SAFETY FIRST

The Gray Hair Department

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Photo: R. T. Allemann
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This report is an account of a mid-air structural failure which occurred when a pilot, not experienced in aerobatics, attempted a slow roll in a sailplane. The fact that the ship involved was a Schweizer 1-26 casts no reflection whatsoever on the 1-26. The failure was due entirely to mishandling of the controls.

It should be clearly understood that any structure, no matter how well designed or strong, can be destroyed if loads are applied in excess of the design limitations.

This report is not intended to be critical of the pilot involved, but is here published to prevent a repetition of the situation and to present the facts to all pilots, particularly 1-26 owners.

The pilot attempted a slow roll at 4,500 feet above the field. In the inverted position he attained excessive speed and corrected this by the application of forward stick deflection. When the speed was reduced, he began to roll it over, but apparently held forward stick and the speed increased rapidly, well over placard speed. The pilot did not read his airspeed, but stated that he knew it was extremely fast due to the terrific noise level. He pulled the ship out rather abruptly and experienced a very high "g" loading condition. At this point the right wing failed.

The pilot experienced great difficulty in bailing out due to the tight high speed spiral after failure of the wing. The chute was damaged by the wreckage and the pilot landed hard with injuries to both legs and ankles. The pilot stated that he was not in a level dive, but had some degree of spiral when he pulled out. This is the easiest way to break up almost any aircraft.

Examination of the wreckage indicated a combined bending and torsion failure due to application of high "g" forces with the right aileron deflected down. The left wing landed intact with the fuselage and inner portion of the right wing. The left wing showed clear indications of having been subjected to high negative "g" loads in some part of the maneuvers, but sustained no failure in flight.

Conclusions from the pilot's account, reports of some previous cases of overspeeding and calculations to check the speed indicate that the pullout was made in the range of 150 to 180 miles per hour. The 1-26 redline is 104 miles per hour. At such speeds the controls must be handled with caution, to say the least. The 1-26 is designed to exceed the FAA requirements and, if properly used, will give the pilot a high degree of safety. But it cannot be emphasized too strongly that any aircraft must be operated within its structural limits. There are no specific rules against aerobatics in the 1-26, but as in any clean aircraft, care must be exercised to stay within the speed and structural limits if the pilot insists on doing such maneuvers. This is also true of instrument flight where any but skilled pilots may get into trouble.

The above report was received from the Schweizer Aircraft Co., designers and builders of the 1-26. It should be noted that this is the first in-flight structural failure of a Schweizer sailplane from any cause what-so-ever, since 1943, when an Air Force TG-3 suffered a similar type of failure from the same cause.

In the opinion of the Safety Committee this is an outstanding record of safety and speaks highly for the structural integrity of Schweizer sailplanes.

CALENDAR

Items listed in bold face type are to be sanctioned by SSA.

Jan. 28-29. SSA Directors' Meeting, Dallas, Texas.

Sept. 2-4, 1961. First Annual Great Plains Soaring Contest, location to be announced. Sponsored by the Kansas Soaring Association.

BIBLIOGRAPHY ON SOARING

Recent articles or items on soaring which have appeared in non-soaring publications.

Science, July 22, 1960, p. 191. "Biophysics of Bird Flight," by the late Dr. August Raspet, as published in *Soaring* for August, 1960.

Tuby Tales, Jul.-Aug., 1960, p. 3. "Look, Mom — No Motor!" Published by Ohio Seamless Tube, Shelby, Ohio. A 3 page spread of 11 photos and story on soaring.