

LANDINGS and the APPROACHES THERETO

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An accident is defined by the dictionary as being, "An undesirable or unfortunate happening; casualty; mishap. A nonessential circumstance, occasional characteristic; misfortune; disaster; calamity;" and that is exactly what they are whether major or minor. A look at a list of recent glider accidents of which the Safety Committee has knowledge shows one fatality and one seriously injured pilot in addition to which four sailplanes were damaged, two of which were beyond reasonable repair. The one common factor in all this destruction is that all the pilots were in the landing phase of their flights and did not follow the simple basic rule of setting up a good landing pattern and sticking to it. Why is it important that sailplane pilots set up a good pattern? The reason is obvious. There is only one chance for a "go" at the ground and the mistakes can be counted by noting the numbers of damaged ships. Both students and experts get caught when the fundamentals are forgotten or ignored. The student has trouble because he does not have the experience to contend with the variables in wind velocity, strange landing areas, traffic or the characteristics of the ship he is flying. The expert makes mistakes because of carelessness, inattention, or failure to take his physical condition into account after a long, hard flight.

By definition, a pattern means that the pilot flies along a predetermined flight path in such a manner as to touch down safely at a chosen spot on the ground. While this may sound easy, it actually requires a high degree of skill, and the best method yet found that satisfies both the safety requirement and the precision requirement is the standard power plane approach pattern using a downwind leg, a crosswind or base leg and a final approach. It is used by powered aircraft pilots for the simple reason that no matter whether they are fly-

ing an Ercoupe, a transport or a supersonic fighter, they first want to establish their position with regard to the touchdown point and then fly in such a manner as to have maximum control over the variables that might influence their flight path the rest of the way to the ground. When it is considered that 99.99% of all airplane landings are on designated, prepared fields and that a great number of glider landings are not, the reason for a good pattern is even more evident.

Here is an ideal approach and landing. The pilot approaches the center of the field at a 45 degree angle and at an altitude of 500 to 600 feet, turns downwind parallel to and about 1,000 feet horizontally from the runway, flying at a speed of at least 15 mph above the stall. When he is past the touchdown point and at 300 feet altitude, he turns onto the base leg and, at 200 feet, turns onto final, using spoilers as necessary. The point at which he passes the touchdown point on the downwind leg is considered to be the "key" point. It is from here on in that good judgment is necessary, and if the approach has gone as planned, the pilot will touch the ground within 25 feet of the chosen spot and be stopped within 150 feet.

In analyzing the pattern step by step, the advantages become apparent. The approach to the field at a

minimum altitude of 500 feet allows the pilot time to set up a proper pattern without the necessity of making extreme adjustments to his flight path when close to the ground. Extreme adjustments can be defined as steep turns below 200 feet and it is because of these that many a pilot has spun in. The records show that the percentage of spin recoveries below 200 feet is, for all practical purposes, negligible. Other interesting probabilities here include catching a wing in the ground, stalling in or losing altitude through sloppy pilotage. The downwind run past the chosen spot on the ground gives the pilot the opportunity to look over the approach, note the usual high tension lines or barbed wire fences, the height of the trees and so on. Also, during this phase of the approach, the pattern makes it possible to turn short and land immediately in case unusual sink is encountered. The increased speed at low altitude is only common sense in that control is more positive and the reserve of speed can be used to conserve or gain altitude in case of the possibility of landing short. The chances of stalling are greatly reduced and the excess speed or altitude can be lost by slipping or using spoilers. It is far better to have a surplus of speed or altitude which can be gotten rid of than to have neither when one or the other is needed to make a successful landing possible.

Straight-in approaches are in a class by themselves. Unless the pilot's judgment is highly developed, the possibility for error is great and even the wisest pilot will always have alternate landing spots on the way in "just in case." Nothing builds up nervous tension in a pilot faster than to be committed to a landing place well out in front with no alternatives between where he is and where he wants to be. With the whole situation in considerable doubt, the resulting frame of mind does nothing

NOTICE

Correspondence with regard to Gliding certificates should be sent direct to the Chairman of the F.A.I. Awards Committee. His address is:

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