## CVO EVENTS FOR 990825 - WEDNESSDAY.

Expected cloud sequence from day before to continue and for cloud to thicken overnight. Fog by Mary's peak indicated this to be the case. Early satellite images showed strongly banded structure SW-NE. As the flight revealed, weak areas were causing the bands and these appeared to increase with time. NPT profiler also showed change from strong N winds to light SW overnight; it also showed significant warming. Off the coast the low level winds were from the N, turning to S above.

**FLIGHT – 15:25Z T/O; 18:22 L/D.** Crew: Hoshor, Vali, Gill

Clouds looked patchy even from a distance. Headed to point 'T' at 10 kft and descended at that point to get a full sounding at one location.

Picked a sort of band visually. Cloud top at 43°50' / 125°00' was 600 m. Droplet concentration variable, in the vicinity of 25 $cm^{-3}$, lwc max. 0.15 g $m^{-3}$.

Clouds turned out to be quite variable. Multiple layers and patches at various altitudes. Some extending to the surface.

Did porpoising pattern, level flights near cloud top (though hard to keep track of where that was) and spirals. One set of penetrations done (in cloud patch photo'd at 1620Z) by returns to the reference point. Ovals attempted in area with distinct radar patches in bands (1640 – 1655Z).

Last sampling was in ripples seen from above (1723Z). These are weakly discernible in the radar echoes as well.

Area of Sc over land, by N Bend, overflown and wingtipped to see reflectivities. Not detectable – in contrast to clouds of much lesser density over the ocean giving good echoes.

PVM 2000 Hz recording appears to be stable.

**Post hoc:**

Main problem with today's data is huge variability in cloud tops and thicknesses. Drop spectra evidently very broad (rainbow seen frequently). Reflectivity to 0 dBZ in a few spot, mostly –5 dBZ maxima.

The significant difference with respect to yesterday morning was the warming of the BL and increased stability. The inversion height was 550 – 600 m yesterday morning, dropped to 250 – 300 m by the afternoon and increased again to near 750 m by this morning. Near-surface temperatures warmed by 1°C. Winds were northerly and increasing with height yesterday morning, shifted to light NW by the afternoon and were steady 010° at 7 m/s this morning. The 1-1/2 day sequence shows significant changes, worth exploring