**Altona Yacht Club Inc – Policy & Procedure Rev 0 10/03/2017**

**Policy Number – 9**

**Policy – Refuelling of Altona Yacht Club Vessels**

**Refuelling of Altona Yacht Club Vessels**

* The Club uses three types of 2 stroke outboard motors (oil injection, 50:1 premix, 100:1 premix). Each class of engine requires different types of fuel to be use. **If the incorrect fuel type is used, engine damage will result.**
* Oil injection motors use regular Un-Leaded Petrol (ULP), These motors automatically mix oil into the fuel in the motor in real time. If these motors are run on the wrong fuel type the motor will not be permanently damaged, but will run rough, smoke and the spark plugs will oil up, requiring engine maintenance.
* Pre-mix motors require oil to be manually pre-mixed into regular Un-Leaded Petrol (ULP) prior to being used by a motor. It is important that the correct ratio of oil is thoroughly mixed into the fuel**. If ULP is used without oil in 2 stroke motors requiring premix (even for a short time), irreversible engine damage will result.** The oil/fuel mix ratio can vary between motors. **The Red RIB uses a ratio of 50:1 fuel to oil. The Trainer uses a ratio of 100:1 fuel to oil.**
* For new pre-mix engines, during engine run-in period, a higher ratio of oil is used (often a fuel to oil ratio of 25:1 for the first 10 hours of engine run time).
* To avoid using incorrect fuel, each vessel is allocated a specific fuel tank that is distinctively labelled with the boat name and the fuel type.
* Refuelling of fuel tanks will be carried out by the members rostered on duty to operate the vessel that day.
* It is the responsibility of boat drivers to ensure that correct fuel mix has been put into the fuel tanks for their vessels.

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| **Altona Yacht Club Fleet Fuel Requirements** | | | | | |
| **Rescue** | **Patrol** | **Large Grey RIB** | **Red RIB** | **Small Grey RIB** | **Trainer** |
| Yellow | White | Grey & White | Red & White | Grey & White | Yellow & White |
| 90 hp Yamaha | 60 hp Yamaha | 25 hp Yamaha | 30 hp Tohatsu | 6 hp Evinrude | 6 hp Yamaha |
| 2 Stroke | 2 Stoke | 4 Stroke | 2 Stroke | 4 Stroke | 2 Stroke |
| Oil Injection | Oil Injection |  | Premix |  | Premix |
| **ULP** | **ULP** | **ULP** | **Premix ULP 50:1** | **ULP** | **Premix ULP 100:1** |

**Fuel Safety Key Safety Considerations**

* No person is to decant fuel or mix premix fuel within the Altona Yacht Club buildings all decanting and mixing of fuel must be carried out in the open away from any door or window openings into Club buildings.
* **Petrol is highly flammable and explosive, and you or others can be burned or seriously injured when handling fuel, so don’t become complacent during refuelling operations, and be mindful of the risks.**
* Petrol is a poison and is harmful or fatal if swallowed. If swallowed DO NOT INDUCE VOMITING, call POISONS INFORMATION LINE on phone: 13 1126.
* The material safety data sheet for unleaded petrol shows at least 15 hazardous chemicals occurring in various amounts, including benzene (up to 5% by volume), toluene (up to 35% by volume), naphthalene (up to 1% by volume), trimethylbenzene (up to 7% by volume), methyl tert-butyl ether (MTBE) (up to 18% by volume, in some states) and about ten others.[18] Hydrocarbons in gasoline generally exhibit low acute toxicities, with LD50 of 700 – 2700 mg/kg for simple aromatic compounds.[19] Benzene and many anti-knocking additives are carcinogenic.
* Read material safety data sheet and take sensible precautions during refuelling operations.
* Ensure you know where the Club First Aid Kit and Fire Extinguishers are located, know how to operate a Fire Extinguisher.
* Use eye protection when decanting fuel.
* Follow safe lifting guidelines; when lifting fuel tanks bend knees, keep straight back and no twisting. Only use approved fuel containers to collect, transport store and mix fuels. Filling non-approved or incorrectly labelled containers from dispensing pumps is illegal.
* By law you must switch off your engine before and during refuelling, and to extinguish your cigarettes prior to entering a service station. Only adults (15 years or older) are permitted to fill fuel tanks.
* When handling fuel and carrying out refuelling operations ensure that no ignition sources are around that could ignite fuel vapour.
* Contact with petrol can burn or irritate skin or eyes and stain or dissolve certain fabrics.
* If your clothing is splashed with fuel, saturate the area with water and remove the clothing slowly (to avoid static electricity) as soon as possible. Hang out to thoroughly air before washing.
* If fuel splashes on your skin, wash with soap and water. If fuel gets in your eyes, wash out with running water for at least 15 minutes. If pain persists, seek medical attention.
* Prolonged exposure to vapours can adversely affect health.
* Never siphon gasoline by mouth. It is harmful and may cause death if swallowed. If ingested, do not induce vomiting. Get medical help immediately.
* Never use petrol as a cleaning agent.
* It is illegal to pour fuel into drains or sumps due to the potential environmental damage and the risk of explosion.
* Remember, petrol vapours are flammable, are heavier than air, and can travel long distances to an ignition source.

