

be lucky to reach 25,000 feet today. George was taking pictures of the large lenticulars to the north of us. By rolling back the canopy of the rear cockpit, pictures could be snapped without looking through the plexiglass.

We passed under the roll cloud at 11,000 feet where the turbulence was strong and I had trouble writing down the temperatures on a pad of paper. As we flew out under the stationary cloud, the lift could be felt and at 11,500 feet above sea level, with the variometer reading 1,000 feet per minute up, we released. By flying directly into the wind the rate of climb increased to 1500 feet per minute, which was the maximum for the flight. At 13,000 feet we put on our masks and checked the oxygen system to see if everything was working properly.

We soared up between the Sierra Mountains and the roll cloud, which had its base at 13,000 feet and its top at 18,000 feet above sea level. Upon reaching 22,000 feet the climb slowly dropped to zero and I then noticed we had drifted back over the stationary roll cloud, due to an increase in the wind velocity with altitude. By heading directly into the wind and increasing the speed to 60 miles per hour, we were able to make headway over the ground and regain the lift zone, where we soon climbed to 27,000 feet.

During the climb George was taking pictures in color of several towering roll clouds with lenticular tops, about 75 miles to the north of us. Since the lift weakened at this point, I looked longingly at them, but abandoned the idea due to the late hour. About 25 miles to the south, toward Mt. Whitney, the roll cloud looked good, but there was not a lenticular in sight. Knowing that other pilots had reached their maximum altitude in the area, we made a run in that direction. We lost 2,000 feet in the twenty-five miles, but soon found the lift between the roll cloud and the mountains. Our climb was 200 to 400 feet per minute up to 28,000 feet, where it slowed almost to zero again, due to drifting back over the roll cloud. By increasing the speed we slowly moved against the wind and regained our original position.

Every thousand feet I jotted down the outside air temperature and by removing my mask was able to check with George as to his physical condition, oxygen pressure, etc. The only thing I could get out of him was "Everything is fine, let her rip."

Since there was no official national or international two-place absolute altitude record, I decided 28,000 feet would be good enough to apply for. But with the climb continuing at a good rate, it suddenly dawned upon me that we might exceed some of the old records.

As we soared past the old record altitudes, I called them off to George. First there was Fred Walters' National Record of 18,100 feet gained which we passed at 29,600 above sea level. At 30,000 feet the lift started to increase and we reached 500 to 800 feet per

minute up, so that we soon passed Guy Rousset and Leon Faivre's record of 22,244 feet gained, made in France.

At 35,000 I asked George if he would like to take a picture and believe it or not, he opened the rear canopy with an outside air temperature of -53 degrees centigrade and took a shot of the three towering lenticular clouds which were still above our level. He said later that he could not hear the shutter click and wondered if the cold had frozen the camera.

By now the canopy was frosted over, but never heavily enough that we could not see out. The double glass was clear as far as I could tell, but when I rubbed my glove over it a thin layer of frost was present. Our feet and hands began to get cold, and with the sun almost down, very little heat was absorbed through the canopy.

As we climbed higher the wind seemed to slacken and I flew at 42 miles per hour indicated, but we still gained into the wind. The trim tabs were frozen, and only when it became necessary to move the rudder a considerable amount, did I realize that it was partially frozen also. The air suddenly became very gusty and it was hard to tell just where the lift area was located. I seemed to pass through the wave since considerable sink was indicated, but upon turning back the wave seemed to have disappeared. By heading back into the wind I tried gust soaring each time one struck the ship and using this method was able to reach 36,100 feet indicated above sea level.

My feet started to pain and I told George we might get frost bitten toes. He agreed that his feet were cold also. The thin air made it almost impossible to talk to the rear cockpit and next time I hope to have an inter-communication system installed. The effort required to hold the ship level, with controls very stiff from the cold, was almost more than I

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Harland Ross and George Deibert in their specially equipped TG-3 prior to flight to 36,100 feet ASL.