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Propellers

WITHOUT PROPELLERS, THERE WOULD BE NO AIRPLANES TODAY. IT IS the propeller that first made powered flight possible, and it is the propeller that caused the first powered flight fatality. Lt. Thomas Selfridge, who was evaluating the airplane for the Army, was killed while flying with Orville Wright on the Wright Military Flyer. The accident, which occurred on September 17th, 1908, was the result of a prop failure.

While propellers have come a long way since 1908, they can still be a major problem. The Worldwide Aircraft Propeller Association did a random survey of 15 U.S. propeller repair stations, approximately 12% of the total. It showed that approximately 62% of the 2743 propellers submitted for inspection were unairworthy due to corrosion alone. The care and feeding of propellers is something with which every pilot and aircraft owner should be familiar.

SYSTEM OVERVIEW

A propeller can be defined as a rotating airfoil with two or more blades attached to, or integral with, a hub. Powered by an aircraft engine, its purpose is to convert engine horsepower to thrust. Propellers are designed to be compatible with specific engines on specific aircraft and are not interchangeable, except as specifically permitted by the manufacturer.

There are two basic configurations for propellers: tractor and pusher. The tractor propeller, mounted on a forward-facing engine, is most common. It's so named because it