



# **Ski Racing Australia Safety Committee**

# **Ski Racing Safety Recommendations**

**Vers: Final AUG 2018.  
Owner: SRA SC.**

## SUMMARY

The purpose of this proposal is to develop a list of recommendations for safety items related to ski racing based on four main topics including recommendations for each individual crew member and boat equipment to ensure all competitors are informed and regularly advised of safety measures that can be implemented to make for safer racing. It is proposed – the “SAFETY RECOMMENDATIONS” be placed alongside the SRA Rule Book on the SRA website.

# **Safety Recommendations**

## INTRODUCTION

Although it is impossible to prevent injury all the time due to the unpredictable nature of ski racing, it is possible to undertake precautionary steps in order to decrease the likelihood of incidents occurring and continually improve the safety in the sport as it grows and adapts. All competitors must be aware – **WATER SKI RACING IS A DANGEROUS SPORT**; Serious Injury or even death may occur if safety is not taken seriously

Below is a list of recommendations intended for general guidance only with the idea of this list growing as new issues arise, solutions are sought and documented for the benefit of all competitors.

## **Boat Owner**

Generally, the boat owner is the Driver, but this is not always the case, as the owner may be the Skier, Observer or a spectator.

Boat Owner needs to ensure that all work conducted on the boat must be undertaken by a competent person that has experience in the sport.

## **Driver**

### SRA DRIVER SAFETY TIPS

1. You must attend briefing and ensure you are fully aware of all course related issues before entering the water. Don't be afraid to ask questions or stay back after to reaffirm any doubts.
2. Have a pre-race check list. Checking for propeller cracks, steering, trim, engine bolts for tightness etc., all safety gear is in place & your crew knows their locations.
3. Make sure your familiar with the boat. If driving an unfamiliar boat familiarize yourself with its instruments, tabs, trim, and handling characteristics BEFORE RACING!!!
4. Be well prepared and have your boat in the water early to be able to do multiple warm up laps to familiarize yourself with a circuit course and conditions, take note of any social craft or potential hazards that maybe out there once the race starts.
5. River course where possible, should be fully sighted in days prior to best understand all markings, obstacles & challenges ahead.
6. Communicate with your crew before the start to work out a race plan or strategy for the race.
7. If towing an un-familiar skier, asses their ability and who they would normally be matched against or race with, to use as a gauge for once you're up and going. It is most important that the Observer gain prior understanding of how the skier/s are going to communicate with them during the race.

8. When racing, always be on the lookout for hazards, rougher conditions, debris in the water, pleasure craft on or off course, fallen skiers, stopped boats, and always acknowledge any yellow flags when going past course boats and fallen skiers. Talk to your Observer, constantly requesting info about where other boats are around you or how your skier looks, whether they are tired or look strong, etc., anything that could allow you to make a better-informed decision at a split second if required.
9. A good Driver will read the water conditions well for the skier. When possible, placing the boat in a position to least impede their Skier from other competitors boat wake and slowing down or speeding up based on what the Driver sees ahead or feels under the boat. Keep a look out for potential rouge waves that may come from boats that maybe elsewhere on or off course. **DON'T WAIT FOR YOUR OBSERVER TO TELL YOU TO SLOW DOWN BY THEN IT'S OFTEN TOO LATE!!!**
10. Drivers need to take full responsibility of the control of the boat so as to never place a competing skier/s in danger, understand your boats side wash behavior.
11. After the race, be proactive and debrief with your team or ask how they felt and how you could of potentially driven better or made the skiers job easier or safer in anyway, working as a team and swallowing your pride will build trust, which will result in better performances by all.
12. If any issues arise on course while racing, do not return to the bank and confront other competitors in a hostile manor. Report to the judges with your concern in a calm and respectful manor.

As the Driver in your team, you have the safety and well being of your whole crew in your hands and you should take this into consideration before making any decision that could affect safety whilst on course.

### **Observer**

*New to a boat - Be aware of safety flag locations, flag holders, isolation switch – before the race commences – Practice removing the flags*

*Discuss signals with Skiers i.e. wave down, handle shaker, head nodder. What does the Skier need from the Observer?*

- Use of pole with hook to collect/retrieve ski rope from water/ski pole to pull into boats with exposed motors  
Eliminating the risk of the observer falling onto a hot motor whilst getting down the side of the engine to collect ski ropes.

