

# BOAT EXAMINER

## RWOF & SCRUTINEERING GUIDE

**This document has been written to assist Boat Examiners in the understanding of the rules and regulations as per the New Zealand Power Boat Association (NZPBA) rule book, and to assist in correctly identifying components and operating systems fitted to Race Craft that are subject to passing a safety examination.**

**Not to be interpreted as, replacing or superseding NZPBA rules**

All Race Craft must comply with the safety rules and minimum requirements as set out in the NZPBA rule book.

The minimum Race Craft requirements must also be read in conjunction with individual class rules and requirements.

**Where rule book wording has been used it will be in bold text.** Additional information has been added to assist in understanding current rules and requirements.

Boat Examiner: (rule 34,a,ii) A person **appointed by an NZPBA affiliated club**. The position of a Boat Examiner is to conduct examinations of race craft as per rules set by the NZPBA.

Disclaimer: A race craft examiner will not be accountable for any component or system failure on a race craft. Inspections carried out are only visual and no component or systems have been subject testing or suitability. It is the race craft owners and / or competitors responsibility to ensure components or systems are maintained and capable withstanding the extreme environment it operates in.

RWOF: Refers to the inspection and documentation process for race craft and safety equipment prior to race events (pre-season inspection). The inspection and documentation time will vary due to the different types of race craft, estimated time being 15 to 45 minutes. A thorough inspection of all components will be carried out. Access to all areas of the race craft, including accessible under deck areas are required. Components such as engine or fuel tank maybe required to be removed to gain access to some areas. Removed components may need to be refitted to complete the inspection process (this is at the examiners discretion if this is required). The race craft owner and / or competitor shall provide evidence that maintenance has been carried out as necessary or as per rules. Such evidence shall be any replaced components, receipts for any new components, servicing or testing. Inspecting, servicing or testing may also verified by photo evidence. The boat owner and / or competitor will be required to demonstrate that components and safety equipment are functional. The examiner will not issue a RWOF

until completely satisfied the race craft and competitor has met all requirements.

Scrutineering: Refers to the inspection and documentation process for race craft and competitor prior to competing at an event. The race craft inspection requirements are the same as RWOFF, but the inspection that is carried out is not as intense. All items will be checked and the examiner will ensure they meet all requirements. The race craft owner and / or competitor will be required to demonstrate that race craft components and safety equipment are functional. The examiner will ensure that the competitor documentation is complete and correct. The inspection and documentation time will vary due to the different types of race craft, estimated time being 10 to 20 minutes. More than one boat examiner may conduct the inspection process. The examiner will not allow the race craft or competitor to pass scrutineering until completely satisfied the race craft and competitor has met all requirements.

Disputes - RWOFF: If a race craft owner and / or competitor are not satisfied with the inspection or documentation process, pass or fail, the matter of concern should be first raised and discussed with the examiner. If still not satisfied, the complaint can be submitted in writing to the race craft owner's club secretary and the complaint will be investigated at committee level. If the complaint cannot be resolved at committee level, the complaint may be forwarded onto the NZPBA if required.

Disputes - Scrutineering: If a race craft owner and / or competitor are not satisfied with the inspection or documentation process, pass or fail, the matter of concern should be first raised and discussed with the examiner. If still not satisfied, the complaint may be submitted in writing to the event secretary. The complaint will be investigated by event officials. If the outcome of the complaint is not satisfactory, the matter is to be submitted in writing to the complainants' club secretary for further action.

Disciplinary Action: Should a Boat Examiner be found conducting inadequate RWOFF or Scrutineering inspections, their position as boat examiner may require them to undergo further training, be suspended or be terminated as an examiner.

Inspection Requirements / Documentation: Both RWOFF and Scrutineering inspections will be carried out using the NZPBA RWOFF and Scrutineering inspection form. Both RWOFF and Scrutineering will require the competitor(s) to be present (race craft owner should also be present) with the race craft. At scrutineering, the competitor(s) must have a current rule book / log sheet, current competitor's drivers licence, current registration and all relevant safety equipment present at the time of inspection. The competitor's rule book / log sheet must be present to check for any endorsements. The competitor(s) and / or race craft owner will be required to demonstrate that race craft components and all safety equipment are functional. Also with cockpit type race craft, the competitor(s) will be required to be wearing safety equipment and be seated in the cockpit, so that cockpit clearances can be checked, check that the seating position is correct, and that the safety harness fits correctly (Note1). A RWOFF sticker will only be issued once the RWOFF examiner is satisfied the race craft has met the inspection requirements. A race craft that fails a RWOFF inspection must be reinspected by the same

RWOF examiner after the fault(s) have been corrected. If this is not possible, a new RWOF examiner will inspect the race craft. The race craft owner must disclose that the race craft has failed its previous RWOF inspection and must present to the new RWOF examiner the failed inspection sheet. The new RWOF examiner will conduct a new inspection and issue a RWOF sticker once the RWOF examiner is satisfied that the race craft has met the inspection requirements. A race craft that fails a Scrutineering inspection must be reinspected by the same Scrutineering examiner after the fault(s) have been corrected before passing the Scrutineering inspection. Faults that cannot be corrected at the time will be 'recorded' in the front of the competitors rule book / log sheet. The competitor must present their rule book / log sheet at the next scrutineering inspection and have the faults 'signed off' (rule 34,a,iii). All documentation for both RWOF and Scrutineering must be completed in full before the examiner 'signs off' the inspection form. Incomplete documentation means the inspection is incomplete and therefore the race craft and / or competitor are not ready to compete. A failed RWOF or scrutineering inspection form should not be signed.

