

HIGH FLIGHT

by DUKE MANCUSO

SECOND OF TWO PARTS

(Last month, the author described his personal wave soaring program for the 1958 and 1959 seasons. Now he presents a . . .)

DETAILED ACCOUNT OF WAVE FLIGHT

On May 18, 1959, a height of 37,500 feet ASL was reached over the city of Mojave, California, in the Lee Wave of the Tehachapi Mountains following release at 7,130 feet ASL. This exceeded the current World Gain Record by 270 feet but was short of the 3% necessary to establish a new record.

Northwest flows had been present at all levels over the Tehachapi Mountains on May 17th, following a weak frontal passage. A steep trough was present inland with westerly flows over the San Bernardino Mountains and southerly flows over the Imperial Valley. Conditions were not favorable for a cross-country flight; however, an anticipated eastward drift of the Pacific High presented a good possibility for strong waves over the Tehachapi's the following day, with possible record altitude conditions. On this basis, an early take-off was planned for the following morning.

On this occasion, the 172 was in for repairs and the 1-23 was disassembled, loaded and trailered to El Mirage the night of May 17. By midnight the aircraft was in take-off condition and we returned to Lancaster for a brief wait.

The morning of May 18th dawned clear and bright. Surface winds had increased in velocity throughout the night and had reached 30 knots by morning. Roll clouds were in evidence to the lee of the Tehachapi's with indications of high cirrus activity. A final weather check was made with Chief Warrant Officer Fine and Harold Kleiforth, which confirmed predictions for increasing wind velocities, and we were off for El Mirage.

The ritual of preparation was accomplished with familiar efficiency and take-off was made at 10:00 A.M. with Gus Briegleb at the controls of the PT towplane. An extra Skycrafter radio set had been installed in the towplane for the occasion. The plan called for a tow to the lee of Double

Mountain in the Tehachapi Range some sixty miles to the northwest. A series of passes were to be made starting at a low altitude and continuing upward in increments until workable wave lift was encountered. This procedure was to be used in order to obtain the lowest possible release altitude.

The tow proceeded along a straight line toward Double Mountain at an altitude of approximately 6,000 feet ASL. Occasional chit-chat with Gus helped break the monotony. High lenticulars were now in evidence downwind of Double Mountain.

Our upwind turn into Double Mountain was made near the town of Willow Springs and shortly thereafter, moderate turbulence was encountered. The flight progressed toward the peak on a heading of 310 degrees magnetic and strong wave lift was encountered over the aqueduct some eight miles from the peak. Plans to explore the lower limits of the lift were completely abandoned and release was made on the first pass at an altitude of 7,130 feet ASL at 10:40 PST.

A slow climb ensued to 13,000 feet ASL. This appeared to be the limit of the wave. I was somewhat confused by the presence of high lenticulars and was considering the possibility of another wave ahead when Gus' voice came over the radio. He had proceeded ahead after release

and reported strong lift near the crest of Double Mountain. This was all the encouragement needed, and I proceeded at top speed toward Double Mountain.

The primary wave was encountered at approximately 9,000 feet ASL at 11:05 PST. Initial lift averaged 700 fpm. This fell to zero at 18,000 feet ASL. Earlier signs of lenticular action had disappeared and assuming activity had temporarily subsided, I decided to wait in the area. The buildup and subsidence of the Lee Wave had been evidenced on a number of past flights. This build-up and decay in wave lift is somewhat similar to that of a thermal.

The waiting game lasted one and one-half hours when steady 100 to 150 fpm lift developed. Altitude increased slowly and 23,000 feet ASL was reached at 1235 PST. This appeared, again, to be the limit of the lift. All signs of lenticulars overhead had completely disappeared.

The sky over Mojave some ten miles to the northeast showed signs of lenticular activity. A closer inspection of the area revealed increasing activity with more of the sky becoming covered with lenticulars. My secure point above Double Mountain was abandoned and I proceeded at top speed toward Mojave.

Progress crosswind was slow. The lenticular developments ahead were now growing at a fantastic rate, spreading crosswind and downwind, and adding layers above one another. The lift area was reached at 20,000 feet ASL at 1300 PST. A tremendous surge was encountered and my climb rate leaped to 2500 fpm and then steadied down on 1,500 fpm.

View looking north from Lancaster, Calif., toward Mojave. Photo was taken approximately one hour after landing and shows the tremendous size of the lenticular Duke had flown above on his flight to 37,500 ft.

