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Boating Tip #53: Yamaha 2-1/2 hp Outboard Motor Operation

Pre-start Checklist:

- Perform a brief safety and maintenance inspection.
- Make sure the outboard motor is properly mounted on the centerline of the dinghy.
- Check the clamp screws to make sure the outboard is firmly attached to the transom.
- Check the throttle, gear shift, and steering tension for proper operation. Tighten or loosen the steering friction screw. Adjust the throttle friction resistance wingnut.
- Check the fuel level in the tank. If the fuel level is low, fill the tank with regular unleaded gasoline.
- Check the engine oil level.
- Make sure each passenger has a PFD. Children under 12 years of age must wear their PFD at all times while in the dinghy.
- Make sure all required safety gear is aboard (flares, orange smoke, anchor, bailer, fire extinguisher...)
- Check that the spare parts and engine tool kit is aboard the dinghy (tools, extra spark plug, kill switch lanyard, cotter pin, starter handle)
- Install navigation lights if you plan to be out after dark. Check the lights to make sure they work.
- Take along a portable VHF radio so that you can call for help in an emergency. Make sure the radio is charged and ready for use.

WARNING! This engine is water cooled. Do not start the engine out of water.

Fueling:

- Stop the engine before refueling.
- Do not smoke, and keep open flames, sparks or anything that might ignite the gasoline away from the engine while fueling.
- Open the fuel fill cap by turning counterclockwise.
- Slowly pour gasoline into the tank.

- Don't overfill the tank. The fuel tank holds 0.24 gallons of regular unleaded gasoline with an octane rating of at least 86.
- Clean up any spills immediately.

Adding Engine Oil:

- Open both cowling lock levers and remove the top cowling cover.
- Visually look to see that a thin coating of oil covers the oil level check window.
- If the oil level is low (below the lower mark in the oil level check window), twist open the yellow cap and add either 10W-30 or 10W-40 engine oil.
- Do not overfill the reservoir. The engine oil capacity is 0.37 quarts.

To Start the Engine:

- Insert the black plastic lockplate on the kill switch lanyard onto the orange engine stop switch.
- Attach the other end of the lanyard to the operator's body, PFD or clothing, so if the operator falls away from the helm or overboard, the cord will pull away from the switch and stop the engine.
- Open the fuel tank air vent on the top of the fuel cap by turning counterclockwise a couple of turns.
- Turn the fuel cock lever to the open position to allow gasoline to move from the fuel tank to the engine carburetor.
- Make sure the gear shift control lever is in neutral (straight up and down) before starting the engine.
- Pull open the choke knob to the start position when starting a cold engine.
- Move the throttle grip all the way to the right (clockwise) to the start position.
- Pull the recoil starter grip to crank the engine.
- After the engine starts, push the choke knob to the 1/2 way point and run at a lower speed for 5 minutes to warm the engine. After the engine is warm, push the choke knob in all the way to the run position so the engine doesn't stall.
- Pull the gear shift toward you to put the engine in forward gear.
- Steer by moving the tiller handle to the right or left and in the opposite direction you want the boat to turn.
- If necessary, trim the angle of the outboard to compensate for weight, water or wind conditions.
- If after sunset, turn on the navigation lights.

To Change Speed:

- To increase speed, turn the throttle grip on the tiller handle counterclockwise
- To decrease speed, turn the throttle grip on the tiller handle clockwise

To Stop the Engine:

- Pull on the lanyard and pull the lockplate clip out from behind the orange engine stop switch. (Or, move the throttle grip lever to the slow position, and push and hold down the orange engine stop button until the engine stops).
- Move the fuel cock lever to the off position.
- Close the fuel tank air vent clockwise.

To Operate the Engine in Reverse:

- Move the throttle grip to the slow position to reduce speed.
- Turn the outboard around 180° and pivot the tiller handle so it faces you.
- Move the gear shift lever from neutral to forward.

To Tilt the Engine Up and Out of the Water:

- Stop the engine.
- Close the air vent screw so gasoline does not leak out of the tank.
- Place the gear shift in neutral with the engine facing forward.
- Tighten the steering friction adjuster.
- Use the rear handle to tilt the outboard up.
- The tilt support lever will automatically lock the outboard into the up position.

To Lower the Engine Back into the Water from the Tilted Up Position:

- Slightly tilt the motor up.
- Pull the tilt support lever up while slowly lowering the motor down.
- Loosen the steering friction adjuster.

To Tow the Dinghy Astern:

- Attach a sailboat halyard to the outboard. The outboard motor weighs 37 pounds.
- Loosen the clamp screws from the dinghy transom.
- Remove the outboard from the dinghy by manually lifting it away from the transom and hoisting it using the halyard and winch. Lift the outboard to a position above the sailboat lifelines.
- Guide the outboard to the rail mounted bracket on the sailboat. Secure it to the bracket by tightening the clam screws clockwise.
- Secure the clamp screws with plastic zip ties or a line.
- Tie the dinghy tow line (hawser) to the sailboat and tow short while leaving the slip, anchorage or mooring, or while in astern propulsion.
- After clearing the marina, anchorage or mooring, and in open water free of obstructions, let out the hawser and tow long. To reduce shock stress on the towing hawser, make sure there is enough catenary so the line dips into the water. Let out enough line so that both vessels are in step and reach a wave crest or trough at the same time.

- Make sure bridle legs are of equal lengths.
- To reduce yaw, use longer bridle legs.

Outboard:

Yamaha 2.5 hp outboard

California Air Resources Board emission level: two stars – very low emissions

Type: 4-stroke S, 1 cylinder / 2 valves

Displacement: 72 cm³ (4.39 in³)

Bore & stroke: 2.13 x 1.24 inches

Full throttle RPM range: 5250 - 5750 rpms

Rated power: 2.5 hp @ 5500 rpm

Idle speed: 1900 rpms

Cooling system: Water

Ignition system: TCI

Starting system: Manual

Propeller: 3-blade metal

Dry weight: 37 pounds

Dimensions: 24.5" x 13.6" x 40.2"