Note 1: Competitor(s) wearing safety equipment, seated in cockpit to check clearances and safety harness is only required during a RWOF inspection and only at Scrutineering if there is a different competitor(s) than usual.

Note 2: A RWOF inspection may be carried out without current race craft registration. This is normally due to an inspection being carried out prior to documentation being available. 'No Registration' should be clearly marked on the RWOF form and RWOF sticker can be issued (examiners discretion).

Race Craft Classification: Boat examiners are not responsible for checking of race craft classification during inspections. The race craft owner and / or competitor shall be responsible for ensuring that the race craft has met the required class requirements that the race craft is registered for and the events they have entered. Documentation regarding engine measurements shall be recorded during scrutineering inspections for nationals, island titles, feature events and record attempts (rule 84). Special events (normally kilo's or international events) that require specific information / documentation, this shall be the responsibility of the event officials. Examiners may be asked to assist in providing information to event officials.

Race Craft Presentation: Race craft must be presented complete for inspection (except components removed for inspection). A race craft presented incomplete or in an unpresentable state (hull damaged, not race ready, oil spillage in boat etc), the examiner may decline to carry out an inspection until such time the race craft is presented in a presentable state. As stated in **rule 34a,iii. "It shall be the sole responsibility of the owner of the boat to keep it up to the required standard throughout the RWOF period"**.

# **RWOF And Scrutineering Rules:**

## **Part A – All Race Craft**

**Rules in bold text.**    SR = Scrutineering Requirement.

**Fuel System: (no rule) (SR): “Fuel lines, petrol tanks and all connections leak proof and safe outlets from tank”.**

Ensure that fuel tank(s) are manufactured from suitable materials for the containment of fuel. Ensure Fuel tank(s) are secure. A tank ‘shut-off valve’ is recommended. All joints and connections are to be kept to a minimum and manufactured from suitable materials. All fuel hose connections must be secure and leak proof. ‘Zip-ties’ (cable-ties) are not acceptable on hose connections. All fuel hoses must be ‘approved fuel hose’ and must be correct for the type of fuel system they are fitted to (pressure rating). It is recommended that fuel tank breathers be vented externally. Race craft fitted with electric fuel pumps, it is recommended that an accessible ‘battery isolator switch’ is fitted.

**Steering: (no rule) (SR): “Adequately complies with the requirements and is in safe working order”.**

**All shackles and Pulleys: (no rule) (SR): “To be lock-wired or lock-nutted. No plastic coated or synthetic steering cable to be allowed”.**  
**Clubmans/Juniors can use a Spectra Cable.**

Ensure all components in the steering system are in good working order. Ensure all components and mountings are secure and adequate. Ensure all materials that are used for the construction of all steering components are adequate for their purpose. Ensure there are no visible cracks or faults. Steering stops must be fitted to prevent over turning. Components that are fitted with splines, key-way, dowel pins, collars are required to be secure with no movement. Steering free-play should be zero to absolute minimum. Steering wheel and steering column must be suitable for their purpose and secure. Steering Box or Steering Rack type steering must be suitable for their purpose and secure. Cable type steering – Cable drum or chain / sprocket must be suitable for their purpose and securely attached to steering column. Cables must be suitable for their purpose. Cables must be in good condition. Cable damage or fraying is not permitted. Pulleys and pivots must be in good condition, in good working order and suitable for their purpose. Pulleys must be of sufficient size in relation to cable size (pulley diameter). Cable ends must be double clamped or have manufactured end crimp. Cable connection to rudder quadrant must be clamped. Cable slack adjusters and shackles must be fitted with lock-nuts and / or lock-wire. Rod type steering – rods must be suitable for their purpose. Rods must be sufficiently rigid and supported to prevent undue flexing. Steering quadrants, pivots, tie rods, rod end bearings (rose-joints), bushes and bearings are to be in good condition and in good working order. All joints / connections are to be fitted with lock-nuts and / or locked-wire. Ensure rudder mounting is adequate and secure. Ensure rudder mounting area is adequate. Ensure rudder connection to quadrant is adequate and secure. Ensure rudder is retained by locking system. Ensure

rudder is adequate for its purpose. Outboard Engines – Ensure motor mounting to boat is adequate and secure. Ensure motor mounting area is adequate. Ensure steering arms connected to engine are adequate and secure. Ensure there are no visible cracks or faults. Ensure materials that are used for the construction of mountings and steering arms are adequate for their purpose.

**Propeller & Drive Shafts, Couplings, Universal Joints: (no rule) (SR):**

**“All adequately covered. Drive Shafts to be covered by at least one arrestor capable of containing the shaft in the event of breakage”.**

Ensure propeller, propeller shaft, strut, couplings and drive shafts, gear box, thrust bearing(s) (items where applicable) are secure. Ensure there are no visible cracks or faults. Ensure materials that are used for the construction of all components used in the propeller and drive line system are adequate for their purpose. The use of a propeller shaft safety collar (retainer) is recommended on all inboards to prevent propeller shaft from sliding back. Propeller nuts must be lock-type nuts or split pinned.

**Fins: (no rule) (SR): “Securely bolted”.**

Ensure fins and mountings adequate and are secure. Ensure mounting area is adequate. Ensure there are no visible cracks or faults. Ensure materials that are used for the construction of fins and mountings are adequate for their purpose.

