

A SURVEY of Glider Accidents

Calendar Years 1938, 1939 and 1940

During the years 1938, 1939, and 1940, forty-six glider accidents were reported to the Safety Bureau. Of these forty-six, 16 were fatal, 10 were serious, and 20 involved minor or no injury, as will be noted in Table I. The most significant fact shown in this table is the high percentage of fatal and serious injury in relation to the number of minor and no injury accidents. This figure is out of proportion in comparison to accidents involving powered aircraft.

It should also be noted that the percentage of glider accidents shows a considerable increase in 1940 over the previous years. Of all gliders, 5.6% were involved in fatal accidents in 1940. This is an extremely high percentage. In the case of non-air carrier aircraft, only 1.6% were involved in fatal accidents in 1940.

TABLE I
Class of Injury

	Fatal	%	Serious	%	Minor	%	No Injury	%	Total	%
1938	6	2.7	1	0.45	1	0.45	4	1.8	12	5.4
1939	2	.9	3	1.4	4	1.8	2	.9	11	5.0
1940	8	5.6	6	4.2	1	.7	8	5.6	23	16.1
Total	16	2.7	10	1.7	6	4.2	14	2.4	46	7.9

*Percent of all gliders of record at the close of the year noted.

The low value of antiquated ships causes the owners to accept minor damage as wash out, while owners of power aircraft are inclined to repair anything left with a number on it and minimize the extent of damage.

Table II shows the accidents broken down by damage to the gliders. Here we see that washout damage accounted for 17, while overhaul damage accounted for 14, major assembly damage for 13, and minor damage for only 2. Here again, the percentage of severe damage was very high, indicating that glider accidents tend to be considerably more serious than airplane accidents.

TABLE II
Class of Damage

	Washout	Overhaul	Major Assembly	Minor	Total
1938	5	3	4	..	12
1939	3	5	3	..	11
1940	9	6	6	2	23
Total	17	14	13	2	46

In Table III, we have broken down the accidents by the type of pilot certificate. The most significant fact to be learned from this table is that the uncertificated pilots, who accounted for 13 accidents, had only one minor or no injury accident; the other 12 were either fatal or serious! It is true that two of these pilots held aircraft certificates. However, one of these was known to have had no previous glider flying whatsoever, and the other is believed to have had none.

In order to receive a glider certificate, the pilot must demonstrate his ability to handle the glider and must pass a written examination. It seems apparent that this pro-

duces a pilot of better ability. However, since it is impossible to determine the number of uncertificated glider pilots, we cannot accurately compare the safety of the certificated and the uncertificated pilots.

Comment. "It is reasonable to assume that a Commercial pilot puts in more flying time than other pilots and that some of his time is instructing. In Table III it is worth while noting that as the pilots grading increased the seriousness of accidents decreased."

TABLE III
Class of Injury

Type of License	1938	1939	1940	Total	1938	1939	1940	Total
Uncertificated	4	1	4*	9	1	1	1	3
Student	1	1	2	4	..	1	5	6
Glider Private	1	..	2	3	..	1	..	1
Glider Commercial	..	..	..	..	..	..	..	..
Total	6	2	8	16	1	3	6	10

	1938	1939	1940	Total	Grand Total
Uncertificated	..	1	..	1	13
Student	2	2	5	9	19
Glider Private	2	2	2	6	10
Glider Commercial	1	1	2	4	4
Total	5	6	9	20	46

*Includes two certificated airplane pilots who held no glider certificates.

In Table IV we note that, as is true of powered aircraft, spin-and-stall accidents account for a very high proportion of fatal and serious accidents. Fifteen of these spin-and-stall accidents were either fatal or serious, and only two resulted in minor injury.

TABLE IV
Class of Injury

Nature	1938	1939	1940	Total	1938	1939	1940	Total
Landing	..	..	1(b)	1	..	1	..	1
Take-Off	..	..	1(c)	1	..	..	..	..
Spin-Stall	5	..	3	8	..	..	..	..
Structural Failure	..	..	1(d)	1	..	..	..	..
Collision (Aircraft)	..	..	1	1	..	..	..	..
(a) Collision (Objects)	1	1	..	2	..	1	..	1
Other	..	..	1(f)	1(g)	1(h)	..	..	1
Total	6	2	8	16	1	3	6	10

*Failed to release tow cable.

	1938	1939	1940	Total	Grand Total
Landing	3	..	6	9	11
Take-Off	..	..	1	1	2
Spin-Stall	2	..	2	4	17
Structural Failure	..	..	1	1(e)	2
Collision (Aircraft)	..	..	..	..	1
(a) Collision (Objects)	2	3	1	6	9
Other	1	..	..	1	4
Total	6	5	9	20	46