Cavitation is caused by one of the following:

1. Propeller operating too close to surface.
2. Turbulence in slipstream due to obstruction such as a wide or deep keel.
3. Propeller fouled by weeds, rope, etc.

Effect of Transom Height: A greater transom height will increase boat speed but makes cavitation more likely. The effect of transom height on speed is slight at low speeds (15-20 MPH) but important at higher speeds. (Refer to Propeller Recommendation Chart, third page, for recommended transom heights for Kiekhaefer Mercury Outboard Motors.) In setting up a boat for maximum speed, run the first test with the engine way in, close to the transom; then move it out one tilt pin hole at a time until maximum performance is reached. Next, start adding ¼" sticks (rev sticks) on top of the transom until speed starts dropping off or propeller starts cavitating. When this happens, lower the transom ¼" and boat should be set for top speed. When satisfactory transom height is found, it is recommended that the engine be secured to boat by the two bolts placed thru the transom into the slot provided at the bottom of the clamp bracket. In general, lower transom height for heavy loads; a higher transom height for higher speeds with light loads. Due to wide variation of boat design and use, exact depth of lower unit will not be ideal in all cases.

Effect of Boat Bottom Condition: For maximum speed, a boat bottom should be nearly a flat plane where it contacts the water. It should be especially straight and smooth in the fore-and-aft direction. *1. Hook:* The bottom is said to have a "hook" if it is concave in the fore-and-aft direction when viewed from below. When the boat is planing, this causes more lift on the bottom near the transom and allows the bow to drop. This greatly increases the wetted surface and reduces boat speed. A hook is frequently caused by supporting the boat too far forward to the transom while hauling on a trailer or during storage. *2. Rocker:* A "rocker" is the reverse of "hook" and much less common. The boat has a rocker if the bottom is convex in the fore-and-aft direction when viewed from below. A bo a rocker has a strong tendency to porpoise. *3. Surface Rou* Moss, barnacles or other surface irregularities that increa friction of the boat bottom will cause considerable loss speed.

Effect of Gear Case Exterior: Surface roughness of the gea caused by barnacles or corrosion, can easily cause a speed 1 to 2 MPH on boats in the 30-35 MPH class. This condition to lower units which are left in water for an extended length Gear case should be cleaned when necessary.

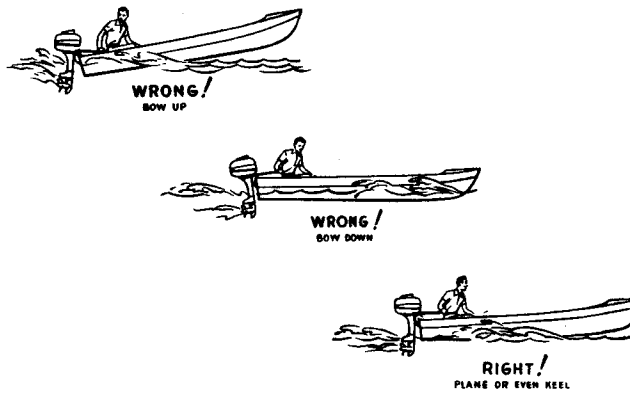

Figure 2. Planing a Boat

WEATHER EFFECT UPON ENGINE PERFORMANCE

Engineers have long known that weather exerts a profound on internal combustion engines, therefore, all horsepower