**Buoyancy Requirements: (rule 34b-iii, 41, 41a, 62- Formula 1 -v).**

**(SR): “Adequate as per rules”.**

**“Minimum buoyancy requirements for all craft competing in regattas and club days will be .03 cubic meters displacement to each 45 kilos weight of engine”. “Sealed compartments shall not be the sole means of buoyancy”. (F1 rule) “All boats to have reinforced (fixed) flotation behind the driver’s bulkhead. Flotation is recommended to be no less than 3.5 cubic feet and is to be contained”.**

Ensure all race craft must have sufficient buoyancy. It is recommended that buoyancy should be fitted to more than one area of the race craft and be and securely attached. F1/F2 type race craft have specific buoyancy requirements and some boats have air-bag flotation systems fitted (refer to boat owner for inspection procedures on air-bag flotation systems).

**Battery: (no rule) (SR): “Securely fastened on platform clear of bottom”.**

Ensure battery is securely fastened and on platform clear of bottom of race craft. Race craft with electric fuel pumps, it is recommended that an accessible ‘battery isolator switch’ is fitted. Attention should also be given to battery and electrical cable location and condition.

**Fire Extinguisher: (rule 43) (SR): “Fire extinguisher, one per boat immediately available in pit area or on service vehicle in pit area.**

**Specifications: a minimum one extinguisher, size no less than 2.5kg.**

**Extinguisher characteristics to be one of the following: ABC**

**(multipurpose) stored dry powder type, halon 1211 or 1301 (BCF or BTM) or equivalent. CO2 type is not acceptable. Extinguisher to carry current NZ certification annually”.**

Ensure fire extinguisher meets the requirements and is in operational condition, ie: contents gauge reads full (if fitted) and safety seal tag is intact.

**Life Jackets: (rule 35, 62 - J Class):** “The wearing of a life jacket is compulsory for all drivers, co-drivers and starting boat personnel. That the approved types of life jacket be compulsory for all drivers and co-pilots of boats in excess of 100 kph. Association approved types are Hutchwilco racing jacket, Tiger Racing Jackets Lifeline, DTG, Record, Simpson, SOS Safety cell suit. All jackets used by NZPBA drivers and co-drivers must have leg or crutch straps fitted”. (J Class) “All competitors must wear collard lifejackets with crutch straps to N.Z. Safety standards (must be compatible to drivers weight)”.

Ensure life jacket(s) meet the requirements. Ensure attached components are in good condition and are in working order.

**Note:** Some life jackets have ‘speed rating’ (restrictions). Check to see if life jacket suits the application (class speed record). Check that drivers do know how to correctly wear their life jackets --- correct use of leg / crutch straps and other adjustments.

**Helmet: (rule 36a, 40) (SR):** “All Helmets to be majority percentage of a bright or fluorescent red, orange or yellow colour. All helmets must meet the specifications approved by the Standards Association of NZ (S.A.N.Z). Helmets to be road motorcycle type only, no motocross, sports car or half shell types shall be permitted”. “The wearing of the approved types of life jackets and crash helmets is compulsory and must be worn at all times racing is in progress by any driver on the water. Pole or starting boat personal need not wear helmets.

Ensure Helmet(s) meets the requirements and must be in good condition (no signs of damage). Ensure helmet fitment is correct. Check chin-strap mounting points and chin-strap operation. (no rusty rivets or corrosion).

**Overalls and socks for Drivers: (no rule) (SR):** “To be of cotton manufacture or fireproof only. Nylon or plastic banned. (Wet suits may be worn under racing overalls).”

Ensure Overalls meet the requirements. Polyester type overalls are not acceptable.

**Yellow Paddle: (rule 38) (SR):** “Yellow paddle in boat, 500 sq.cm. minimum blade area, overall length 75cm minimum.”

Ensure paddle is in the race craft and meets the requirements.

**Ignition Switch: (rule 37) (SR):** “All boats to be fitted with an engine kill switch to be of outboard marine type i.e. Yamaha, Suzuki, Mariner, Mercury or equivalent activated by a cord permanently attached to the drivers life jacket which will turn off the engine if the driver leaves the driving position. On motors that are not suitable for this a fuel shut-off device must be fitted. In boats fitted with an approved protective cockpit / restraint system this shall be optional. Jet boats in river races are exempt. Ensure kill switch cord is attached to the drivers life jacket. Ensure engine kill switch and / or fuel shut-off device is operational.

**Positive Throttle Shut Off: (no rule – except Clubman’s Class) (SR):** “Must be adequate to shut throttle butterflies in case of a cable or rod breakage”

**(Clubman's Class): "...Boat must be fitted with foot throttle or dead man hand throttle".**

Ensure throttle system operates correctly. Ensure at least one return spring is fitted to actual throttle linkage on engine (carburettor or throttle body). No pre-set hand throttles permitted.

**Tow Rope: (rule 38) (SR): "Minimum diameter 8mm with an 8cm eye spliced to the extreme end. The use of a tow rope is optional. All race boats must be fitted with tow eye a minimum diameter of 20mm or bollard strong enough to take the weight of the boat".**

Ensure tow eye meets the requirements.

**Hull Condition / Cowlings: (no rule) (SR):**

Ensure a thorough inspection of the hull is carried out in all areas. Ensure attention is given to all major load carrying areas e.g. drivers seating position and controls area, steering and rudder area, engine mounting area, driveline area, turn-fin area and sponsons (if fitted). Ensure areas that contain minor cracking are minor and not actual breakages. Ensure cowlings are adequately secured. F1/F2 type race craft must have sponson pickles that deform.

