

CVO EVENTS FOR 990829 - SUNDAY.

Early morning in CVO started with overcast and light drizzle. Cloud layer broke over the coastal range. Sat images show multiple layers in a wide band, ending abruptly to the W, along perhaps the 130°W latitude. NPT profiles shows cooling aloft, with no inversion evident up to 1000 m. All this seems to indicate that there is no well-defined marine boundary layer. Slight indication that to the S of Cape Blanco some low clouds or fog may exist.

FLIGHT – 16:50Z T/O; 19:58 L/D. Crew: Hoshor, Vali, Haimov

Cloud base on climbout at 1600', 14°C, 110 cm⁻³. Break in cloud at 5000', back in cloud at 7400'. Neither bases nor tops very distinct.

Under very thin, broken Ac at 12000' – no detectable reflectivity from them. Clod top rose to 12000' level on approach to point T: 60 cm-3, 0.3-0.5 g m⁻³.

Winds were from the S at 8-10 m s⁻¹ above 8000', westerly in a relatively shallow layer below that, becoming northerly below about 5000'. Notable turbulence at the shear zones. Also, spots of updrafts of km dimensions noticeable by increased aircraft climb rate.

Substantial drizzle in both of the lower cloud layers. Reflectivities to +10 dBZ. The highest LWC noted was in the vicinity of 1 g m⁻³. Good visibility by 300' above the ocean surface with scud here and there. No distinct cloud base.

There are long descent and ascent paths. Also, ovals done at two levels. With echoes detectable to over 6 km range, did AVAD patterns covering the entire cloud depth.

Long pass at 10000' put us about ¾ time in cloud. Did this with turns to remain in area with blue sky above. Briefly climbed to 11000 to be nearer the highest tops.

Problems: data system restarted right after takeoff; radar data system hung due to the tape drive. Thus, no radar data beyond 19:10, and whole mission was curtailed.

Post hoc notes:

No MM5 run found for today. COAMPS 500 m cloud band resembles observed clouds (displaced to the E), but lack of cloud at 300 m is surprising. Cloud top ht . map confusing.

Cloud band shifted gradually to the east, but no other major changes evident.

Our sounding shows nearly uniform lapse rate of -6.5°C/km for sfc to 2200 m and for 2400 m to 3600 m layers, with increased stability between those layers. Saturated everywhere. Although LWC maxima >0.5 g m⁻³ were encountered for brief segments at various levels up to 1600 m, most values are <0.15 g m⁻³. Similarly, drop concentrations pulse to >70 cm⁻³, most values are < 25 cm⁻³.