**Safe Use of Fire Extinguishers**

* Familiarise yourself with where the club fire extinguishers are located, and the class of these fire extinguishers, prior to undertaking refuelling operations. The proper use of a fire extinguisher is critical to safe and fast suppression of a fire.
* Guidelines for the safe use of fire extinguishers:
* If it is safe to do so, remove the fire extinguisher from its mount and pull the safety pin using a rapid twisting motion.
* Position yourself upwind if outside or between the fire and a safe exit if in an enclosed space. Never allow the fire to get between you and a safe exit point.
* Activate the fire extinguisher and move in on the fire only as close as it is safe to do so. Open the nozzle of the extinguisher by pressing or pulling on the lever and discharge the extinguisher at the base of the flames in a slow sweeping motion. Never point the extinguisher at the middle or upper portion of the flames.
* As the flames are extinguished, move forward, continuing the sweeping motion. This will smother and cool the burning material and provide the most effective application of the extinguishing agent. After the fire is out, DO NOT turn your back on the fire area. There is always the dangerous chance of flashback and re-ignition. BACK AWAY from the extinguished fire. Should re-ignition occur, you will be in position to continue spraying the fire with an extinguishing agent.
* **NEVER enter a liquid fuel fire area without proper protective clothing and enough extinguishing agents to completely extinguish the fire. Liquid fuel fires can flash back quickly and engulf you in flames. Large areas of burning liquids are more effectively and safely handled by trained firefighters with proper protective clothing and equipment.**
* Fight a fire only if it is safe to do so. If the situation becomes too much to handle, leave the building or area immediately.

**Refuelling – Fuel Handling Procedures Safe Fuel Handling Procedures**

* For safety reasons, try to avoid busy times of the day to carry-out refuelling operations, such as when members are accessing their boats from boat storage racks. Suggest refuel the evening prior, or early in the morning.
* Collect containers from the fuel cupboard and remove any other tanks from the boats.
* Place the tanks in a safe and well-ventilated area before refilling. This means outside, away from the public, club members, and ignition sources. At busy times, you may need to use safety cones to protect members and the general-public by clearing an area around refuelling operations.
* Ensure that the access to the fire extinguisher in the shed is kept clear, and know where the other fire extinguishers are located.
* Avoid spills by using a funnel to fill the tank up to the safe fill level mark only (90% of container capacity), and inspect the condition of the fuel cap gasket and replace if necessary. Fuel expands with temperatures rises.
* After refilling, install and tighten the fuel cap securely, turn the vent knob counter clockwise to the closed position and return the fuel tank to the fuel cupboard.
* When collecting and transporting fuel from the Petrol Station, it is preferable to transport fuel in the back of a Ute or Trailer wherever possible.
* Only use Standard Unleaded Petrol in all the club two stroke engines.
* **When refuelling, ensure that fuel containers are removed from your vehicle and placed on the concrete prior to filling. This is to reduce risk of static discharge, and avoids spilling petrol on / in your vehicle.**
* **All fuel tanks must be removed from power boats for refuelling.**
* When filling a portable container, manually control the nozzle valve and fill slowly throughout the process to reduce the chance of static electricity build-up and minimize splattering / spilling.

**Preparation Guidelines for Premix Oil for Club Motors**

* Only use premix oil in the following Altona Yacht Club boats; Red RIB and Trainer.
* **Measure out correct oil at correct ratio of 50 parts fuel to 1 part oil for Red RIB.**
* **Measure out correct oil at correct ratio of 100 parts fuel to 1 part oil for Trainer.**
* Pour oil into fuel tank after adding the specified amount of petrol from a jerry can.
* Replace jerry can lid tightly.
* Shake the container to mix the fuel/oil thoroughly.
* Check to make sure the oil and petrol are mixed.
* Fill only those tanks requiring 50:1 fuel/oil mix or 100:1 fuel/oil mix (Red RIB & Trainer).

