

GOLD ALTITUDE GAIN FLIGHT REPORT—

Date: April 14, 1963—Location: Westminster, Md.—Airport elev.: 780' asl.

Pilot: Mario Piccagli — Aircraft: Italian M 100 S, ser. no. 33, register. I-MIOO.

Meteorology: High pressure blanketing entire continental U.S. with large ridge north to south across central states from Canadian border to Gulf of Mexico. At Westminster at noon on April 14th pressure was about 1010 mb, wind 20 to 25 knots, 290°. A later check of the rayob chart showed the lapse rate to have been practically dry adiabatic from ground level to 11,500', where a shallow inversion occurred.

Take-off was at 12:17 P.M., Mr. Eli Caicuts of MASA being tow pilot. Released at 2000' over airport, or 2780' asl, in strong thermal indicating 3 to 4 m/sec. on total energy vario. Ceiling of lift was about 7500', rather ill-defined. No condensation, except for two very small lenticular-type clouds over the ridges about 25 miles NW of airport. These disappeared shortly thereafter. Drift was quite strong and as flight was not intended to be cross-country a glide into wind was started continuing until about 5 mi. upwind of field without finding workable lift.

Dr. Mario Piccagli with his Aliante M-100S Standard Class sailplane. Two more are on order by Americans and the manufacturer has applied for an ATC with FAA. Of all-wood construction, it features very quick assembly and airbrakes of rotating disks. It has been selected as the Italian standard single-seater; 43 have been delivered and another 29 are under construction. Basic specifications are as follows: span, 49 ft. 2 in.; wing area, 141 sq. ft.; aspect ratio, 17.1; empty wt., 441 lb.; gross wt., 694 lb.; wing loading, 4.9 lb./sq. ft.; and max. L/D, 30.

Photo by Jack Perine



At this point altitude was 2000' above airport elevation and search for lift continued while heading back to airport. A low point of 800' above airport elevation, or 1580' asl., was reached as a thermal was located and centered at the moment of setting up a downwind leg to land back at airport. This and a successive thermal allowed 7500' to be reached and the flight was continued in a succession of climbing drifts and windward glides for the next two hours. The sky continued clear, no condensation forming.

The easy achievement of 9500' asl shortly before 3:00 P.M. confirmed the possibility of attaining Gold badge altitude gain and an active search for high lift was then started. Shortly thereafter, small, thin patches of condensation began forming a few miles east of Westminster. The first of these was reached at 3:10 P.M. and lift under it used to reach base at 10,800' asl. These patches of condensation, so thin as not to be completely opaque, continued to form during the next two hours in a stationary line approximately from York, Pa., to Pikesville, Md., quite parallel to and about 40 miles downwind of the Catoclin-South Mountain ridges. While lift

under this line of condensation was definitely thermal in nature, its layout and the fact that it reached about 2000' higher than the top of thermals elsewhere in the area (with the sky remaining clear practically everywhere else) indicated to the writer that there may have occurred a localized boosting of convection under a secondary wave harmonic.

After reaching 11,000' asl at about 3:15, the flight was continued for one and one-half hours above 10,000' in an effort to reach the altitude of approximately 11,400' required for the attainment of Gold badge altitude gain in view of the earlier low point of 1580'. The effort consisted of flying up- and downwind under the line of condensation in the event its base would rise, and also of flying at high speed in lift under the base and chandelling between condensation puffs. The shallow development of condensation would probably not have allowed more than an additional gain of 50 to 100' by circling into cloud, and in any event this would not have been feasible as an incomplete panel was fitted, with no gyros installed. During this period discomfort from cold was experienced, especially at the feet, in spite of boots over two pairs of ski woolen socks. Outside temperature was -17°C, and wide patches of thin frost occurred intermittently on the inside of the canopy.

At 4:20 P.M. it became apparent that the condensation base was lifting and condensation masses becoming more substantial. The more conspicuous one was reached at 4:30 and two passes made skirting its base at about 80 mph, followed by sharp climbs almost to stall on the far side. Cloud base was 11,500' and both climbs yielded identical maximum points of 11,630' asl, for a gain of 10,050'.

Gold altitude gain thus having been obtained with a reasonable margin to allow for possible barograph inaccuracies and the cold having become unbearable, a course was set for Westminster, about 20 miles to the NW, at about 100 mph indicated. Some 6000' of altitude remained to be spoiled away in dive brake tests to make a quick landing at 4:53 P.M., and a welcome thaw-out.

(Editor's note: Although Gold altitude gains have been made in the East in waves clear of clouds it is