the centrifugal force and allowing the buried float to come up.

SAILING

Landplane pilots are accustomed to taxiing by pointing the nose of the airplane in the desired direction and rolling forward. In seaplane operations, there are often occasions when it is easier and safer to move the seaplane backward or to one side because wind, water conditions, or limited space make it impractical to attempt a turn. If there is a significant wind, a seaplane can be guided into a space that might seem extremely cramped to an inexperienced pilot. **Sailing** is a method of guiding the seaplane on the water using the wind as the main motive force. It is a useful technique for maneuvering in situations where conventional taxiing is undesirable or impossible. Since the seaplane automatically aligns itself so the nose points into the wind, sailing in a seaplane usually means moving backward.

In light wind conditions with the engine idling or off, a seaplane naturally weathervanes into the wind. If the pilot uses the air rudder to swing the tail a few degrees, the seaplane sails backward in the direction the tail is pointed. This is due to the keel effect of the floats, which tends to push the seaplane in the direction the sterns of the floats are pointing. In this situation, lift the water rudders, since their action is counter to what is desired. When sailing like this, the sterns of the floats have become the front, as far as the water is concerned, but the rear portions of the floats are smaller and therefore not as buoyant. If the wind is strong and speed starts to build up, the sterns of the floats could start to submerge and dig into the water. Combined with the lifting force of the wind over the wings, the seaplane could conceivably flip over backward, so use full forward elevator to keep the sterns of the floats up and the seaplane's nose down. Adding power can also help keep the floats from submerging.

If enough engine power is used to exactly cancel the backward motion caused by the wind, the seaplane is not moving relative to the water, so keel effect disappears. However, turning the fuselage a few degrees left or right provides a surface for the wind to push against, so the wind will drive the seaplane sideways in the direction the nose is pointed. Combining these techniques, a skilled pilot can sail a seaplane around obstacles and into confined docking spaces. [Figure 4-11]

Figure 4-12 shows how to position the controls for the desired direction of motion in light or strong winds. With the engine off, lowering the wing flaps and opening the cabin doors increases the air resistance and thus adds to the effect of the wind. This increases sailing speed but may reduce the effect of the air rudder. If sailing with the engine off results in too much motion downwind, but an idling engine produces too much thrust, adding carburetor heat or turning off one magneto can reduce the engine power slightly. Avoid using carburetor heat or running on one magneto for extended periods. Instead, start the engine briefly to slow down.

Where currents are a factor, such as in strong tidal flows or a fast flowing river, sailing techniques must

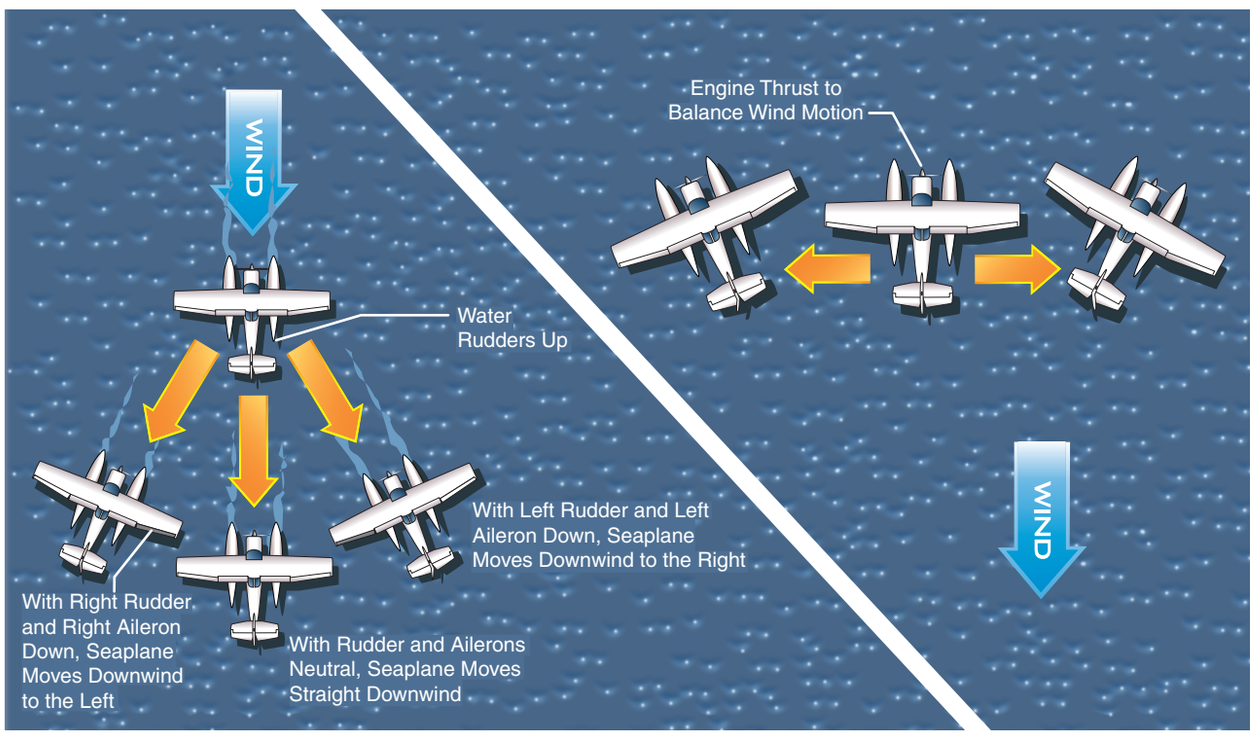

Figure 4-11. When the seaplane moves through the water, keel effect drives it in the direction the tail is pointed. With no motion through the water, the wind pressure on the fuselage pushes the seaplane toward the side the nose is pointed.