



UNSW
SYDNEY



BEES Safety Management System for punts < 4 m



1. Vessel and Contact details

1.1. Contacts

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Boating Safety Officer (BSO) – Rochelle Johnston (Designated Person)

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1.2. BEES punts

The BEES punts are Non-Survey Class 2 vessels less than 4 m in length and do not carry passengers or dangerous goods. The punts are mainly used as educational tools for marine field trips at the Smiths Lake field station. They may also be used for research. All punts (except PEEP) can operate in D and E areas and be powered by 5 hp outboards. PEEP can only be operated in area E as a human powered vessel. All punts are limited to NSW waters when operating as powered vessels except PLATY, which may operate as a powered vessel in all waters. When operating as unpowered vessels, the punts can be operated in all Australian waters. See Table 1 for details of each punt and its operation.



Table 1. BEES Punts and human powered vessels

Name	Make	Length (m)	Engine HP	Hull	Rego / UVI	Max POB	Class / Operational area
Dart	Quintrix	3.75	5	Aluminium	53369 411820	4	2D/E NSW waters
Sammut	Horizon	3.66	5	Aluminium	58502 412037	4	2D/E NSW waters
Suthers	TUF	3.71	5	Aluminium	AIV414C 453591	4	2D/E NSW waters
Dave	Quintrix	3.66	5	Aluminium	AIV413C 444012	4	2D/E NSW waters
Cracks	Clark	3.3	5	Aluminium	AIV419C 449315	3	2D/E NSW waters
Platy	Clark	3	5	Aluminium	AJB220C 449876	3	2D/E AU waters
Peep	Andrew Short Marine	3.4	Unpowered only	Aluminium	None	3	2E AU waters

2. Safety and Environment Policy

2.1. Relevant legislation & standards

As well as BEES policies, all National and State legislation, standards, licensing, and permitting relevant to the work must be met.

Current list of Legislation and Standards for domestic commercial vessels:

- [Marine Safety \(Domestic Commercial Vessel\) National Law Act 2012](#).
- [Marine Safety \(Domestic Commercial Vessel\) National Law Regulation 2013](#).
- [The National Standard for Commercial Vessels \(NSCV\)](#).
- [Marine Orders](#).
- [NSCV EX15 - Marine Safety \(Scientific research and educational activities\) Exemption 2015](#).
- The punts are exempt from the Marine Order 504 requirement for crew to hold First Aid certification when used for educational purposes at Smiths Lake, where first aid certified crew are available with a support vessel (Appendix A).
- The punts are exempt from the requirement for certain safety equipment in the NSCV part G when used for educational purposes at Smiths Lake with a support vessel (Appendix B).

2.2. WHS policy UNSW

The School of BEES is committed to ensuring a safe and healthy environment for all people who work, study, or visit BEES administered space and /or are affected by BEES off-Campus activities. To achieve this goal, the School of BEES adheres to the policies, procedures and guidelines that comprise [The University of NSW Health and Safety Management System \(HSMS\)](#).

2.3. Risk management

BEES will:

1. Follow all relevant maritime legislation.

- Promote and provide safe practices and a safe working environment.
- Ensure that foreseeable hazards are identified, assessed, and controlled through the [Punt Risk Management Form](#).
- Ensure that all operators have suitable training and experience to use the vessel for the proposed activities.
- Ensure the vessels are safe and suitable for the proposed activities, through regular maintenance inspections.
- Consult with boat users about punt use procedures to identify areas for improvement and monitor the performance of the SMS.
- Minimise the impact of our vessels on the environment.

2.3.1. Risk management review

The risk management documents will be reviewed:

- If the operation of the vessel changes.
- If the vessel is involved in an incident.
- If controls are not working effectively.
- If a new hazard is identified.
- If there is a change in legislation.
- If consultation indicates a review is necessary.
- Every three years.

2.4. Incident reporting

2.4.1. BEES reporting process

The University of New South Wales has a [hazard and incident reporting procedure](#). The Master shall report any incident or hazard, including those not resulting in damage or injury, to their supervisor and the BSO, and the incident must be logged through the [myUNSW](#) online hazard and incident reporting system. Any incident resulting in damage to persons, property or the environment must be reported **immediately**, as further and immediate action may be required. More Information about the reporting process and the response process by supervisors is available in the [Guide to reporting hazards and incidents](#). The UNSW WHS Division will subsequently report any notifiable incidents to SafeWork NSW.

2.4.2. AMSA reportable incidents

The following incidents must also be reported to AMSA:

- Death of, or injury to, a person associated with the operation or navigation of a vessel.
- The loss or presumed loss of a vessel.
- Collision of a vessel with another vessel.
- Collision by a vessel with an object.
- The grounding, sinking, flooding, or capsizing of a vessel.
- Fire on board a vessel.
- Loss of stability of a vessel that affects the safety of the vessel.
- The structural failure of a vessel.
- A close quarters situation.
- A dangerous occurrence, which is an occurrence that could have caused the death of, or serious personal injury to, any person on the vessel.

AMSA requires an **incident alert** to be submitted within 4 hours and an **incident report** to be submitted within 72 hours of the incident. The process for reporting these maritime incidents and the AMSA forms can be found on the [AMSA website](#). Reports must be coordinated with the BSO and BEES HSE Advisor.

2.4.3. Response to reported hazards or incidents

Following the reporting of a hazard or incident, the BSO in conjunction with the BSC will initiate a review of the SMS and any relevant documentation for the activities associated with the hazard or incident. Once developed the BSO will communicate these changes to all boat operators.

2.5. Record keeping

Record keeping is in line with the [UNSW Record Keeping Policy](#). The below apply specifically to boating documentation:

1. The Assessment Records (BOAT12 and BOAT13) are returned to the BSO at the end of each period of use, to be scanned and kept on the UNSW server.
2. The Punt Inspection and Logs (BOAT14 and BOAT15) are returned to the BSO at the end of each period of use, to be scanned and kept on the UNSW server.
3. The annual BSO maintenance checks and professional service records are scanned and kept on the UNSW server.
4. Risk management forms and relevant documents are kept for as long as they are in use and then 7 years after last use.

2.6. Drugs, alcohol and smoking

Boat users must not operate a BEES vessel, vehicle or machinery if they are impaired by alcohol or drugs. Smoking is prohibited on university grounds as well as on-board or near all UNSW boats and vehicles. For further information see the [UNSW Alcohol and Drugs Procedure](#) and [UNSW Smoke-Free Policy](#). To assist the provision of a safe working environment on BEES vessels, the following behaviours must be observed by all people on-board the vessel:

1. No alcohol or illicit drug is to be consumed on-board the vessel.
2. A person under the influence of alcohol or illicit drugs is not to board the vessel.
3. A person who is taking medication that may impair their ability to safely participate on-board the vessel should seek medical advice before engaging in boating operations. If necessary, the person should exclude themselves from boating operations.

The Vessel Supervisor or Master is responsible for ensuring all persons on-board comply.

