

of 8.6 percent, the Southeast and Midwest lag behind and the Southwest leads with an increase of over 15 percent in active glider ratings.

Some tentative inferences can be drawn from this set of details on recent periods:

- There was a dramatic 37 percent net increase in glider pilot ratings in force over the three-year period 1961-1963, probably unmatched in any previous period. This is coupled with a steady growth in the glider rated proportion of total pilots over a ten year period.

- Ab initio training in gliders supplied less than one-fourth of the three-year gain; additional ratings for power pilots, over three-fourths.

- A very high proportion of the gain in ratings, 54.2 percent, was in Commercial glider as an additional rating for Commercial power pilots—a group authorized by regulations (3) if not necessarily qualified by experience, to give instruction in gliders. Over 57 percent of all glider ratings in force are at the Commercial level.

- A more rapid increase in median age is evident for glider-only pilots than for Private and Commercial pilots generally over a seven-year period.

- The gain-to-loss ratio for glider ratings in the last three-year period was nine to at least two.

From these landmarks it is hoped that continuing analysis of the soaring movement as a flight activity and an aviation market can be pursued.

Notes:

1. The renewal system for pilot certificates proposed by the F.A.A. recently would require reports of recency of aeronautical experience as a condition of renewal. This would make it possible to remedy the ambiguity present in these reports which show, as of the end of 1963, a total of 1,286 pilots who hold glider ratings in combination with one or more power categories, but who did not hold a current medical certificate. A few of these pilots are known to be active glider pilots but it is unlikely that very many are.

2. The assistance of the Data Systems Division of the Office of Management Services of the Federal Aviation Agency in supplying data in the form of worksheets from unpublished tabular reports is gratefully acknowledged.

3. F.A.A. Draft Release 64-18 proposes to end this privilege, but to allow Commercial glider pilots now actively instructing to obtain a glider instructor certificate under a "grandfather clause."

Timely Tips Nickel-Cadmium Batteries

by Dale S. May

In the past few months I had an education in electrical sources for gyros. Consensus of advice from "experts" was nickel-cads.

My gages draw a hair under two amperes and I was interested in at least a three-hour supply of electrical current. One source offered two sets of NC batteries, two hours capacity each for \$100. Another source wanted \$155 for a 12 amp-hour battery weighing 12 pounds. One pilot was using a 22 pound aircraft battery.

For what it is worth, I obtained a 12-volt Japanese Yuasa motorcycle battery that gives 10 ampere-hours. Total weight, wet, is 8.75 pounds. The model number is MBJ4-12 and Honda motorcycle agencies carry it as No. 724801. Dimensions are 7-3/8"x2-19/32"x4-1/2". They are non-spillable and the case is transparent, easy to see electrolyte level. Charging is simple and can be done with any normal 12-volt, 6 ampere or less auto charger with a variable resistor in series (positive wire), cutting ampere charging rate to 1.2 amps or less. Takes less than eight hours to fully charge. Total cost slightly over \$14.

I am working on a semi-insulated battery box with the transistorized P/S mounted beneath it for some heating during high altitude flights.

Yuasa also has a 9 ampere-hour model, No. MBW3-12A (Hondo B724801A) 12 volt battery weighing two pounds less and measuring 5 1/2"x3"x5 1/2". Cost is a little less.

Open voltage (fully charged) of the 10 ampere-hour model gave 13.5 volts. Under load it was 12.5 volts. Three hours later the battery read a hair under 11.5 volts. Either model should give four to five hours of acceptable continuous operation.



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