



# OPERATIONAL HINTS

**M**ASTERCRAFT URGES ALL WHO WILL BE OPERATING THE boat to seek certified instruction from the local boating authorities. This section is designed to present the most basic operational principles. It is NOT intended to cover all conditions encountered during operation. Therefore, the principles presented in this Manual are limited to the facts related directly to the operation of the boat, while the responsibility for the proper application of these principles belongs with the boat owner and/or operator.



**Adding additional ballast to your MasterCraft boat is not recommended, and can result in impaired visibility, diminished handling characteristics and instability when operating your boat, and may result in potential structural and/or engine damage to your boat, which damage will not be covered by your warranty.**

## Loading

Never overload the boat. The maximum weight capacity as listed on the certification plate includes all items

added to the boat (including persons and gear). Proper distribution of weight is critical to boat performance. Allocate the load as evenly as possible.

The maximum weight capacity includes filled, factory-installed ballast tanks and/or ballast bags, added by the customer.

Note that adding ballast bags reduces the number of people and the amount of gear that can be added. Failure to adhere to the total maximum capacity may result in too much strain on the drive train or may sink the boat. This is not covered under warranty!



**Information regarding the maximum number of people and/or additional weight to the boat is included in the *Guide to Individual Models* section of this Manual. It is the boat operator's responsibility to ensure that the boat is never overloaded. Too much additional weight may cause the boat to overturn or sink, which can result in serious bodily injury or death.**

## Emergencies

Know how to use and spot distress signals, and to offer assistance if possible. Remember, you may need assistance some day.

## Courtesy

Always respect the rights of others on the water. Keep wide when passing, slow down in crowded areas, be alert and be aware of your wake and wash.

## First Time Operation

When taking to the water for the first time, you must keep in mind a few general guidelines:

- **Practice makes perfect!** Start in calm water with no wind or current and plenty of room until you get the feel for the boat and its controls.
- **Proceed slowly!** Give yourself time to think, react and maneuver.
- **Recognize outside forces!** Check the wind direction and velocity, as well as water currents and waves.
- **Have a crew on hand!** Have friends or family ready with fenders, lines and a boat hook to assist you when docking, as well as launching and loading.
- **Remember that a boat is not an automobile!** Boats cannot be maneuvered and stopped like a car. Boats steer from the stern (rear) and have no brakes.

## Basic Maneuvering

Steering response is dependent upon three (3) factors: rudder position, motion and throttle. While high speed maneuvering is relatively easy and takes little practice, slow speed maneuvering is far more difficult and requires time and practice to master.

With both steering and propulsion at the rear of the boat, the initiation of a turn pushes the stern of the boat away from the direction of the turn. The stern follows a larger turning circle than the bow. This is especially important to remember when making maneuvers within close quarters.

While the effects of unequal propeller thrust (torque steering), wind, and current may not always be present, a practiced driver will use them to his advantage.

Unequal thrust is a phenomenon shared by all single-engine, propeller-driven boats. With the rudder in the straight-ahead position, a counterclockwise rotation propeller tends to cause the boat to drive to port when going forward, and to starboard when going backward.

At high speed, there is compensation for this effect, and it is virtually non-existent. But, at slow speed—and especially during backing—the effect can be very pronounced. This is the main reason that most experienced drivers approach with the dock to the starboard of the boat.

Stopping—or checking headway—is a technique that must be mastered. With no brakes, reverse must be used to stop the boat. The momentum of the boat will vary according to the load. Make it a practice to slow to no-wake speed before shifting into reverse.

When practicing maneuvering techniques, always do so in open water that is free of traffic. Adequate practice may make the difference between a pleasurable boating experience or a potentially damaging (at the very least, embarrassing) one.

## High Speed Operation

MasterCraft boats are designed to be a high-performance boat. Professional drivers with advanced operating skills perform high-speed maneuvers and turns on-a-dime. DO NOT attempt to duplicate or simulate these feats. Paid, professional drivers log thousands of hours on the water and carefully choreograph every move. Plans are made in advance in the event the routine must be aborted. Maneuvers of this nature could cause serious injury or

death, as well as damage to your MasterCraft boat that will not be covered under warranty.