You must take full control of the speed. The driver is required to travel as requested or as needed by the Skier/s, to maintain control. Communications to the Driver foremost needs to be done by signals, you can follow up instructions by intercoms.

Intercoms are not to be relied upon as first point of communication to the Driver. Let your Driver know of any boats or skiers advancing from behind along with approx the distance & possibly which side of your boat they may wish to pass on – you are totally reasonable by guiding/instructing the driver for allowing safe racing & or passage for passing boats & skiers.

## **Boat Equipment**

- **Throttles -**  
Throttle control – It is imperative that your boat allows you to have good throttle control. Short Throttle travel & over or under spring tension greatly restricts foot movement to control speed.  
Throttle travel of 65mm & shorter is considered poor – with available equipment; 80mm throttle & above is quite achievable.
- **Toggle switches -**  
If toggle switches and types are to be used on ignition, kill switch, trim or tabs, use of low grade toggle switches are not recommended, as these types have been known to fail under racing conditions. Example: Temporary failing of the ignition will cause the motor to cut out inducing slack rope which can also affect the handling of the boat due to lack of power. Recommended is a minimum specification of the following - environmentally sealed, momentary toggle action, high impact strength thermoplastic case or equivalent standards. See attachment of recommended product from Ionnic. (<http://www.ionnic.com/electrical/switches/toggle.html>)
- **Flag holder -**  
If your flag holder can in any way cause harm onto a person on impact i.e. movement out of the seat causing the person to fall onto or towards the flag holder, consider placement in a position easily accessible by the Observer but fitted well away from the path an Observer who could likely travel in the boat in the event of an incident. Somewhere rearwards of the Driver's seat should be considered as it is less likely to cause injury or interfere with the Observer's sight while the flag is being displayed.
- **Seating -**  
It is all too common in our sport to see boat crews injured due to rough conditions and spinouts etc. It is recommended the choice of seat design needs to protect the Driver and Observer as best possible and limit the possibility of injury. Note, seats also need to protect against vicious extended movement of the helmet and neck in the rearward and sideward directions. Recommended is an approved racing seat, which provides a tight fit and extreme hold with high sides including side and rear & side head restraints.
- **Hydraulic Steering Helms – Need full consideration!**  
It is recommended that manual or hydraulic steering helms not be used if the manufacturer has fitted an alloy shaft that connects to the steering wheel directly or indirectly.  
Non-marine specific hydraulic helms should not be used. The benefits of hydraulic steering include: the ability to control higher horsepower motors more safely, smoother operation, minimised arm fatigue with less steering effort at the helm. See attachment from Latham Marine. (<http://www.lathammarine.com/st1b.htm>).
- **Engine Sensors & Electrics -**  
All engine sensors and electrics where possible are recommended to be remotely fitted to eliminate premature failure caused by engine harmonics and vibrations.
- **Non-waterproof / shockproof items -**  
These items are not recommended in or on a race boat and include things like non-water-proof switches and any other electrical components.
- **Steering wheel size** – The facts are known that larger diameter wheels reduce the effort in controlling movements & fatigue- Small steering wheels are NOT recommended

- **On board fire systems -**  
Recommended for all inboard boats along with the compulsory addition of a hand-held extinguisher.
- **Dry Exhaust Manifold Pipes -**  
Require consideration of effective holeshoot housings etc. The main residual of dry exhaust is heat, which can burn or weaken the ski rope. For this and other reasons water cooled exhaust manifolds are preferred.
- **Outboard Steering -**  
Cable and pulley setups to work with the best possible / most correct geometry extents. Setting up outside of this will cause cables to loosen and tighten during operation.
- **Outboard / Jacking Plate / Transom -**  
Use suitable grade, fine thread only. Course thread will loosen at a greater rate. Recommended minimum is two x high-grade fine thread bolts either side at the top of the engine to jacking plate and jacking plate to transom.

## NOTES

Purchasing from a marine outlet does not guarantee item is fit for racing or long- term use.

Not all manufacturers make suitable items to endure ski racing conditions.  
All competitors should select appropriate equipment with this in mind.

## On-board Boat Safety Equipment Location Identification Stickers

1. Safety Flag
2. Medical Flag
3. First Aid kit
4. V Sheet
5. Distress Flares
6. Tow Rope
7. Battery Isolator
8. Fire Extinguisher
9. Paddles
10. Ignition Switch
11. Bilge Switch
12. Bailing Bucket
13. On Board Fire control- if applicable

## CONCLUSION

Identifying and implementing the appropriate equipment and safety measures is of utmost importance to allow our sport to grow. Issues relating to the safety of competitors should be routinely talked about. Suggestions by competitors is encouraged and information be readily available to everyone. Please forward your recommendations to the Safety Committee (via SRA head office) for consideration.

