

Preliminary Squawk List for flight 1897,
Flown on Saturday, 8 December 2001,
IMPROVE II CV-580 flight 7.

Instruments not mentioned as having a problem are believed to have worked satisfactorily.

OVERALL LOOK-WEATHER

This flight began as a cold front and associated, multiply-banded cloud shield approached the Oregon Coast. Some forecast timing and interpretation problems on the ground caused this flight to sample a post-frontal rainband over and near the Oregon coast rather than the actual cold front that had crossed the coastal mountains by the time the CV-580 arrived in central Oregon.

Nevertheless, good microphysical data, sans CPI, were obtained in this system prior to a brief landing at "Duck International Airport" in Eugene, OR, prior to a second flight over the Cascade Mountains. Of note were a few exceptionally large aggregates (perhaps >25 mm max dimension) noted in the post-frontal band.

OVERALL LOOK-INSTRUMENTATION

CPI was being repaired on the ground.
Hot wire LWCs did not work

1. AIRCRAFT PARAMETERS

No problems noted.

2. STATE PARAMETERS

Rosemount static temperature (tstat): Noise spikes affect data, but there were far less than on previous flights for unknown reasons. Tstat tracked the tstatr values well and were very close though a difference (Rosemount lower than the tstatr by 2 C overall on this flight). Using the correction factors developed from the rawinsonde comparison does not ameliorate this difference. An investigation of this problem is underway.

Reverse Flow Temperature: Still believed to be our most accurate temperature measurement since KWAJEX. Impacted by a few noise spikes but they are relatively minor in amplitude.

Cambridge chilled mirror dewpoint (dp): No change from previous flights. Amplitude and period of heating cooling cycles

changed during flight from not evident to a few degrees in maximum amplitude. Otherwise, reasonable values were indicated. Still appears to be our most reliable dewpoint measurement, though it tended to be above the ambient temperature while in-cloud (ice or water or both).

Ophir dewpoint (dp_o): Occasional cyclic noise that changed in amplitude and period during the flight. Spurious dewpoint values were indicated at times when the actual ambient dewpoint (measured by “dp”) went below about -25°C ; the Ophir began to “peg” at values below -50°C . This occurred during a dry slot between cloud layers.

Rosemount analog pressure transducer (pstat): Continues to exhibit spurious changes in pressure of up to several mb in per second. No noise spikes were evident.

3. Cloud Microstructure Probes

DMT Hot wire device: Did not work and had numerous noise spikes

JW Hot wire device: Did not work and had numerous noise spikes.

PMS 2-D cloud probe: Power cycled once to get it to “wake up” and then it worked extremely well for the remainder of the flight.

PMS 1-D cloud probe: Counts in clear air noted, but spectra in-cloud seemed possible and not wholly suspect.

SPEC CPI: Not installed, being repaired in conjunction with SPEC by Charlie Black. Progress was made, but it was not yet fixed.

4. AEROSOLS

Not QC-ed.