**Boat operators should never attempt to duplicate operational skills of professional drivers. When such maneuvers fail, it can result in serious injury or death.**

For the best engine performance and longevity, the wide-open-throttle (WOT) engine operation must be near the top of, but within, the specified WOT operating range. To adjust the WOT operating range, select a propeller with the proper diameter and pitch. The propeller supplied on the boat was chosen for best all-around performance under average operating conditions.

Load, weather, altitude and boat condition all affect WOT engine operation. If the boat is used for several different applications such as wakeboarding, barefooting and cruising, it may be necessary to have two (2) or more propellers of differing size and pitch to allow the engine to operate in the WOT range for each application.



Propping the boat should be done after the boat is loaded in the manner in which it would normally be loaded for each application. For example, in propping the boat for wakeboarding, fill the ballast tanks and add the people and gear that normally would be expected in the boat. Take the boat out and after warm-up, run it at wide-open-throttle and note the maximum RPM. EFI engines are equipped with RPM limiters to prevent over-revving. Take note if the RPM limiter is activated.

If the WOT RPM is higher than the maximum RPM in your engine's WOT operating range, the boat is under-propped. Installing a higher-pitched propeller will reduce

the WOT RPMs. An engine that is over-revving may quickly experience catastrophic damage, which will not be covered under warranty.

If the WOT RPM is lower than the minimum RPM in your engine's WOT operating range, the boat is over-propped. Installing a lower-pitched propeller will increase WOT RPMs.

An engine that is under-revving is "lugging." This places a tremendous load on the pistons, crankshaft and bearings and can cause detonation, piston seizure and other engine damage, which will not be covered under warranty.

## CAUTION

**Engines should always be operated within engine manufacturer guidelines. Failure to do so may cause significant damage to the engine and drive train and is not covered under warranty!**



Elevation and weather also have a very noticeable effect on the wide-open-throttle power of an engine. Since oxygen gets thinner as elevation increases, the engine begins to starve for air. Humidity, barometric pressure and temperature have a noticeable effect on the density of air since heat and humidity thin the air.

This phenomenon can become particularly apparent when an engine is propped for use on a cool, dry day in spring and then is operated on a hot, humid day in summer, and does not have the same performance. Although some performance can be regained by dropping to a lower-pitch propeller, the basic condition still exists. The propeller is too large in diameter for the reduced power output. An experienced marine dealer can determine how much diameter to remove from a lower-pitch propeller for specific high-elevation locations.

MasterCraft's engine manufacturers suggest that consumers consult with the dealer from whom the boat was purchased regarding the best propeller for the application in which the boat will primarily be run. However, be aware that changing the propeller may void the warranty. Again, working with an authorized MasterCraft dealer is your best bet to ensure excellent performance.

### Unusual Operating Conditions

If the body of water is unknown, talk to the local boaters about the type of obstacles that may be encountered beneath the water's surface. Rocks, tree stumps and sandbars are all dangerous and damaging. Be especially wary of rivers and man-made lakes. Rapidly changing conditions can cause daily changes in underwater hazards.

Stay well clear of floating debris. What looks to be a small branch in the water may well turn out to be an entire tree.

When traveling through weedy areas, keep an eye on the engine temperature gauge. Weeds caught up and blocking the water flow through the raw water intake or transmission cooler will cause trouble. Also, after leaving the weedy area, shift to neutral for a few seconds and then to reverse for a few seconds to unwind any weeds that may have wrapped around the propeller.

### Docking and Tie-Up

Approach the dock slowly, with the starboard side of the boat if possible. The natural tendency to torque steer with the rotation of the propeller at slow speeds makes docking easier on that side. Also, use wind and current to your advantage when docking.

Before tying up the boat, be sure to use enough dock bumpers to protect the boat from damage. If possible, tie-up with the bow toward the waves. Use good quality double-braided nylon line. Tie-up only to the lifting or tie-down eyes. Never use the handrails or ski pylon.

If the boat is to be moored for a long period of time, use chafing protectors to protect the gel coat finish. Leave a little slack in the lines, allowing for some wave movement or tidal action where applicable.

If the boat is to be kept in or near water for the season, consider the purchase of a boat lift. These lifts prevent the build-up of marine growth on the hull as well as protecting the boat from damage typical of on-water storage, such as blistering. Make sure the boat lift supports the hull correctly. See the next section, *Lifting the Boat*.