## **SKIERS**

It is the duty of the skier or parent to check and inspect all skier equipment prior to racing each time.

### ***DO NOT TRIAL or USE ANY NEW OR DIFFERENT SKI OR GEAR FOR THE FIRST TIME UNDER RACE CONDITIONS***

A Ski should be checked for;

- Cracks in timber or laminates
- Ski Fin for straightness or defects
- Bindings checked for loose screws or tears in rubber.

A Helmet to be used for Water Ski Racing must have the following requirements: -

- To have a finish of Fluorescent Orange
- Appropriately fit the user, the helmet should fit tightly without any gaps between the Shell and the users head
- A firmly secured Strap and adjusted to be firm under the chin when fastened by a snap buckle
- Any fittings mounted to the helmet for neck restraints etc, shall have fasteners appropriate for the application, not protrude into the inside of the helmet. Fasteners on the outside must have no sharp edges and no threads protruding past the end of the nut (Dome Nuts are preferred)
- Helmet must have SKIER'S name clearly marked on the helmet.

## **NOTES**

A properly fitted helmet is vital for the performance of the helmet whilst skiing. Prior to competing and especially after a fall, the helmet should be checked before use for cracks or fatigue and replaced if damaged. Faded or damaged helmets will be rejected for use at SRA Sanctioned events if deemed not to be up to a good standard.

**ROPES** are a major concern when it comes to safety. A rope should be replaced if it;

- Shows any signs of wear
- Has any frays
- Has signs of heat damage or melted in any way
- Has any knots that are unable to be undone
- The age of the rope must also be taken into consideration before use

When splicing ends on ropes, if the end of the rope is burnt to ease splicing, always cut off burnt end once done, as the hard, rough end can wear the rope from the inside causing it to break

Use a rope that is suitable size for the user, too light and the rope will excessively stretch and break, too heavy and the rope is more prone to dip and catch water.

**SKI HANDLES.** Regular ski rope is not recommended to be used as part of the handles or harness and if used, replaced regularly. Much stronger rope exists that also resists abrasion better than normal ski rope. Take extra notice of wear and tear around the area of the front bar.

**WETSUITS** are to fit the individual wearer correctly and have no tears or holes.

- Ensure appropriate amount of flotation to float the wearer appropriately
- Be of fluorescent color above the waist line.

Your race wet suit – needs to be tested to see if it will float you whilst your lungs are exhausted of air & possibly full of water – seek information from your supplier as to how to best do a live float test. Understand you are placing yourself in a highly dangerous probability of drowning or getting run over if your flotation is inadequate. It is likely your helmet & YOU will end up in different locations, you need to be seen.

### **OTHER CONSIDERATIONS**

- Consider wearing a bright color glove or arm sleeve to enhance the ability for the Observer to see hand signals.

### **PRE - RACE WARM UP**

- Complete a warm up routine before skiing. E.g. light jog, burpees, lunges, push-ups, followed by stretching for all range of movements legs, neck, arms back etc.

Body Flexibility – the more flexible your body is the greater your possibilities are of lessening your injuries in a fall

### **Team Communication**

- Pre-race communication with Driver & Observer regarding likes, dislikes, personal strengths & weaknesses in certain water conditions.
- Discuss hand signals and who you would normally race against in your class, which is even more important when you're with a new crew, talk about race strategy so the whole team is on the same page when the flag drops.

### **WHILST SKIING**

Know your limits, ski within your capabilities and speed, try to run your race at a speed you can start and finish at, rather than starting off fast and finishing slow and fatigued which will give you a slower time and is more dangerous.

### **POST RACE**

Discuss any issues with your crew whilst it's fresh in your mind and then warm down.

SKI RACING is a team sport. The Team extends from Boat owner, Driver, Observer and Skier, to support crew such as: - trailer driver and family members.

Race as a Team and Succeed as a Team!

### **The Team**

Ski racing is a team sport. The team extends from Boat Owner, Driver, Observer, Skiers to support crew such as trailer driver, mechanics, engine builder, fabricators, family members & friends.

Don't just build a boat to ski race, building a team is the key to a team's success.

## **SRA Safety Committee – 2018/19 season**