2.7. Environmental protection

BEES aims to minimise impact and harm to the environment during vessel operations. All vessel masters and crew shall adhere to the following protocols:

1. No rubbish or waste is to be discharged from a vessel. Collect all rubbish and waste on board and dispose of it responsibly onshore. See 4.8.
2. Care must be taken with fuel and oil to ensure there is no discharge into the marine environment. If a spill occurs, it must be reported to the local authorities responsible for responding to marine pollution incidents. In NSW, this is Roads and Maritime Services (RMS). See section 4.8.3.
3. Any waste chemicals used must be collected and returned to BEES for appropriate disposal.
4. Be aware of sensitive seagrass areas and avoid damaging them during boating operations.
5. Minimise wash in locations where it has potential to damage the shoreline, vessels or other structures. Follow all "No Wash" and speed limit signs to limit the damage caused by wash.
6. Be aware of any restrictions relating to operating a vessel in protected areas or around protected or invasive species.
7. Keep noise to a level that is acceptable to a reasonable person.

2.8. Vessel Inspection and Maintenance

The vessel is inspected as per the Scheduled Maintenance Program (Appendix C).

2.8.1. Pre-trip inspections

For educational programmes at Smiths Lake Field Station:

The Vessel Supervisor is responsible for checking that the vessel is fully operational and that all safety equipment is present and functional prior to students using the vessels, using the BOAT14 Punt Inspection and Log for Education Use form.

For research activities:

The Master is responsible for checking that the vessel is fully operational and that all safety equipment is present and functional before commencing the voyage, using the BOAT15 Punt Inspection and Log for Research Use form.

If the vessel is not fully operational or safety equipment is not present or functional, the vessel cannot be used. The BSO shall be informed of any deficiencies. The inspection and log forms shall be returned to the BSO.

2.8.2. Annual inspections

The BSO or their delegate is responsible for the annual inspection and maintenance of the vessels using the **BOAT16 BSO Annual Punt Maintenance Checks** and **BOAT24 Punt Life Jacket Inspection** forms. The BSO will coordinate any repairs and replacements for any deficiencies identified during BEES vessel checks. The BSO shall keep a record of all BEES and external maintenance records and repairs on the UNSW server.

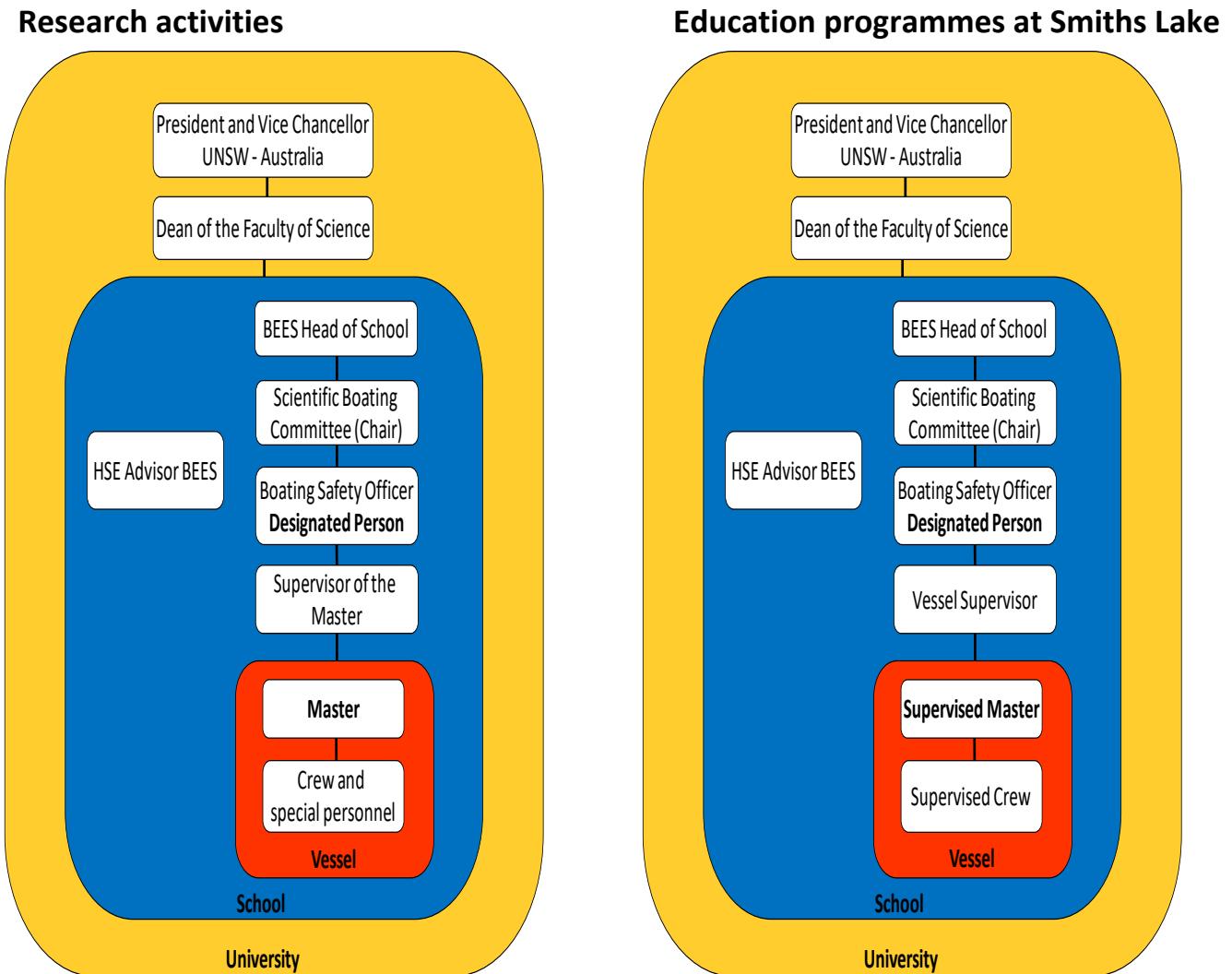
2.8.3. Other external inspections

- An inspection and service of any fire extinguishers will be conducted by a professional every 6 months.
- An inspection and service of any inflatable life jackets will be conducted by a professional every 12 months.
- A professional inspection and service of the engine, boat and trailer will be conducted every 12 months.
- An eSafety check will be carried out on any trailers every 12 months.



3. Roles and Responsibilities

3.1. Company responsibilities flow chart



3.2. Owner: School of BEES

The School of BEES shall:

1. Appoint a Boating Safety Officer to oversee boating operations.
2. Appoint and consider recommendations made by the Boating Safety Committee.
3. Implement a management process to ensure that all boating activities are compliant with the relevant legislation and standards.

3.3. Boating Safety Committee (BSC)

The BSC provides specialist advice on the School of BEES boating policy and procedures and provides safety management for boat users. The committee shall include the BEES HSE Advisor, the Boating Safety Officer/s and current researchers and students involved in boating activities.

The BSC shall:

1. Review relevant legislation and standards.
2. Develop and review the BEES SMS and associated safety documentation.
3. Assist the BSO to manage or resolve identified hazards and assess the control of risks in boating activities.
4. Provide specialist assistance in the investigation of all boating incidents/accidents.
5. Provide consultation on training requirements for boat users.
6. Report to the BEES Head of School.

