

WEATHER DURING THE 33RD

As the stage was being set for the 33rd U. S. National Soaring Contest the weather pattern was establishing itself in such a manner to give full support to the event. Late in June a trough of low pressure aloft was beginning to develop over the eastern Pacific, and by June 28th, the opening day of the contest, the trough was well developed, establishing a relatively strong southwesterly flow across the Sierra Nevada Mountains and the contest area—a very promising condition for the contestants. At the same time a high-pressure cell was situated over the southwestern United States bringing in a moist flow of air from the Gulf of Mexico across Texas, New Mexico, and northward over western Nevada. This resulted in a convergence zone between the moist flow of air from the south and the drier air which had crossed the Sierras.



Meteorologists Claire Jensen and John Marsh get an assist with an early morning chore from Sylvia Colton.

On the first day of the contest this convergence zone lay in a line which extended from south of Walker Lake north-northeastward to Lovelock, Nevada. Forecast conditions for the route from Stead AFB to Hawthorne, Nevada—the task route—called for scattered towering cumulus with isolated cumulonimbus along the convergence zone, strong westerly surface winds over the route, and strong thermals with tops to 16,500 feet. The forecast compared favorably with the actual conditions. The towering cumulus overdeveloped near the turnpoint and the pilots encountered some rather unexpected weather conditions—hail, sleet, snow, rain, and icing. In spite of this, however, the pilots treated the meteorological

staff with a great deal of kindness. At least no tomatoes were thrown during briefing the following morning!

A weak cold front moved through the area during the first night, but by the next morning the skies were again clear. The pressure gradient had relaxed somewhat behind the front and consequently the surface winds remained light during the second day—quite a contrast to the gusty 20-30 knot winds which prevailed every other afternoon of the meet. The convergence zone was still present the second day; however it had moved eastward about 50 miles during the preceding 24 hours. The air was slightly cooler with the passage of the cold front; consequently the forecast was for weaker and more shallow thermals extending to 14,000 feet. The winds aloft were forecast to be westerly over the task route and vary from 15 knots at 7,000 feet to 35 knots at 25,000 feet. The actual velocities were somewhat stronger than forecast, and by mid-afternoon Sierra Mountain wave conditions developed.

During the third and fourth days the weather pattern remained about status quo except for gradual deepening of the trough aloft and a slight increase in the southwesterly flow over the Sierras. The resulting wave action was discovered by many of the pilots and was used to good advantage. A non-contestant also found the wave and soared to 30,200 feet for a Diamond-altitude gain. He was still climbing at 700 fpm when he called it off.

By the fifth day of the contest the trough moved eastward, and by then the low-pressure center was situated over northwestern Oregon with the trough line extending southward over California. The pressure gradient in the trough had tightened considerably which resulted in a west to southwest flow of 60 knots at 15,000 feet over the contest site. Velocities of 100 knots existed at the 30,000 foot level. It was quite obvious that this should be the free-distance day, and even more obvious at the end of the day. The average distance of 270 miles flown by the 55 pilots, with the longest flight being 456 miles, confirmed this idea.

By the start of the second week the weather pattern was again making some rather important changes which may not have been very obvious to the contestants, especially those new to the area. Had the trough aloft moved eastward, a strong northwesterly flow would have developed and virtually all wave action would have been wiped out. However, a new low-pressure center developed over the eastern Pacific which caused the trough to retrograde westward. The important thing here, of course, is that a wave producing southwesterly flow was re-established, and this condition persisted for the duration of the contest.

In summary, the weather pattern for this contest was what most soaring enthusiasts would probably term incredible. The fact that a southwesterly flow aloft persisted over the contest area was rather phenomenal in itself, but to mix it with a variety of thermal activity, convergence zones, wave conditions, and a minimum of cloudiness was even more remarkable. It is doubtful that anyone having anything to do with the 33rd U. S. National Soaring Contest can deny that the weather did anything but cooperate.

—CLAIRE JENSEN and JOHN MARSH



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