

Figure 4-5. Idling position. The engine is at idle r.p.m., the seaplane moves slowly, the attitude is nearly level, and buoyancy supports the seaplane.

Use the idling or displacement position for most taxiing operations, and keep speeds below 6-7 knots to minimize spray getting to the propeller. It is especially important to taxi at low speed in congested or confined areas because inertia forces at higher speeds allow the seaplane to coast farther and serious damage can result from even minor collisions. Cross boat wakes or swells at a 45° angle, if possible, to minimize pitching or rolling and the possibility of an upset.

PLOWING POSITION

Applying power causes the center of buoyancy to shift back, due to increased hydrodynamic pressure on the bottoms of the floats. This places more of the seaplane's weight behind the step, and because the floats are narrower toward the rear, the sterns sink farther into the water. Holding the elevator full up also helps push the tail down due to the increased airflow from the propeller. The **plowing position** creates high drag, requiring a relatively large amount of power for a modest gain in speed. Because of the higher r.p.m., the propeller may pick up spray even though the nose is high. The higher engine power combined with low cooling airflow creates a danger of heat buildup in the engine. Monitor engine temperature carefully to avoid overheating. Taxiing in the plowing position is not

recommended. It is usually just the transitional phase between idle taxi and planing. [Figure 4-6]

PLANING OR STEP POSITION

In the **planing position**, most of the seaplane's weight is supported by hydrodynamic lift rather than the buoyancy of the floats. (Because of the wing's speed through the air, aerodynamic lift may also be supporting some of the weight of the seaplane.) Hydrodynamic lift depends on movement through the water, like a water ski. As the float moves faster through the water, it becomes possible to change the pitch attitude to raise the rear portions of the floats clear of the water. This greatly reduces water drag, allowing the seaplane to accelerate to lift-off speed. This position is most often called **on the step**. [Figure 4-7]

There is one pitch attitude that produces the minimum amount of drag when the seaplane is on the step. An experienced seaplane pilot can easily find this "sweet spot" or "slick spot" by the feel of the floats on the water, but the beginning seaplane pilot usually needs to rely on gauging the position of the nose on the horizon. If the nose is considerably high, the rear portions of the floats contact the water, drag increases, and the

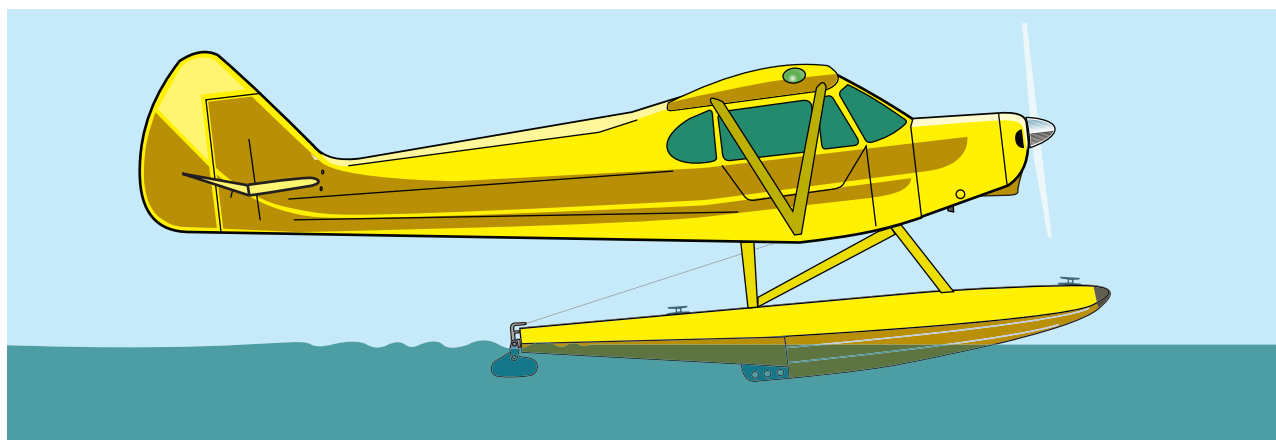


Figure 4-6. Plowing position.