3.4. Boating Safety Officer (BSO)

The Boating Safety Officer is the Designated Person for the School of BEES. The BSO has the authority to restrict, prohibit or suspend any boating operations which they consider unsafe. Furthermore, they can insist on the implementation of additional safety practices, procedures, or equipment they consider necessary to ensure the safety of the participants. The BSO reports the BSC.

The Boating Safety Officer is responsible for:

1. Implementing and reviewing the vessel SMS and Risk Management documents.
2. Facilitating the maintenance and repairs of BEES vessels in accordance with the Schedule of Maintenance and whenever required (see section 2.8.2).
3. Provide advice on the safety and risk management of boating activities.
4. Maintaining the vessels records in accordance with section 2.5.
5. Liaising with AMSA for boating matters.

3.5. Vessel Supervisor

When operating educational programmes at Smiths Lake field station, the Vessel Supervisor will supervise all students operating the punts. They are responsible for the safe operation of the vessels and those on board.

The Vessel Supervisor's responsibilities include but are not limited to:

1. Maintaining currency on the BEES register of boat users according to the [BEES SMS for vessels < 7.5 m.](#)
2. Maintaining a current State boat licence, First Aid and CPR certification.
3. Complying with this SMS and the [Punt Risk Management Form](#).
4. Ensuring a risk assessment and emergency plan is carried out for the planned activities.
5. Training, assessment and documentation of Supervised Master and Crew.
6. Conducting a safety briefing with the Supervised Master and Crew that includes operational and emergency procedures.
7. Ensuring that all safety equipment is present and functional prior to use by the students using the **Punt Inspection and Log for Education Use**.
8. Ensuring the punts are only operated according to the operational area limits, maximum people on board and maximum load.
9. Restricting or suspending operations based on the weather, the condition of the vessel, the abilities of those on board and the tasks to be performed.
10. Ensuring the support vessel is on the water (in operation on the lake or at anchor at the field station), whenever the punts are being operated.
11. Remaining on site at either the field station or on the support vessel, at all times the Supervised Master and Crew are operating the punts. Ensuring they are ready to assist in an emergency as soon as it arises.
12. Coordinating emergency responses and following appropriate emergency procedures.
13. Cleaning the vessels at the end of the trip and reporting any maintenance issues to the BSO.
14. Completing the **Punt Inspection and Log for Education Use** for each vessel and returning to the BSO at the end of the field trip.
15. Reporting any hazards, incidents and near misses relating to the boating activities.

3.6. Supervised Master and Crew (for educational use)

Students participating in an educational programme at Smiths Lake Field Station, may operate the punts as Supervised Master and Crew. The Supervised Master and Crew report to the Vessel Supervisor who is responsible for approving and overseeing all boating operations. The Supervised Master may operate the punts on Smiths Lake as long as the Vessel Supervisor overseeing the operations, is available to assist the students by remaining on the support vessel on the lake or at the Research Station with the support vessel ready for deployment. The Supervised Master shall only operate the punts at night or in restricted visibility under the ***direct supervision*** of a Vessel Supervisor.

The responsibilities of the Supervised Master and Crew include but are not limited to:

1. Complying with this SMS and the [Punt Risk Management Form](#).
2. Following appropriate operational and emergency procedures.
3. Listening to safety briefings and following instructions from the Vessel Supervisor.
4. Ensuring that all safety equipment is present and functional before setting off.
5. Filling in the intentions board for each trip with name, two mobile contact numbers, destination/s, and estimated time of return.
6. Always wearing a life jacket while on board a BEES vessel.
7. Only undertaking tasks that they are trained to undertake.
8. Maintaining a lookout while onboard the vessel.

3.7. Master

The punts may be operated by a Master for research purposes. They may operate the vessels without supervision from a Vessel Supervisor. The Master is responsible for the safe operation of the vessels and those on board.

The responsibilities of the Master include but are not limited to:

1. Maintaining a current State boat licence.
2. Maintaining a current First Aid and CPR certification. The master will be allowed to operate the vessel for a 3-month grace period from certification expiry, provided that another crew member has a current certification.
3. Complying with this SMS and the [Punt Risk Management Form](#).
4. Ensuring a risk assessment and emergency plan is carried out for the planned activities.
5. Conducting a safety briefing with the crew that includes operational and emergency procedures.
6. Ensuring that all safety equipment is present and functional before setting off using the **Punt Inspection and Log for Research Use**.
7. Ensuring the punts are only operated according to the operational area limits, maximum people on board and maximum load.
8. Restricting or suspending operations based on the weather, the condition of the vessel, the abilities of those on board and the tasks to be performed.
9. Ensuring all persons on board are wearing a life jacket.
10. Maintaining a look out while onboard the vessel.
11. Coordinating emergency responses and following appropriate emergency procedures.
12. Cleaning the vessels at the end of the trip and reporting any maintenance issues to the BSO.
13. Completing the **Punt Inspection and Log for Research Use** for each vessel and returning to the BSO at the end of the field trip.
14. Reporting any hazards, incidents and near misses relating to the boating activities.

3.8. Registering as a punt user

A person who has not successfully completed the induction program will not be authorised to use a BEES punt.

3.8.1. Registering as a Master

Master minimum qualifications

1. A current State Boat Licence.

2. Current First Aid and CPR Certificates. An exception will be granted if the certificate has lapsed in the last 3 months, as long as another crew member has a current certificate.

Master Induction Process

1. The master must be familiar with this SMS.
2. The master must be familiar with the [Punt Risk Management Form](#).
3. The master shall complete Assessment Record - Safely operate a Punt BOAT13.
4. The master shall demonstrate the following competencies:
 - a. Pre-trip checks.
 - b. Basic outboard engine operation.
 - c. Vessel handling and manoeuvring.
 - d. Navigation and give way rules.
 - e. Actions to take to maintain safety on board.
 - f. Actions to take in an emergency.
 - g. Use of safety equipment.

3.8.2. Registering as a Supervised Master (for educational use)

Supervised Master minimum qualifications

1. A current State Boat Licence is preferable; however, it is not required as boats are operated under 10 knots.

Note: The Supervised Master will be overseen by a Vessel Master Supervisor who will be present at the field station or on the support vessel, at any time the Supervised Master is operating a punt.

Supervised Master Induction Process

1. The master must be familiar with this SMS.
2. The master must be familiar with the [Punt Risk Management Form](#).
3. The master shall complete the Assessment Record - Supervised Masters of Punts BOAT12.
4. The master shall demonstrate the following competencies:
 - a. Pre-trip checks.
 - b. Basic outboard engine operation.
 - c. Vessel handling and manoeuvring.
 - d. Navigation and give way rules.
 - e. Actions to take to maintain safety on board.
 - f. Actions to take in an emergency.
 - g. Use of safety equipment.

4. Operational Procedures

A quick reference Operational and Emergency Procedures document must be kept onboard each punt.

4.1. Crewing requirements

1. It is a requirement that at least one person on board the vessel (the master or crew) holds a current First Aid certification. An exception is made for educational programmes at Smiths Lake, where staff must be available on the support vessel or at the research station with current First Aid certification.
2. It is a requirement to have at least two people on board the vessel while underway. However, the vessel may be operated by a single person in low-risk situations, with prior approval by the BSO. In this scenario, the master must attach the kill cord to themselves.
3. Non-swimmers are prohibited from using punts in operational area D. During supervised educational activities at Smiths lake (operational area E), only one non-swimmer may make up the crew component at any one time.