**Signage – Trailer name, Registered Boat Number, Boat name Club Name, Fuel: (rule 42, 62i, k) (SR): "That all owners should have the boat trailer bear the name in conspicuous position. The height of the lettering must be at least 50mm high and written on a vertical flat surface facing forward at front of trailer". "On racing craft all Class numbers must be prefixed with the letter and painted on both sides of the hull. Number and letter must be painted in a colour strongly contrasting with the background. Numbers and letters to be displayed where possible on a vertical surface, visible to control whilst racing. They shall not be less than 15cm high and where space permits 3cm wide". "All Registered Names to be painted on both sides of the boat in such colours, style and position, so as to be able to read clearly from the shoreline or control while the boat is racing". "Club names must be displayed". "Boats using methanol fuels to display a day-glow red M in front of their class number and letter".**

Ensure letters / numbers meet the requirements.

## **Part B – Race Craft With Protective Cockpits**

**NZPBA Approval Sighted: (rule 34b) (SR) “Cockpit Approval”** All reinforced cockpits, manufactured in New Zealand or imported from overseas are to carry the ‘NZPBA Approval’ (serial number to be attached to cockpit). The Approval number must be sighted and recorded on the RWOFF or Scrutineering form. Cockpit approval refers to the construction method and attachment to the race craft. Condition of the cockpit must be examined during the RWOFF and Scrutineering inspection. Any deterioration, accident damage, fire damage, repairs or modifications, requires the reinforced cockpit to be re-examined by an approved cockpit examiner. A cockpit must pass its cockpit inspection before the cockpit can be passed by RWOFF or Scrutineering inspections. Any cockpit fault is to be ‘recorded’ in the front of the competitors rule book / log sheet, and when the cockpit fault is repaired, it must be ‘signed-off’. A new RWOFF inspection must be carried out after any cockpit repair (rule34a,iii).

**General:** Minimum 2” (50mm) recommended 4” (100mm) clearance above competitor to cockpit or canopy covering at least 50% of the top of the helmet and at least 50% of the side of the helmet with the competitors head in the furthest aft position as an integral part of the reinforced cockpit construction. The top of the front of the cockpit will be a maximum of 4” (100mm) below eye level. The cockpit area must be completely sealed off from the engine compartment to prevent the intrusion of fire, fuel or harmful vapours in the cockpit. Openings for restraint harnesses, wiring, cables, hoses, etc. must be kept to a minimum. The use of grommets or other types of sealing devices are recommended around these openings.

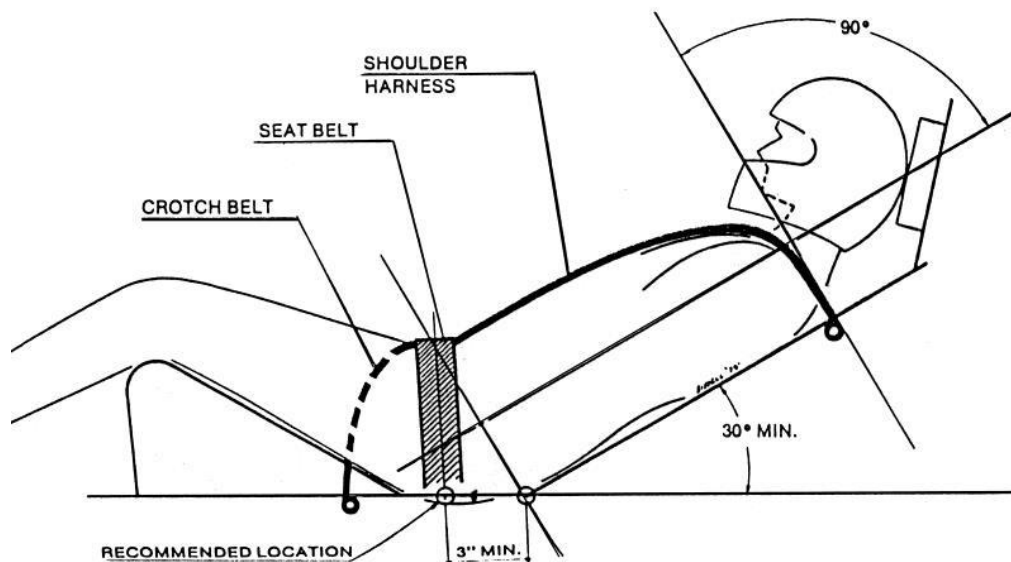
**Safety Harness: (rule 34b,ii) (SR) “Any competitor using a reinforced cockpit restraint system will use a NZPBA approved restraint harness consisting of a minimum 5 strap / 4 point mounting design. Straps shall all hook together in a central quick release system. All harness attachment points must be secured such as would be expected in an aircraft”.**

