SAFETY FIRST

WHY KILL YOURSELF?

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One of the main objectives of the SSA Safety Committee is to collect data on accidents in order to determine whether or not a particular type of accident has become dominant and thus requires corrective action. The years 1957 and 1958 have shown that a trend toward a particular type of accident now exists.

Like any other fixed wing aircraft, the sailplane needs forward motion to stay in the air. When the velocity of the air passing over the wing falls below a certain value, the wing stalls and control is momentarily lost. There follows a scoresheet, compiled during the last two years, of those pilots who for one reason or another failed to observe this basic fact.

3 pilots killed
7 pilots with major, extensive injuries
12 pilots with minor injuries
9 sailplanes destroyed
5 sailplanes with major damage
2 sailplanes with minor damage

All the above accidents occurred when the ships were below 1000 feet; the majority were less than 500 feet above the ground. Some of the pilots were taking off. However, most were approaching to land. Some of the stalls resulted in spins, some did not. It doesn't make any difference to the sailplane where or when it stalls; all it knows is that when the speed is too low for the given conditions, control is lost.

An important point here — the one that many pilots forget — is that the stall speed varies as the conditions change. In other words, the ship will stall at a higher indicated airspeed when in a turn. Or it may stall if the spoilers are suddenly opened at a minimum airspeed. There are numerous potential conditions leading to an unexpected stall.

What may result from a stall? Let us look at the war surplus two-place ships such as the TG-1 (Cinema), TG-2, TG-3 and TG-4 (L-K). Without exception, all these ships may, with two people aboard, spin easily and quite readily. Varying warnings of the approaching stall are given, depending on the individual sailplane; most of them are quite obvious, once the pilot learns to recognize them. The usual indication is a shaking or tremor in the tail surfaces. A spin may easily follow the stall even if the CG is within the specified limits. A CG outside the limits makes a ship even more spin-sensitive. This is not to be construed as stating that a spin always follows a stall. It does not — but it may, very unexpectedly.

If the pilot is familiar with the ship and its characteristics, recovery from a spin entry can be effected with no more than 150 feet loss in altitude. Often, less altitude is needed. However, the pilot must immediately recognize the characteristic sideways sliding motion and rapidly apply corrective action. To delay may be fatal if the spin entry occurs at a low altitude.

The following suggestions, pointed toward the reduction of stall and stall-spin accidents, have been gleaned from the 16 accidents listed above. In every case, the pilot either had not been trained properly or he forgot to observe that the maintenance of an adequate air speed is one of the most basic aspects of safe flying.

(1) Require that all students, particularly power pilots, have a minimum of one hour of stall and stall-spin entry and recovery dual practice in a two-place sailplane, if available. If a two-place ship is not available, an airplane is a suitable substitute.

First, teach the student how to recognize the approaching stall. Emphasize that the stalling speed is not a fixed value but that it depends on many variables. Make sure the student recognizes the pre-stall buffet.

Second, teach that a stall results from a lack of airspeed for the given conditions and, since the airspeed of the sailplane is governed by the stick and only the stick, that to increase the airspeed, he must drop the nose or, in other words, relieve back pressure on the stick.

Third, teach that once a stall is entered or is imminent due to attitude, the only way to recover is to shove the stick forward to regain flying speed. This does not mean all the way forward but just enough to drop the nose appreciably. When the ship has assumed a nose down attitude, the speed will quickly increase.

Fourth, teach that if a spin is being entered, stick forward plus full opposite rudder is required. If the spin is identified as soon as it starts, it can be stopped in considerably less than half a turn.

Fifth, teach spin recovery.

(2) Train part of the time with the student's airspeed and altimeter covered. The instructor's instruments would, of course, be in normal operation. Flying without an airspeed accomplishes several things. It teaches the student to closely identify the stall warning and it teaches him to relate a safe airspeed with the noise level. All sailplanes have some degree of noise when airborne. The intensity is a direct function of the airspeed. A secondary advantage of the lack of instruments is that the student will, since there is nothing to see inside the cockpit, tend to keep his attention outside.

(3) Install a dependable, accurate airspeed indicator(s) in the ship. It is well worth the money to have that old "boiler gage" replaced or overhauled. This is particularly true if the ship is to be used for training.

(4) Make it a practice to fly a minimum of 25% above stalling speed when less than 1000 feet above the terrain. In other words, when in the landing pattern with a ship that stalls at 40 mph, fly at 50 mph minimum. Maintain the speed until the wheel is on the ground. This assures three things, (a) changes in heading, whether major or minor, will not stall out the ship, (b) there is a reserve of speed available in case of emergency, (c) control, particularly with the ailerons, is more positive and the response is more rapid.

One factor in the accident picture that has been ignored in the above discussion, but which has perhaps the greatest bearing on safe flying, is pilot attitude. If the pilot in question displays a tendency to treat sailplanes as something easy to master and, being simple, cannot go wrong, an accident is being prepared. Sailplanes deserve the utmost respect as the three dead pilots would indicate if they could. Many aspects of

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