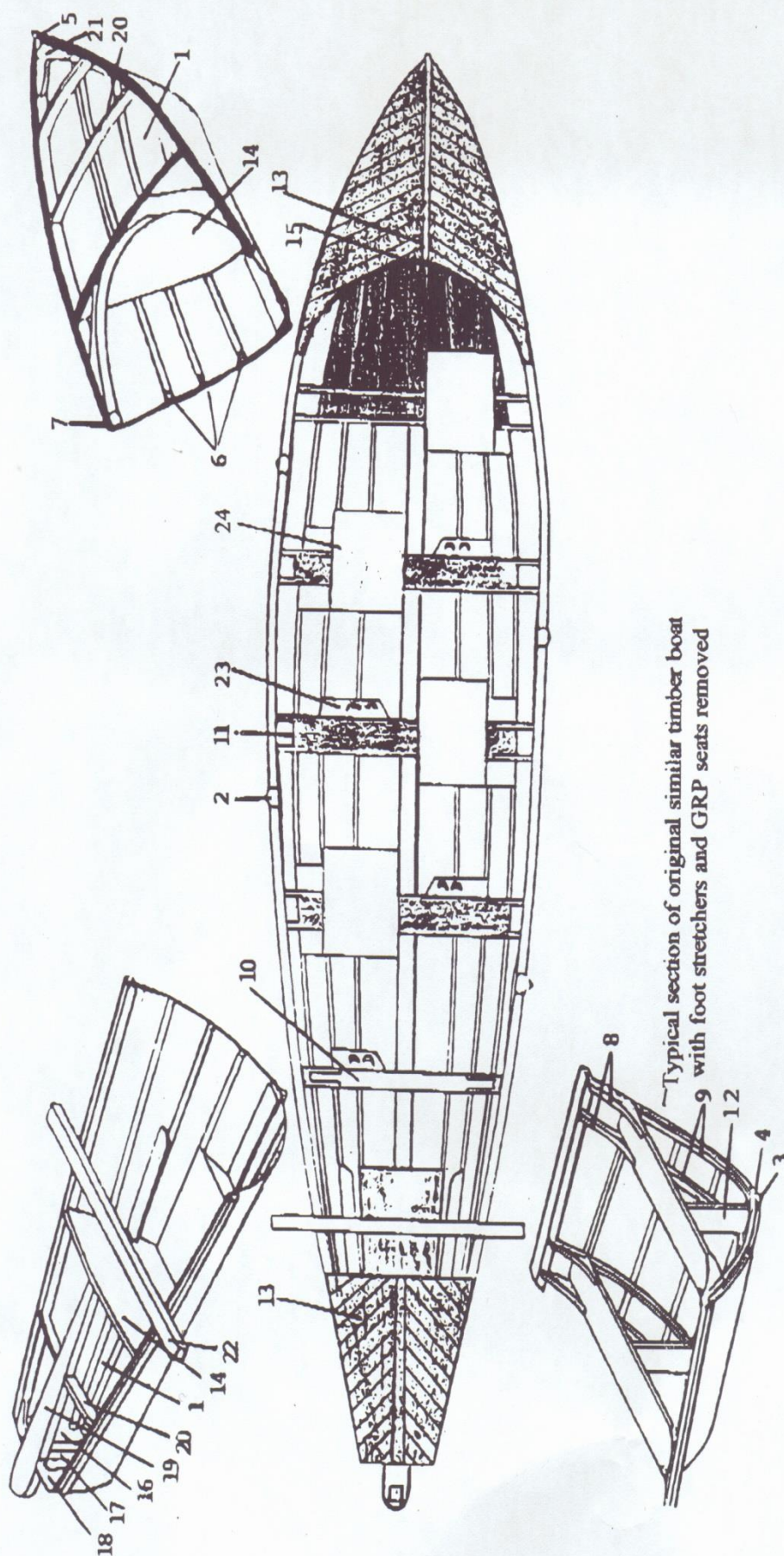


FIGURE 5. ROWLOCK FITTINGS PROTECTIVE WEDGES.



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

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

FIGURE 6. SECTIONS OF BOAT AND ITEM LIST