4.2. Pre-trip preparation and planning

4.2.1. General

The Master or Vessel Supervisor shall follow the BEES fieldwork planning procedures found at <https://www.bees.unsw.edu.au/fieldwork>. This includes ensuring relevant Risk Management Forms, Safe Work Procedures, Activities, Emergency Plans and Fieldwork Notifications are approved.

4.2.2. Weather

The Master or Vessel Supervisor must check the weather forecast and monitor conditions to ensure suitability for the activities with careful consideration to the limited skills and experience of all on board. Sources of weather forecasts include The Bureau of Meteorology www.bom.gov.au and Sea Breeze www.seabreeze.com.au.

4.2.3. Plying limits

The BEES punts are limited to Smiths Lake for any educational activities. The punts may be operated in smooth waters (operational area E) or partially smooth waters (operational area D) for research purposes with prior approval from the BSO.

4.2.4. Maximum people and load on board

Operations must be planned according to the maximum people and load on board for the vessel. These *maximums* should be reduced as appropriate depending on the expected conditions, work to be carried out and the equipment to be carried.

4.2.5. Charts

Paper copies of navigational charts for the operational area MUST be carried onboard the vessel when in use.

4.3. Trailering the punts

1. P1 drivers are not allowed to tow trailers.
 2. Manoeuvre the trailer to locate the trailer coupling over the vehicle tow ball.
 3. Lower the jockey wheel while holding the ‘trigger handle’ on the coupling fully up and allow the coupling to fully engage the tow ball. Release the trigger handle and replace the securing pin.
 4. Double check that the coupling is locked into position on the tow ball.
 5. Put the jockey wheel in the towing position.
 6. Attach the safety chain to the vehicle.
 7. Connect trailer lights to the vehicle and confirm that all lights function normally.
 8. Check trailer tyres for correct inflation pressures (45 psi) and ensure there is no visible damage.
 9. Check that the boat lies flat and secured on the trailer and cannot move.
 10. The DRIVER of the vehicle should do a last ‘walk around’ to double check all is secure.
 11. Ensure the trailer is not overloaded. The punt trailer max weight (GTM) is 450kg.
 12. The engine and any other equipment should be loaded into the back of the vehicle and not loaded in the boat while towing.
 13. Allow for the extra length and width of the trailer when turning or entering traffic.
- 14. The maximum speed when towing the BEES punt trailer is 100 km/h.**
15. Your braking distance will be increased, so adjust your speed and distance behind other vehicles accordingly.
 16. Allow more time and a greater distance in which to overtake.
 17. Use a spotter when reversing the trailer.
 18. During the trip, check the following:
 - a. Check that the couplings and chains are still securely fastened.
 - b. Check that light connections are secure and that the lights are working.
 - c. Check that the load is still secure.
 - d. Check that the wheel bearings are not overheating.
 - e. Check that the tyres are still sufficiently inflated.

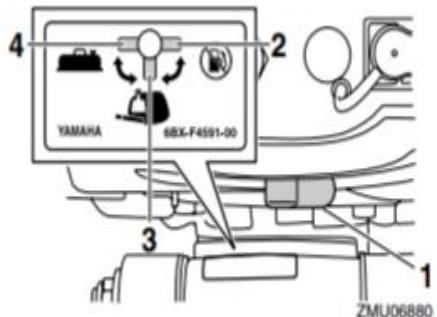
4.4. Preparing the boat

1. The Master or Vessel Supervisor must complete the Punt Inspection and Log (BOAT14 or BOAT15) and ensure the vessel and all safety equipment is fully operational.
2. Calculate fuel requirement. It is recommended to use the “1/3 rule”: 1/3 out, 1/3 back, 1/3 spare.
3. Ensure enough people are available to carry punt and outboard to avoid manual handling issues.
4. Ensure outboard is securely mounted to transom.

4.5. Engine operations

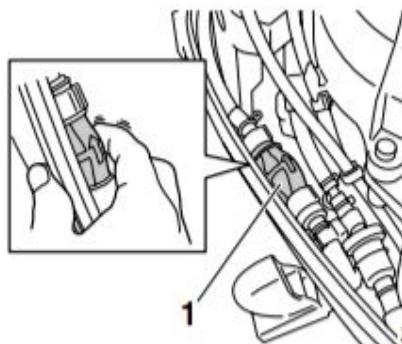
4.5.1. General

1. The outboard engines can be operated using the internal fuel tank or with an external fuel tank connected to the outboard with a fuel line. Ensure the fuel cock aligns to the fuel source. See diagram 1.
2. Loosen air vent screw on internal or external fuel tank.
3. Prime the fuel by squeezing primer bulb until firm. The primer bulb is inside cowling if using internal fuel tank or on fuel line if using external fuel tank. See diagram 2 and 3.



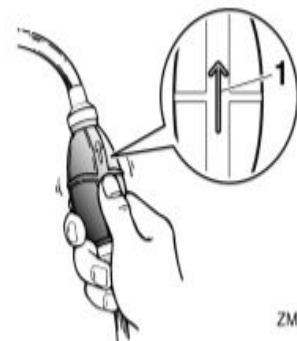
1. Fuel cock
2. Closed position

Diagram 1: Fuel cock



1. Primer pump

Diagram 2: Internal fuel tank primer



1. Arrow

ZMU06848

Diagram 3: Fuel line primer

4.5.2. Start up

1. Lower motor and ensure water intakes submerged.
2. Attach engine kill cord to motor and to operator.
3. Check gear shift lever is in neutral position.
4. Place the throttle grip in the START position.
5. If engine is cold, pull choke out while you start the engine. Push the choke back in once engine is started. The choke should only be needed to start a cold engine.
6. Pull manual starter slowly until you feel resistance, then give a strong, straight pull.
7. Slowly return the throttle to the fully closed position.
8. Check for telltale.
9. Adjust engine tilt.

4.5.3. Shutdown

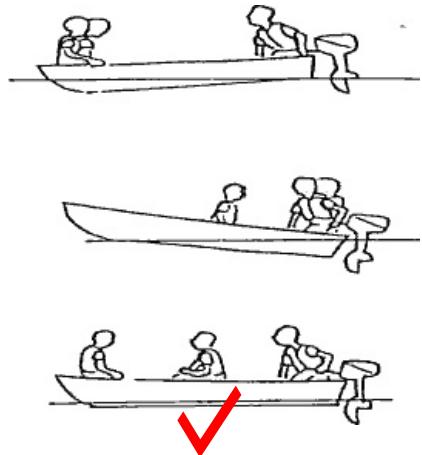
1. Engine OFF (stop button or pull kill cord).
2. Raise motor fully.
3. If using external fuel tanks, close fuel air vent screw.
4. Switch fuel source to off.
5. Wash boat and flush engine.
6. Complete Punt inspection and log form.

4.6. Load, seating and motor position

4.6.1. Load

Evenly distribute the load as this helps to stabilise the boat and maintain control. Aim to have the boat sitting as level in the water as possible. Depending on the conditions and the wave direction, you must adjust the distribution of the load.