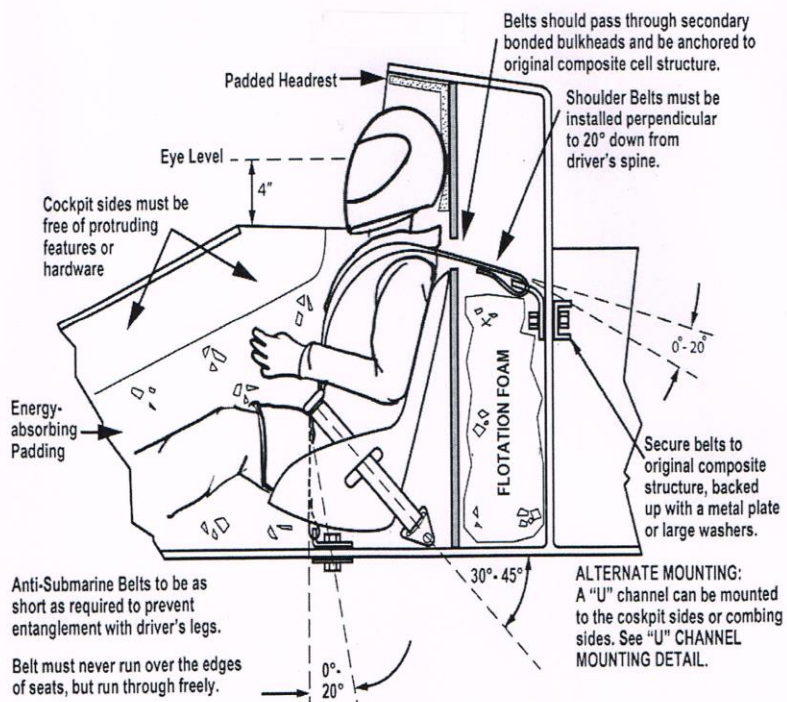
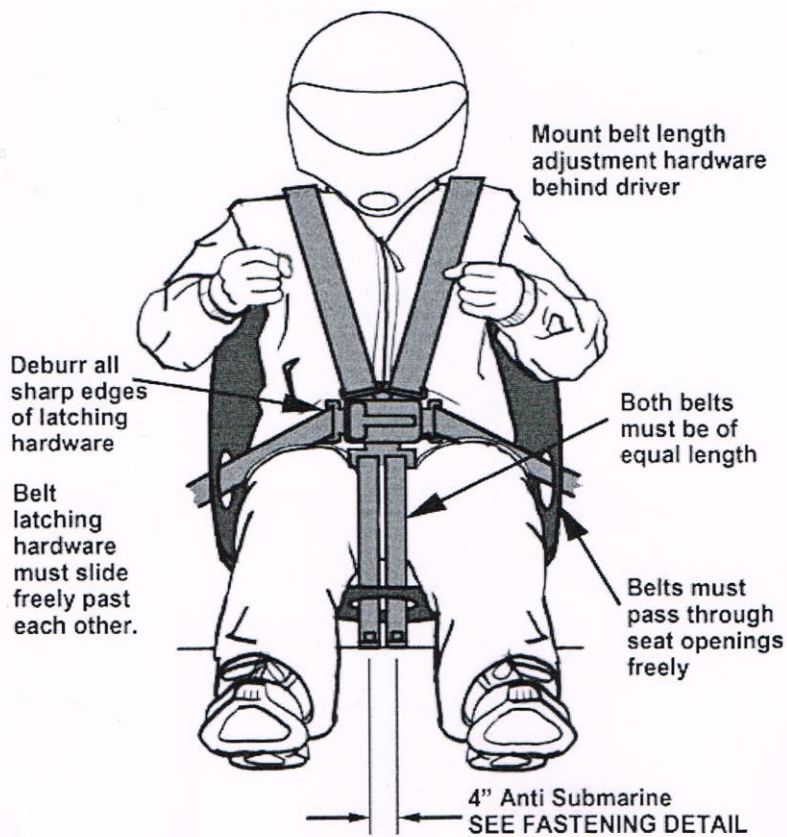
**General:** To the degree practical, the seating system, whether upright or reclining, should provide lateral support on both left and right sides. The competitor should be positioned as far rearward and as close to the seat back bulkhead as possible. It is absolutely necessary, in the reclining position, to provide a kick-up (roll-up) forward to the buttocks of sufficient height and strength to prevent forward movement and / or rotation of the torso under the safety harness. In the reclining position, adequate padding is recommended under the buttocks to absorb impact (Note 1). The seat must be constructed and mounted from suitable materials to support the competitor and to withstand loads during racing or impact. Ensure safety harness is in good condition and working order. Ensure the competitor is seated in cockpit to check that the safety harness fits the competitor correctly and that mounting points are in the correct positions. Also check that head clearance inside the cockpit is sufficient. The safety harness must be worn as tight as possible,



and in such a manner that it passes around the pelvic area below the anterior superior iliac spines. Under no condition may it be worn over the area of the intestines or abdomen, or pass over the sides of the seat. It should come through the seat at the bottom of each side, thereby wrapping and holding the pelvic area over the greatest possible area. Where the safety harness passes through the sides of the seat, the seat edges must be rolled and / or grommeted to prevent chafing or cutting of the safety harness. Two belts joining in a 'Y' form, behind the neck, to form one strap may not be used, unless mounted with the 'Y' section outside the cell or in such a way as to not allow the shoulder harnesses to collapse on the driver's neck. Harness straps should be attached directly to reinforced structural member of the race boat close behind the driver's head and neck. At points of attachment they should be 4 to 6 inches (100mm to 150mm) apart. They should be attached to a line approximately 90 degrees to a line of the seat back and approximately level with but not above the top of the driver's shoulders. Where the straps pass through the seat or body structure of the race boat, the edges must be rolled and / or grommeted to prevent cutting or chafing of the straps. Safety harness adjusting hardware shall be fitted in a manner to minimize injury in case of impact. Hardware should be placed over fleshy area of the body and away from bones. Safety harness mounts must not protrude in a manner that could possibly cause a driver injury. These mounts and their attachments to the chassis must be designed to withstand loads equal to or greater than the minimum allowable tensile strength of the safety harness.