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| **Two-Stroke Fuel-Oil Mixture Chart** | | | | | | |
| **Fuel / Oil Ratio** |  | **Vessel** | **1 Litre** | **5 Litres** | **10 Litres** | **20 Litres** |
| 100:1 or 1% | Millilitres per litre | **Trainer** | 10 ml of oil | 50 ml of oil | 100 ml of oil | 200 ml of oil |
| 50:1 or 2% | **Red RIB** | 20 ml of oil | 100 ml of oil | 200 ml of oil | 400 ml of oil |

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| **Description of Boats Requiring Premix** | |
| **Red RIB** | **Trainer** |
| Red & White | Yellow & White |
| 30 hp Tohatsu | 6 hp Yamaha |
| 2 Stroke | 2 Stroke |
| Premix | Premix |
| **Premix ULP 50:1** | **Premix ULP 100:1** |

**Power Boat Crews – Power Boat Checks and Engine Operations**

**Power Boat Check and Setup**

* Always start the day with a full tank of fuel.
* Collect labelled fuel containers for each boat from the fuel cupboard.
* Each fuel container is clearly labelled with “boat name” and “fuel type”. Ensure you fit the correct fuel tank to your boat.
* **WARNING: If the wrong fuel container is used with another boat – engine damage may result! Don’t become famous for ruining an engine.**
* If a fuel container has been left in a boat, check it is full of fuel and it is the correct fuel container for the boat. If not, see on-duty refuelling volunteers for assistance.
* Proceed with pre-use boat check as per laminated card attached to radio. There is Pre-use checklist also on the wall above the fuel cupboard.
* It is the Crew’s responsibility to ensure correct safety and operation equipment is carried in each boat.
* Tank instillation, Pre-Start Checks, Starting the Engine
* Check the Fuel Cap Vent Knob. The cap is provided with a vent knob to seal the portable fuel tank for carrying it to and from the boat. Before use open the vent knob 2 or 3 turns counter-clockwise.
* Secure the portable fuel tank in the boat so it won’t move around and become damaged.
* Ensure that the outboard motor will be able to draw fuel for the tank, place the tank within 6 feet of the motor and not more than 3 feet below the fuel connector on the outboard motor.
* Connect the fuel hose to the tank, ensuring that the connector snaps securely into place.

**Power Boat Pre-use Checklist**

* Oil topped up & spare oil (1 litre) (Rescue and Patrol only)
* The Two Fuel tank(s) are full with one tank connected
* Radio and radio check
* Bungs,
* Tyre Pressure for the trailer is correct
* Bucket secured with lanyard
* Oars / Paddles
* Anchor with Chain & Rope, end of anchor rope secured to boat
* Bow Line, Tow Line
* Fire Extinguisher, First Aid Kit, Personal Safety Knife, Life Jackets for all persons on-board

**Power Boat Pack-up Check List**

* Turn off Radio & return any portable radios.
* Turn off Ignition & main battery switch (if fitted)
* Hose-down Boat and Trailer
* Flush Motor
* Report Maintenance Issues Sailing Committee Chairman

**Engine Operation Procedures**

* Fuel Priming – hold the priming bulb with the outlet end higher than the inlet end (an arrow on bulb indicates outlet/flow direction). Squeeze the primer bulb several times until if feels firm, indicating that fuel has reached the carburettor.
* Check to see there are no fuel leaks before starting the engine.
* DO NOT squeeze the priming bulb when the engine in running because that could flood the carburettor.
* Fit the emergency stop switch clip and securely attach the lanyard to yourself, such as around your leg or clipped to you PFD. Do not attach around your wrist as likely to slip off without activating the kill switch.
* Ensure the motor is in the water prior to starting, so the water inlet can draw in water to cool the engine.
* Check the position of the gearshift leaver / throttle leaver. It must be in N (neutral) position for starting. If the gearshift leaver / throttle is on F (forward) or R (reverse) positions the recoil will not operate and the electric starter button is blocked (where fitted).
* To start a cold engine, pull out the choke knob. To restart a warm engine, leave the choke knob pushed in.
* Using the Recoil Starter – pull the recoil starter slowly until you feel resistance, then pull briskly. Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter. Do not pull the starter while the engine is running, as it may damage the starter.
* For motors with eclectic start, do not use the stater motor for more than 5 seconds. If the engine fails to start, release the starter button/key switch, and wait at least 10 seconds before operating the starter motor. Do not use the electric starter while the engine is running as this may damage the starter.
* After starting, check the oil pressure indicator light (where fitted). The light should be on while the engine is running. If the light is off, stop the engine immediately, check the engine level, and inspect the engine for leaks.
* If the engine fails to start, check the emergency stop switch.
* After starting, be sure water is flowing out of the water check hole. If water does not flow out, or if steam comes out, stop the engine. Check to see if the screen in the cooling water inlet is obstructed. Do not operate the engine until the problem has been corrected.
* If choke was used, push it in gradually as the engine warms up.