1. Too much weight at the stern can cause the boat to have water come over the transom, or it may be flipped when the bow is lifted in the air by a wave.
2. Too much weight in the bow can lead to 'bow steering' where the hull catches the water and makes unexpected changes in direction.
3. Too much weight on one side can affect the handling.



4.6.2. Seating

1. Remain seated while underway.
2. Bow riding is against the law.
3. Take care when approaching jetties and docks that people's bodies, hands and fingers are not protruding beyond the sides of the vessel.



4.6.3. Motor position (Tilt)

The motor should be positioned so that the axis of the propeller is parallel with the water surface, however an adjustment of the tilt is often recommended. The engine must be off or in neutral before adjusting the tilt.



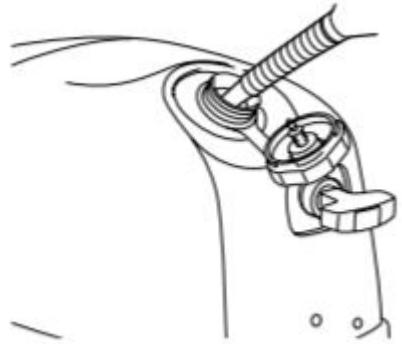
1. If the bow of the boat is too far down, stop engine and tilt it up a hole.
2. If the bow of the boat is too far up, stop engine and tilt it down a hole.



4.7. Refuelling

4.7.1. General

Fresh **Unleaded Fuel** must be used with a preference for **Premium Unleaded**. **DO NOT USE DIESEL OR ETHANOL (E10) FUELS.**



4.7.2. Refuelling internal fuel tank

1. Isolate ignition sources. No smoking, naked flames or mobile phone use.
2. Have spill kit available for potential spills.
3. If present, the fire extinguisher should be accessible.
4. Remove fuel cap and fill fuel tank from jerry can with a nozzle.
5. Do not overfill as fuel can expand if temperature increases.



4.7.3. Refuelling external fuel tank

1. Isolate ignition sources. No smoking, naked flames or mobile phone use.
2. Have spill kit available for potential spills.
3. If present, the fire extinguisher should be accessible.
4. Remove external fuel tank from boat place on the ground so it is electrically grounded.
5. Do not fill beyond max fill line.
6. Bleeder valve must be closed during transport.

4.8. Garbage, waste and spills

4.8.1. Garbage

1. All garbage must be collected and placed in an appropriate place onboard the vessel.
2. All garbage must be disposed of ashore. Where practicable, separate recyclable material and dispose of appropriately.
3. **IT IS ILLEGAL TO DUMP ANY RUBBISH INTO THE WATER.**

4.8.2. Waste

1. No chemicals or waste can be discharged into the waterways.
2. Collect waste and store in sealed containers.
3. Dispose of waste at UNSW according to UNSW procedures.

4.8.3. Spills

1. Respond to spillage immediately and isolate source.
2. Use spill kit to contain spillage and to prevent pollutant entering water or stop it spreading if already in the water.
3. Record location.
4. Report spill to the local authorities responsible for responding to marine pollution incidents. In NSW, this is Roads and Maritime Services.
5. Inform BSO.

4.9. Ropework

4.9.1. Rope Safety

1. Inspect ropes for damage or wear prior to use.
2. Ensure all ropes and fittings are suitable for the task at hand.
3. Never stand on coils, tangles or the bight of a rope – they can pull tight and throw you overboard or sever a limb.
4. Never wrap lines around your body to help pull – use the fixtures on the boat to secure lines.
5. Keep ropes tidy. Tidy lines can be accessed quickly and don't need to be untangled before they can be used. They are also less of a tripping hazard.

4.9.2. Knots

Tying proper knots is the safest way to secure ropes and lines. Improper knots can jam under loads, be impossible to untie and can weaken a rope. Remember you may need to get a knot undone quickly in an emergency!

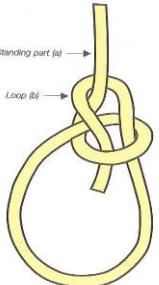
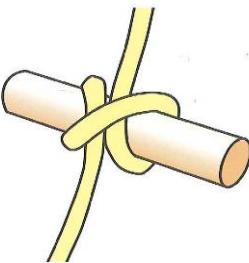
	
Bowline – the most important knot	Clove hitch
Tied properly it will not shake loose nor slip. The large loop has many uses from securing to bollards to lifting people.	Used for securing lines under load to other objects.



Figure of 8 knot

Used as a stopper to prevent a rope from sliding through a pulley.

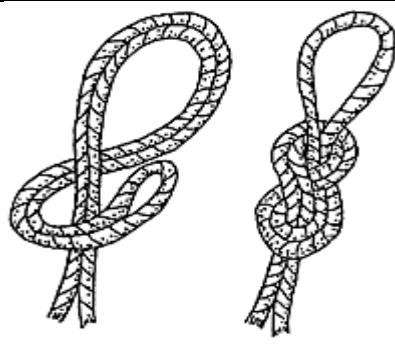


Figure of 8 loop

Useful in circumstances similar to a bowline but can tighten under load.

4.9.3. Securing lines

Securing to a cleat or bollard is important, but there is no need to overdo it. A few turns are sufficient.

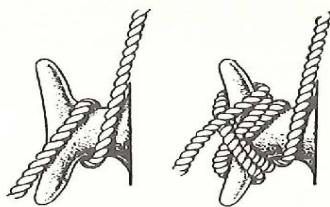


FIG. 6-18. Belaying a rope to a cleat



Take a few turns in a figure of 8 around the cleat. This is sufficient if only being used for a short time under supervision.

Cleat hitch – if the cleat is to hold a load for some time pass the final loop under itself to form a cleat hitch. This is less likely to come loose with movement.

4.10. Anchoring

The punts carry a Danforth Anchor which hold best in firm sand, gravel or mud. Danforth anchors are not recommended for rocky or grassy bottoms where they cannot penetrate, and clay bottoms where they may not hold well.

4.10.1. Deployment

1. Assess anchoring location for shelter from the wind/ no anchor zone/ submarine cable/ channel / substrate holding suitability / other anchored vessels (assess their swing and anchor appropriately).
2. Ensure water depth is adequate depending on wind strength.
3. Decide on appropriate scope for conditions. See 4.10.3.
4. Master to position vessel into wind and come to a stop at selected anchoring position.
5. Crew to deploy anchor and when anchor bottoms, master to go astern while paying out anchor rope.
6. Master stops vessel in water, crew to tie off rope at bow once rope is at agreed length.
7. Master motors slowly in reverse to set anchor until the vessel hangs on the anchor.
8. Master and crew to monitor anchor hold while at position.
9. Do not deploy anchor in sea grass beds.

4.10.2. Recovery

1. Crew to untie line ready for recovering anchor onboard.
2. Crew shall recover anchor.
3. Master may need to motor slowly ahead while crew recovers line until vessel vertically positioned over anchor.

4. If the anchor is hard to break out, re-secure the rope and slowly motor in the opposite direction to which the anchor was set.
5. Anchor ropes should be coiled immediately so they can be deployed again and do not create a hazard.