Note 1: The Competitor may opt to sit directly in the cockpit without an actual seat, but the seating area must provide lateral support on both left and right sides, and a kick-up (if required) as a seat would normally feature.





**Recommended Safety Harness Specifications:**

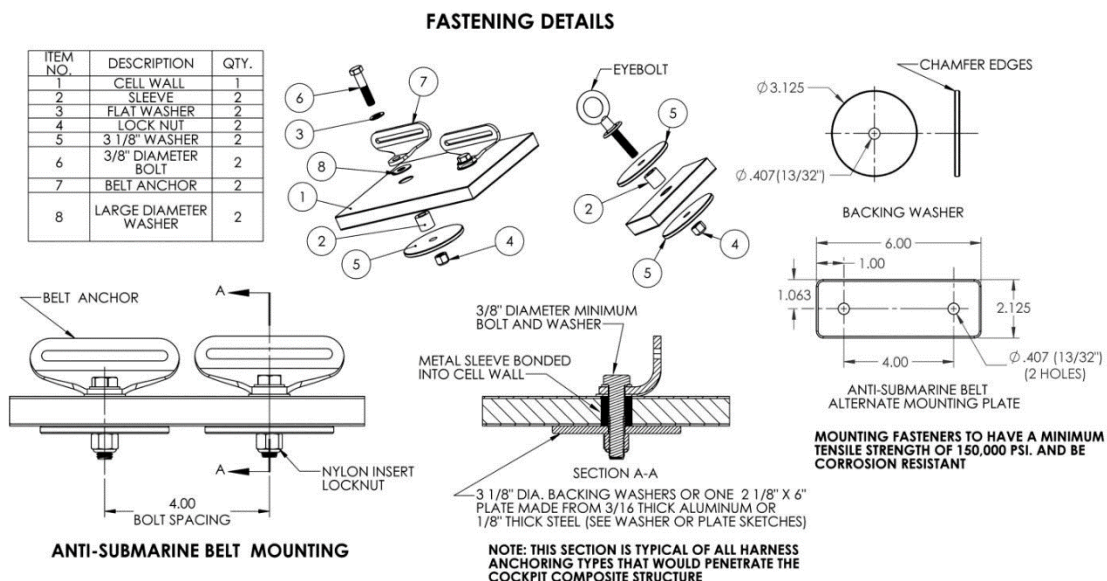
- Minimum 5 strap / 4 point mounting (6 point belts control the body better).
- Minimum width: 2 inches (50mm) (3 inch / 75mm width is better).
- Polyester belt material is strongly recommended. Polyester belts are less likely to creep in its adjusters, stretches up to 6% wet or dry (nylon belts 12% - 15% dry, and in excess of 20% when wet). Polyester belts are not affected by UV as nylon belts will deteriorate.
- Belt material to be as short as practical.
- Metal to metal quick release buckle (lever/latch type is best, rotary type have been known to jam).
- A high strength, highly visible lanyard will be attached to the release lever of the lever/latch system.
- Safety harness must be inspected, maintained and replaced as per manufactures specifications.

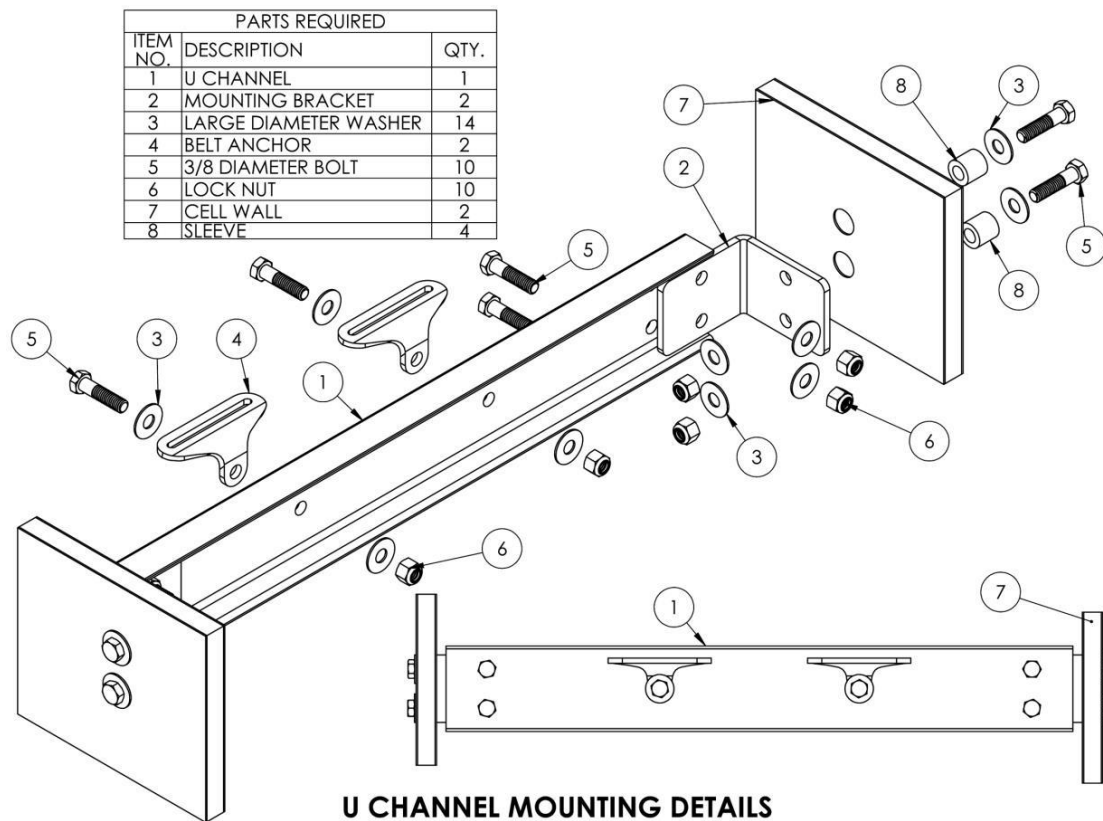
**Recommended Safety Harness Mounting Specifications:**

