Gliding and Airline Piloting

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OFF-HAND there might not seem to be even a slight similarity between the flying of 450 pound powerless gliders and the twelve ton 2400 horsepower transports of the airlines. There are certainly plenty of differences. However, the essences of the two arts have many points in common, and the majority of these might well be considered under the heading of "Precision Flying." The purpose of precision is quite different for the two phases of piloting, since to the glider pilot it represents the success or failure of the flight, the record made or lost; while to the airline pilot, and to the airline itself, precision is safety and efficiency.

To me, precision flying connotes many things; the ability to fly an aircraft accurately on a heading and altitude, to execute a prescribed maneuver according to plan, to make a spot landing; in other words, the things which are required on any standard flight test. In addition, it includes knowledge, background and the temperamental stability to be able to make use of this mechanical proficiency. It is in this category of precision flying that I believe glider flying and training makes a sound contribution to power flying.

One of the first things that becomes apparent to the glider pilot attempting a soaring flight, is that the less he moves the stick around the cockpit, the less sink he experiences due to the reduced drag of the control surfaces. In a good strong thermal this is not so important, but in those that are barely strong enough to counteract sink, the point *is* important since it will represent the difference between descending and climbing, or in at least maintaining altitude. This careful, smooth handling of the controls which is so imperative for a successful glider flight finds practical application in transport piloting, since the additional two or three miles an hour of airspeed which can be realized by such handling can represent a saving of several thousand dollars per year per plane. Also, the value to the company in increased passenger comfort, although not easily computed in money, is nevertheless a definite asset.

In the realm of the glider pilots specialty, the thermal currents, there is a definite interest shown by the transport pilot, but again for a different purpose. The existence of thermals mean good soaring to the glider pilot, but to the airline pilot they represent a certain amount of turbulence, and a possibility of the not overly popular thunderstorms. In planning flights, all available data relative to the stability of the air, the haze level, inversions, etc., as reported by other flights or as forecast, are used to plan the flight to operate above the level of the thermal turbulence if practicable. So again, although the purposes are different, the practice which is gained through glider flying in predicting the location and severity of thermals, is useful to the airline pilot.

Thunderstorm activity, although by no means completely understood, is well enough known by the transport pilots to cause them to avoid them as much as possible, either by conducting the flight under them, over or around them. However, this is sometimes impossible to do, in bad visibility or at night, when the pilot is guided principally by the lightning in the storm. There is a great deal more research to be done in the investigation of thunderstorm activity, and I expect to see both the Soaring Society and the airlines contribute to this study. Such flights as Bob Stanley's and Shelley Charles' record flights are examples of such research in the field of gliding, and occasionally transport pilots will have similar experiences, although I cannot truthfully say that they are as gleefully recounted as is usually the case with the glider pilot.

Another type of information which the transport pilot finds useful is the nature of wind currents at the lower levels. The glider pilot has had an excellent opportunity to study this type of atmospheric disturbance by means of the oldest method of soaring: the slope current. He has learned at first hand the areas of a ridge which will produce an up-current and also the danger areas where tricky downdrafts may be expected. A knowledge of the general characteristics of slope currents is frequently useful to the airline pilots, since in rolling or mountainous terrain the slope currents are often used to aid in the climb, when the ridges lie along the course, and a favorable wind is blowing. Such ridge lift is equally useful when flying on instruments or on top, as well as when contact, the ridge lift being used to increase the indicated airspeed, since the transports are

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