4.10.3. Recommended Scope

Scope is the ratio of the anchor rope and chain length to the depth of water. A longer scope allows the boat to pull horizontally on the anchor, while a shorter scope will pop it out of the seabed. In general, **a minimum scope is still conditions is a rope and chain three times the depth of the water** in length (e.g., 15 m of rope and chain in 5 m of water). However, if the anchoring location allows, a longer scope is generally better. Below is a table of recommended scopes. Always keep watch when at anchor to ensure the boat does not drift.

<u>Sea Conditions</u>	<u>Anchor Cable</u>	<u>Scope</u>
Favourable	Rope and chain	3:1
Average	Rope and chain	5:1
Rough	Rope and chain	8:1

4.10.4. Anchoring Transits

When at anchor line up two objects, one in the foreground and one in the distance. If these two objects stay in line the anchor is holding and the boat is stationary. If the objects move relative to each other, then the anchor is not holding, and the boat is drifting.

4.11. Being towed

1. The punts cannot be used to tow other vessels. The punts can only be towed by the support vessel.
2. Communicate clearly with the support vessel. Use your mobile if the weather prohibits voice communication.
3. Securely attach the tow line. The bow is the best contact point for the punts. If this is not available spread the load over other points.
4. Monitor chafe in the tow line.
5. Watch for wake building behind the boat that may swamp the vessel, slow down the tow.

4.12. Snorkelling operations

1. The vessel cannot be left unattended.
2. Ensure you display dive flag during snorkelling operations.
3. Live boat operations while snorkellers are in the water are not permitted.

4.13. Night work / poor visibility

1. Navigational lights are required: 360-degree white light with port and starboard sidelight while in transit.
2. PFD must be fitted with a light.
3. Slow down – operate at slower speeds than normal as hazards are harder to see.
4. Keep watch – get other people on board to assist in keeping watch. Avoid using bright lights as they will diminish your night vision.
5. Non-swimmers are not allowed on punts at night.
6. Students operating punts for educational purposes at night, must be under the direct supervision of an experienced staff member.

5. Emergency Procedures

5.1. General

In addition to this SMS, a quick reference Operational and Emergency Procedures document is kept onboard each vessel. The master and crew must be familiar with the emergency procedures prior to operating the vessel. These procedures are covered during the safety briefing (see Appendix D: Safety Briefing).

The master is responsible for coordinating the emergency procedures and allocating tasks, as necessary. In the event of the master being incapacitated, another vessel master should take control of the vessel. If there is no other master available, then another crew member is to follow the master incapacitated procedures.

Any emergencies or incidents must be reported according to section 2.4.

5.2. Emergency equipment

5.2.1. General

See Appendix E for a list of the safety equipment required onboard. Note that some equipment must be supplied by the Master.

5.2.2. Lifejackets

For educational operations at Smiths Lake:

A PFD level 100 or higher **must be worn at all times by all persons onboard**.

For research operations:

A PFD level 150 **must be worn at all times by all persons onboard**. Inflatable lifejackets require annual servicing by an authorised technician.

Emergency communications

For educational operations at Smiths Lake:

In the event of an emergency contact the Vessel Supervisor who will arrange assistance with the support vessel.

For operations in partially smooth waters:

Use your mobile phone to contact Marine Rescue or if you are working on inland waters call Triple 0. After you have dealt with the emergency you should contact the Designated Shore Person and/or the BEES Boating Officer.

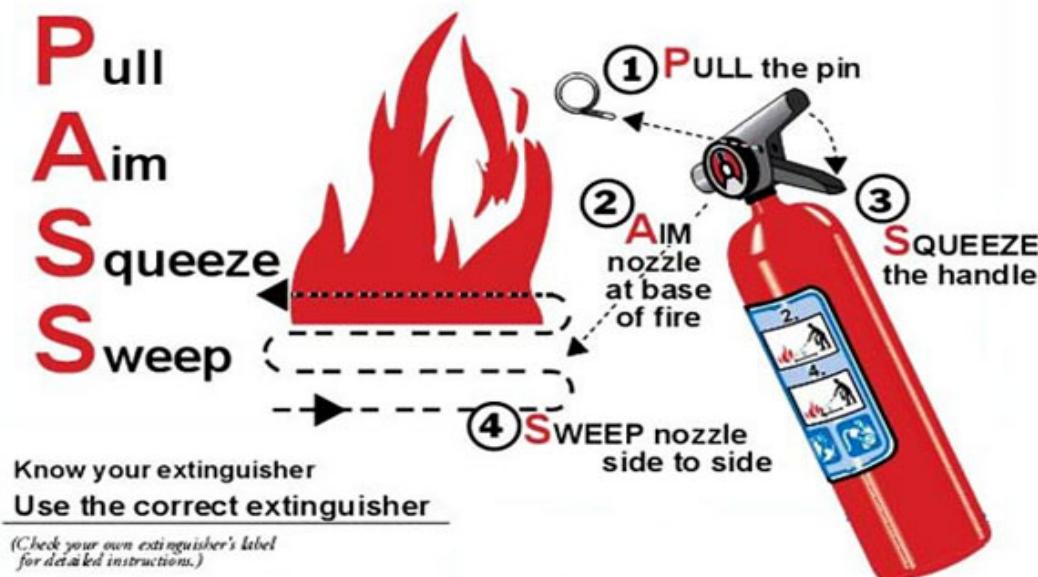
5.3. Fire or Explosion

Fire is one of the most dangerous situations on a boat. On a small vessel fire can take hold quickly. Be prepared by thinking about how a fire might start and how you would deal with it. Where are the fire extinguisher and the bucket? Do you know how to use them?

1. Assess the situation.
2. Move crew as far as possible from the fire.
3. If safe to do so, contain the fire / remove other flammable material.
4. If safe to do so, fight the fire using extinguisher / buckets.
5. Contact support vessel or emergency services if necessary.
6. Confirm vessel stability and status. Make sure that moving people and bucketing water onto the fire does not unbalance vessel.
7. Prevent environmental harm/pollution if practical.

8. Prepare anchor or sea anchor for deployment, depending on location, so that you don't drift into more trouble while trying to sort out the fire.
9. If possible, navigate to nearest, suitable and safe wharf or shoreline or drop anchor and wait for assistance.
10. If you cannot control the fire yourself ABANDON SHIP.
11. Deploy anchor as you leave to prevent boat drifting fire towards other boats/persons. Swim at least 100 metres away from the boat into the wind so that the burning boat does not drift towards you.

To operate an extinguisher:



5.4. Collision

1. Assess the situation.
2. Check on crew wellbeing. Make sure no one was thrown from the boat.
3. Confirm vessel stability and status. Investigate damage and watertight integrity.
4. Assist the other vessel as required.
5. Prevent environmental harm/pollution. Did the collision cause the engine to leak oil or rupture a fuel tank?
6. If possible, navigate to nearest, suitable and safe wharf or drop anchor and wait for assistance.
7. Contact support vessel or emergency services if necessary.
8. If necessary, ABANDON SHIP.

5.5. Grounding

1. Assess the situation.
2. Check on crew wellbeing. Make sure no one was thrown from the boat.
3. Confirm vessel stability and status. Investigate damage and watertight integrity.
4. Prevent environmental harm/pollution if practical. Did the grounding cause the engine to leak oil or rupture a fuel tank?
5. If possible, remove vessel from ground by doing one of the following:
 - a. Shift weight.
 - b. Push off using oars.
 - c. Push, if on sand in calm water.
 - d. Wait for tide to rise.
6. Contact support vessel or emergency services if necessary.