All safety harness to be installed as per manufactures specifications in conjunction with these minimum mounting requirements:

- Fasteners for driver restraint systems that are mounted through .062 inch thickness or less panels, require a doubler of sufficient dimension to distribute loading. These mounts, and their attachments to the chassis, must be designed to withstand loads equal to or greater than the minimum allowable tensile strength of the belts.

- When drilling and / or mounting into capsules, all coring must be coated with epoxy. When mounting, use a aluminium or stainless steel sleeve with a washer machined or welded to the sleeve. Or make hard spots, epoxy and cab-o-sil or fumed silica must be used to create the hard spot. The hard spot must be 3-times larger than the diameter of the bolt being used for mounting. If using an aluminium or stainless steel sleeve, the sleeve must be mechanically fastened with epoxy, thus sealing the exposed coring.





**Adequate Flotation Attached To Break-away Type Cockpit: (rule 34b,iv)** (SR) “Boats designed with ‘Break-away’ cockpit structures must include permanently attached flotation capable of floating the cockpit, driver and any attached structure”. Ensure flotation is attached and is sufficient.

**No Sharp Edges Or Protrusions Inside Or Around The Entry Way: (Rule 34b,vi,a)** (SR) “No sharp edges or protrusions anywhere inside or around the entryway of the cockpit”. Ensure area is safe.

**Foam Padding Inside The Cockpit In Likely Impact Areas:(rule 34vi,b)** (SR) “Energy absorbing foam padding strategically placed inside the cockpit areas where the knees, arms, helmet etc. might impact”. Ensure padding is sufficient. Minimum 1/2” (12.5mm) 9 lbs (4kg) Ethofoam support behind competitors head to prevent slapping rear of cockpit with helmet

**Removable Spring Loaded Steering Wheel: (rule 34b,vi,c)** (SR) “A removable steering wheel ‘Spring-loaded’. The steering wheel must be easily removed without the use of tools”. Ensure steering wheel can be removed and when refitted it is secure. The driver must be able to demonstrate the steering wheel removal with ease with one hand. Steering wheel / column extensions are permitted, but the release mechanism function directly behind the steering wheel must be retained.

**Flashing Orange / Red Lights, or Yellow or Orange Flag or Paddle: (rule 34b,vi,e)** (SR). “As a means of attracting officials and rescue boats be fitted with flashing orange / red lights or carry a yellow or orange flag / paddle to be waved by the driver”. Ensure one option is chosen and is functional. Record option on rwof or scrutineering inspection form.

**Left And Right Hand Rear Vision Mirrors Fitted: (rule 34b,vi,f) (SR) “Left and right hand rear view mirrors installed”**. Ensure mirrors are fitted and are functional.

**Triangular, Rescue Orange Marking, Under Drivers Seating Position: (no rule) (SR)**. Ensure Orange marking is present.

**Approved Ski Type Jacket or Buoyancy Vest: (rule 34b,vii,a,viii,e,35a) (SR) “Wear a NZPBA approved ski type jacket, orange in colour with ballistic covering and have approximately 10lbs (4.5kg) of flotation and equipped with epaulet type extraction loops on the shoulders and properly fitted crutch straps to prevent it being accidentally pulled over the head during lifting. Or – A NZPBA approved self-inflating buoyancy vest, provided the overalls being worn by the driver have epaulet type lifting loops on the shoulders. Or – Driver has option to wear overall flotation device. Or – That the wearing of life jackets in GP Hydroplane Boats with fully enclosed approved safety cell is optional”**. Ensure the ‘Flotation Device’ meets the requirements. If Ski Jacket with crutch straps or Full Vest is used, they must have epaulet type extraction loops fitted, or must have epaulet type extraction loops fitted to overalls (the overalls must be 1 piece type overalls). Record option on rwof or scrutineering inspection form.

### **Boats With Full Coverage Canopies Must Also Have:**

**Positive Air Flow Ventilation: (rule 34b,viii,a) (SR) “Positive air flow ventilation”**. Ensure there is air ventilation vents.

**Internal And External Release Capability: (rule 34b,viii,b) (SR) “Canopy must have both internal and external release capability”**. Ensure canopy has both internal and external release capability.

**Escape Hatch On Bottom Of Cockpit With Clear Section For Vision And Light, External Release Capability And Bright Orange In Colour: (rule 34b,viii,c) (SR) “Must have escape hatch on the bottom of the cockpit. Hatch to have a clear section for vision and light, external release capability and be bright orange in colour**. Ensure escape hatch meets the requirements and has external release capability.

**Complies With General Protective Cockpits / Restraint Rules As Per Rules 34b:.....**refer to above rule regarding safety harness.

## **Part C – Items In Use, Not Covered by NZPBA Rules:**

**Helmet Restraints:** (open type boat) A restraint device of a type that restricts movement of the head and secures the Helmet to the body or arms by straps.

**Helmet Restraints:** (cockpit type boat) A restraint device of a type that restricts movement of the head and secures the helmet to the body by straps / cradle secured by the drivers safety harness. Often referred as a “HANS Device”.

**Ballistic Pants / Suits:** Additional safety clothing to protect the driver when exiting the race craft in an accident. Ballistic material can be manufactured from: Kevlar – a cut and abrasion resistant material. Spectra – a cut and abrasion resistant material. TUFF-N-LITE – the highest rated cut and abrasion resistant material. 1000 Devier Cordura Nylon – an abrasion resistant material.

**Prop Release:** A device that allows the propeller shaft to free-wheel in the event of an engine lock-up. Often referred as a “Wirlaway”

**Overalls / Gloves / Footwear:** Drivers in cockpit type boats should have fire retardant type overalls, gloves, footwear.

**Onboard Fire Extinguisher Systems:** The use of onboard fire extinguisher systems is (A) optional (not required under NZPBA rules). (B) Required as per international event / class rule / requirement. It shall be the competitors sole responsibility to ensure the fire system meets the requirement, is fitted correctly, functioning correctly, have a fully charged and secured fire extinguisher at all times.

**Hull Trim:** Components used to control the “riding” of the race craft (depending on type / class of race craft) such as motor trim (tilt), motor raise / lower, trim tabs, cavitation plate, fixed and adjustable wings. Ensure all trim components are in good working order. Ensure all components and mountings are secure and adequate. Ensure all materials that are used for the construction of all trim components are adequate for their purpose. Ensure there are no visible cracks or faults.

**Helmets:** A wide range of helmets are manufactured that do not meet the NZPBA rule book ruling. Many helmets are designed for other motorsports and their features are quite different to motorcycle types. Also in use in cockpit type boats are aviation type helmets. These are widely used here and overseas and are well suited with air systems. Brands like MSA–Gentex, Milspec, Peltor. Ensure helmet is in good general condition, check that straps are not frayed or torn and that latching hardware is not rusted or bent or rivets loose. Ensure the shell is not damaged or cracked.

**Air System:** A full-time on board air system is recommended for all boats competing with a full structural canopy type cockpit. The following guidelines should be followed. The driver’s mask should cover the driver’s nose and mouth and be designed to be watertight. The mask should be attached in such a way as to prevent it

being dislodged or removed inadvertently and must be worn by the driver anytime the boat is under power.

A 30 cubic foot bottle is highly recommended for all boats with an enclosed safety cell. All air delivery systems, whether permanent or part time, shall carry air in a vessel approved and certified for the delivery of breathing air. The vessel must also be stamped showing it has been inspected and certified to meet standards. All components of the air system should be rated for use with compressed air and for the pressures to which they will be subject.

Air hoses should be between ten (10) and fifteen (15) feet long; measured starting at the centre of the steering wheel. A quick release coupler must be installed in the air supply between the first stage regulator and the second stage regulator, located between ten (10) and Thirty-six (36) inches from the driver's mask or helmet. All connections in the air system must be done with commercially accepted or SCUBA type, high pressure crimped ends. Hose clamps are not acceptable.

It is recommended that Drivers of Boats fitted with a Reinforced Cockpit and air systems complete appropriate SCUBA training as offered by professional diving instructors or organisations.

**Note: Coupling connection configuration used in New Zealand, Australia and America vary.**

It shall be the competitors sole responsibility to ensure the air system is fitted correctly, functioning correctly, have a fully charged and secured air bottle at all times.

**Additional Signage:**

- To assist rescue crews, reinforced cockpit boats must have the following critical information labelled on the bottom of the cockpit, using 3" letters on a strongly contrasting background:
- Boat letter and number designation.
- Restraint belt - If using lever type (latch & link), do not put anything; If using rotary type, put rotary.
- If air system is used, put air.
- If head restraint is used, put head restraint.

**Lifting Of Boats:** All boats which are to be lifted in or out of the water must be equipped with suitable and adequate lifting rings and gear. Such lifting rings and gear must be approved by the boat examiner at scrutineering. Without such approval the boat will not be lifted by any crane or other device provided at the event.

Check lifting stopes for **certification** and expiry.

Check for,

- Cuts or damage to web slings
- Damage to metal eyes or other end fittings
- Corrosion
- Worn, stretched or deformed chain links
- Worn stretched or deformed hooks and fittings
- Broken strands on wire ropes
- Kinks or deformation of wire

Ensure that hardware in the hull is of sufficient strength and in good order.

Check hull condition around lifting points and bolts, ensure there is no rot or excessive compression of timbers or composite materials.

**Cameras:** The use of image recording devices is permitted. No image recording devices may be attached to helmets. (Empirical data is showing that when the camera does not disengage immediately upon water impact it can lead to a neck injury. The camera acts as a keel and creates drag using the neck as the fulcrum). The image recording equipment must not hinder the driver while competing or when the driver is being removed from the boat in the case of an emergency.

**Radio Communication:** Radio communications to the driver is permitted. The radios must not interfere with communications of the race control or another race craft. They must use another frequency or channel or the race control shall prohibit the use of the radios that are causing interference. The communication system in the boat must not hinder the driver while competing or when the driver is being removed from the boat in the case of an emergency.

**Data Recording:** The use of data recording equipment is permitted. The data recording system must not interfere with the operation of the race craft or any other race craft. The data recording equipment must not hinder the driver while competing or when the driver is being removed from the boat in the case of an emergency.