5.6. Flooding

1. Assess the situation.

2. Locate the ingress of water, stop the water coming in and monitor flooding.
3. Activate manual bilge pump and/or start bailing.
4. Prepare anchor for deployment. You don't want to drift into more trouble while you sort out the problem.
5. Navigate vessel to nearest, suitable and safe wharf or drop anchor and wait for assistance.
6. If necessary, contact support vessel or emergency services.
7. If you can't manage the flooding, ABANDON SHIP as required.

5.7. Person overboard

1. Shout "Man Overboard!" and assign crew to look and point at the person overboard.
2. Reduce speed and perform turn (engine away from person overboard).
3. Throw buoyancy aid to person in the water.
4. Approach the person slowly on the downwind side if possible.
5. On approach, shift engine into neutral and switch off engine.
6. Throw a line to the person and bring them alongside.
7. Assist person onboard using crew. You may need to put another person in the water to safely bring an unconscious person on board.
8. If unable to be recovered, secure them to the vessel and seek assistance.
9. Attend to wellbeing of person.
10. If necessary, notify support vessel or emergency services.

If person is not found:

1. Notify emergency services.
2. Conduct systematic sweeps of the area.
3. Listen for calling or whistle.



5.8. Critical Breakdown

1. Assess vessel status and determine nature of breakdown.
2. Attempt to rectify problem or request additional assistance.
3. Deploy anchor to avoid drifting into further danger.
4. If possible, assign crew to paddles and navigate to shore/safe haven.
5. If necessary, contact support vessel or emergency services and request towing assistance.

Problem	Potential solution
Engine will not start.	Check kill switch in place. Check gear is in neutral position. Engine may be flooded if you have used choke. Wait 5 minutes and try again. Check fuel supply. Prime bulb of external/internal tank. Check position of fuel switch. Open air vent screw on external tank. Listen for air leaks.
Engine not functional – vessel on smooth waters not far from shore.	Use paddles to manoeuvre the vessel to a safe haven or landing place. Seek assistance.
Overheating engine.	Blocked telltale – inspect and clean.

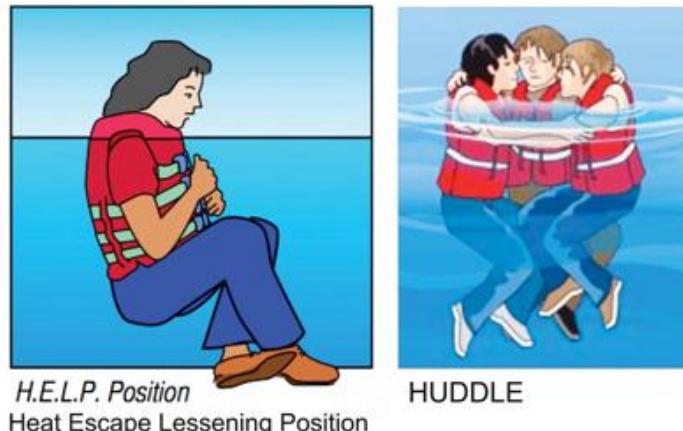
5.9. Master Incapacitated

1. A crew member must take control – preferably one who has been inducted to use the boat.
2. If the vessel is underway stop the vessel by pushing stop button or pulling the kill cords.
3. If the vessel is drifting near danger, deploy the anchor.
4. Call support vessel or emergency services and follow their directions.
5. Attend to the wellbeing of the master and any other injured people.
6. If necessary, navigate to shore/safe haven.

5.10. Abandon ship

1. Call support vessel or Marine Rescue.
2. Ensure all persons are wearing a lifejacket.
3. Stop engines.
4. Deploy anchor.
5. Prepare emergency equipment:
 - a. Signalling devices (horn and torch)
 - b. Extra Buoyancy aids e.g. life ring
6. Master to order “Abandon Ship” and ensure crew transfer to water one at a time to keep punt stable.
7. Take emergency equipment with you.
8. Ensure PFDs have deployed correctly if using inflatables.
9. Muster crew together in the water in HUDDLE or HELP position.
10. If vessel remains afloat, then cling to vessel for support and to be easier to find.
11. Use signalling devices to attract attention of support vessel / emergency services.

H.E.L.P / HUDDLE



5.11. Capsize

1. Ensure PFDs have deployed correctly if using inflatables.
2. Ensure all people are accounted for.
3. Remain as a group with the vessel to be readily seen.
4. If you must remain in the water, get in HUDDLE or HELP position.
5. Locate safety equipment and signal for assistance.
6. Liaise with support vessel / Marine Rescue upon arrival.

5.12. Serious injury / Medical emergency

1. Assess situation to determine nature and extent of injury.
2. Contact support vessel or emergency services as appropriate.
3. Provide first aid. DRSABCD
4. Maintain first aid until relieved by medical personnel.
5. Master or Vessel Supervisor to record details of incident.



Support vessel Gus at anchor in front of Smiths Lake Research Station.

6. Document list

The following documents relate to the management of BEES punts and their users. The documents located in the OneUNSW drive: OneUNSW/SCI/BEES/Boating and Diving are accessible by the BEES HSE Advisor and Boat Safety Officers.

Documents to register a user and use punts	Location
BOAT12 ASSESSMENT RECORD - Supervised Masters of punts at Smiths Lake	OneUNSW, BEES intranet
BOAT13 ASSESSMENT RECORD - Safely operate a punt < 4 m	OneUNSW, BEES intranet
BOAT03 ASSESSMENT RECORD - Drive and manoeuvre a trailer	OneUNSW, BEES intranet
BOAT14 Punt Inspection and Log for Educational Use	OneUNSW, BEES intranet
BOAT15 Punt Inspection and Log for Research Use	OneUNSW, BEES intranet

Boat Safety Management Documents for users and BSO	Location
BOAT11 SAFETY MANAGEMENT SYSTEM FOR Punts < 4 m	OneUNSW, BEES intranet
BOAT16 BSO ANNUAL PUNT MAINTENANCE CHECKS	OneUNSW
BOAT24 PUNT LIFE JACKET INSPECTION	OneUNSW
SCI-BEES-SWP-969 Smiths Lake Punts	SafeSys

7. Review and Evaluation

The BSC conducts an internal review of this SMS annually or after a serious incident. This review checks that the SMS is up to date and that any changes to the organisation, the vessel or associated documents are recorded. BEES will conduct an external review when major changes are made to the SMS or when a serious incident occurs. The results of the review are recorded in the “Version Control” section below. All relevant people are notified of changes to the document.

7.1. Version control

Date	Version	Approved By	Amendment
January 2021	1.0	BSC and HOS	Document creation

Appendix A: Exemption from requirement for crew to hold First Aid certification.



SPECIFIC EXEMPTION

Marine Safety (Domestic Commercial Vessel) National Law Act 2012, Schedule 1

Approval Number: SPEX-409

Name of Approval Holder: UNIVERSITY OF NEW SOUTH WALES
ABN: 57195873179

Name of Vessel	Type of Vessel	Unique Vessel Identifier	Service Category
DART	Power monohull	411820	2D, 2E
Class of Operation	Type(s) of Operation		
2D	Workboat		
2E	Workboat		

Approved specific exemption:

The vessel/operation is exempt from the requirement to comply with:

- Marine Order 504 (Certificates of operation and operation requirements — national law) 2018 only to the extent that it requires compliance with the First Aid requirements.

Exemption granted:

- The University of New South Wales is exempt from the requirement of Marine Order 504, Schedule 1 (6) (16) to operate various 'punts' as listed in their SMS without operators or crew holding a valid First Aid certificate.

Conditions:

- THE OWNER AND MASTER MUST ENSURE ANY VESSEL OPERATING UNDER THIS EXEMPTION REMAINS WITHIN ONE (1) NAUTICAL MILE OF SHORE AT ALL TIMES.
- THE OWNER AND MASTER MUST ENSURE THE VESSEL IS ONLY OPERATED WITHIN SMITHS LAKE, NSW AND WITHIN SMOOTH WATER OPERATIONAL AREA E WHILE OPERATING UNDER THIS EXEMPTION.
- THE OWNER AND MASTER MUST ENSURE THAT A SUPPORT VESSEL WITH CREW HOLDING VALID FIRST AID CERTIFICATES IS PRESENT AT ALL TIMES TO PROVIDE IMMEDIATE ASSISTANCE.
- THE OWNER MUST ENSURE THAT A SPECIFIC RISK ASSESSMENT IS LOCATED IN THE VESSELS SMS FOR OPERATIONS UNDER THIS EXEMPTION.
- THIS EXEMPTION IS ONLY VALID FOR VESSELS WHILE OWNED AND OPERATED BY THE UNIVERSITY OF NEW SOUTH WALES.

Unless revoked, this approval is valid from 19 January 2021 to 19 January 2026.

DELEGATE OF THE NATIONAL REGULATOR

PO Box 2181, Canberra ACT 2601
p 1800 627 484
w www.amsa.gov.au

Appendix B: Exemption from safety equipment.



APPROVAL

Particulars of vessel

Name of Vessel	Unique Identifier
DART	411820
SAMMUT	412037
DAVE	444012
SUTHERS	453591
CRACKS	449315
PLATY	449876

Measured Length	Service Category	Vessel Type
3 - 3.71 m	2E	PUNT

For the purposes of Marine Safety (Certificates of survey) Exemption 2020 Division 5 Condition 3 for the vessels identified above, the approved safety equipment standard is the National Standard for Commercial Vessels (NSCV) Part G other than the requirement to:

1. Carry level 150 (coastal) lifejackets
2. Have a bilge pump fitted
3. Carry a buoyant appliance
4. Carry a fire extinguisher

Conditions

The master AND OR owner of the vessel must ensure that the following conditions are met:

1. Vessels are to be operated on Smiths Lake only.
2. A support boat (either: Eddy – UVI 425232 or Gus – UVI 421813) must be on Smiths Lake when the punts are in use and carry the required safety equipment as set out in NSCV Part G.
3. PFD 100 Lifejackets are to be worn by persons on board the punts

Please note this decision does not relieve any person from the general safety duties which arise under Part 3 of the National Law.

Please note that this approval is only valid whilst the vessels are operated by the University of New South Wales.

Issued under the Marine Safety (Domestic Commercial Vessel) National Law Act 2012, Section 143.



AP2021/A005 issued at Adelaide 20 January, 2021

(Place of issue) Date of issue)

(Signature of authorised official)

Adam Gohl
Senior Marine Surveyor
Vessel Safety Unit

If you require clarification or have questions about this approval please contact
DCVApplications@amsa.gov.au

Appendix C: Scheduled Maintenance Program

Item		Pre-trip inspection	Annual BSO inspection	External inspections by Service Technician
Vessel	Hull	✓	✓	
	Bungs	✓	✓	
Engine	Engine Service			✓ 12 months
	Fuel lines	✓	✓	
	Engine oil	✓	✓	
	Tilt mechanism	✓	✓	
	Propellers	✓	✓	
Safety Equipment	100 Life jackets	✓	✓	
	150 Life jackets	✓		✓ 12 months
	Anchor, chain and rope	✓	✓	
	Bucket & lanyard	✓	✓	
	First Aid kit	✓		
	Torch	✓	✓	
	Horn	✓	✓	
	Bilge pump	✓*	✓	
	Fire extinguisher Powder <1 kg	✓*	✓	✓ 6 months
	Life Ring	✓*	✓	
	Flares	✓*	✓	
	Navigation lights	✓*	✓	
	GPS	✓*		
Trailer	Trailer safety chains & boat straps	✓*	✓	✓ 12 months
	Trailer lights	✓*	✓	✓ 12 months
	Trailer tyres	✓*	✓	✓ 12 months
	Trailer bearings	✓*	✓	✓ 12 months
	eSafety			✓ 12 months

* If item is required for operation it must be inspected prior to the trip.

Appendix D: Safety Briefing (example)

The detail included in the safety briefing will depend on the type of activity and the experience of the crew on the day. If you have been working with the same crew, in the same area and on the same boat for a multiple day field trip then a full briefing on subsequent days may not be required.

The following information is to be covered in a safety briefing:

- Lifejackets rules, how to fit them, location of whistle and lights (if fitted), and explain how inflatable jackets are activated (if used).
- Location and use of all the safety gear.
- Who to call in an emergency.
- Emergency stop using engine stop switch or the kill cord.
- Location of *Quick Reference Operation and Emergency Procedures*.
- Maintaining stability of people and equipment. No sitting on the gunnels or bow.
- Safety around propellers.
- Person overboard procedure.
- Explain any specific responsibilities and tasks e.g. procedure for anchoring or deploying equipment.
- Basic engine operations in case of Master in incapacitated (throttle, gear and steering).

Appendix E: Safety Equipment

Equipment	Smooth waters	Partially smooth waters
Safety Management System	✓	✓
Life jackets for Research purposes (one per person)	PFD 150	PFD 150
Life jackets for Educational purposes (one per person)	PFD 100	N/A
Bailer and lanyard (attached to vessel)	✓	✓
Anchor with chain and rope	✓	✓
Oars and oarlocks (two)	✓	✓
First aid kit	✓	✓
Waterproof floating torch	✓	✓
Communications (two mobile phones as minimum)	✓	✓
Sound signal	✓	✓
GPS	✓	✓
Paper maps or charts of operational area (Master responsible)	✓	✓
Mooring line (one)		✓
Buoyant appliance with light and 30 m of rope	✓*	✓
Powder Fire extinguisher <1 kg	✓*	✓
Manual bilge pump 20L/minute	✓*	✓
EPIRB (if > 2 nm from shore)		✓
1 Orange and 2 Red Flares (in remote enclosed waters or > 2 nm from land)	✓	✓
3 Parachute Flares (in remote enclosed waters or > 2 nm from land)		✓
Navigation lights: 360 white light with port and starboard sidelights (at night or in restricted visibility)	✓	✓
Dive flag (if conducting snorkel operations)	✓	✓

* Exempt if operating with support vessel on Smiths lake for Educational Activities.