

## Flight Summary Report: AVE 2004 Mission, Data Flight #1, 29 October 2004

**Aircrew:** Bill Ehrenstrom and Brian Barnett

**Duration:** 5.4 hrs

**Takeoff:** 11:53

**Gear Up:** 11:53

**Gear Down:** 17:02

**Landing:** 17:10

**Point A:** N29.60°    W95.16°

**Point B:** N32.62°    W91.42°

**Point C:** N35.58°    W92.25°

**Point D:** N38.53°    W93.12°

### **Flight Profile:**

- We took off and immediately climbed into a low cloud layer at 2,500'.
- We continued our climb to FL 370, leveling off at 12:08. We were flying over a scattered layer.
- We arrived at Point A at 12:40, FL 370, flying over a broken/scattered low layer (~3 kft).
- At 13:09, we started a climb up, still over the broken/scattered low layer. No cirrus was present.
- We arrived at Point B at FL 450 at 13:14. We were fighting an autopilot issue, which put us very slightly off course (~5 miles).
- We leveled off at FL 570 at 13:28, still over the broken/scattered low layer.
- At 13:36, we started a descent back down to FL 370 using spoilers only.
- We arrived at Point C, FL 470, at 13:41 over a broken layer.
- We leveled off at FL 370 at 13:46. By 13:55, there was a completely solid low cloud deck beneath us, and a sizable storm off to the west.
- At 14:16, we arrived at Point D, and started a spiral up over the solid cloud deck.
- At 14:19, we leveled off at FL 420 and flew straight and level for 1 minute.
- At 14:27, we leveled off at FL 470 and flew straight and level for 1 minute.
- During the satellite overpass time, 14:28, we were just leaving FL 470 continuing the spiral.
- At 14:35, we leveled off at FL 520 and flew straight and level for 1 minute.
- At 14:42, we were at Point D, FL 570, heading back south down the track.
- At 14:55, we were over-flying the eastern edge of an anvil cloud that was somewhere in 48-kft range.
- We started back down to FL 370 at 15:01. By 15:07, we were at FL 450 over Point C, flying over a low broken layer right on the edge of the low solid layer associated with the storm.
- At 15:10, ATC forced us to level off at FL 410 for 2 minutes, then allowed us down to FL 390 for a 3 minutes. During this time, we forgot to re-engage the autopilot and drifted off track about 5 miles.
- At 15:15, we got cleared to FL 370, still over the broken layer.
- At 15:24, we started a climb back up to max altitude. By 15:40, we were at FL 480 over Point B.
- We were climbing through FL 570 at 15:48.

- At Point A, we were at FL 610 at 16:07. We then started a descent using spoilers and turned west to EFD.
- At 17:00, we flew for a few minutes in the low broken layer at 4,000’.

### **Instrument Issues:**

- **SP2** – Right after takeoff, SP2 fail light came on, then self-extinguished.
- SP2 fail light on, 11:59. SP2 – OFF, 12:02. SP2 – ON, 12:05 and fail light out.
- SP2 fail light on, 12:12. SP2 – OFF, 12:15. SP2 – ON, 12:18 and fail light out.
- SP2 fail light on, 12:24. SP2 – OFF, 12:27. SP2 – ON, 12:30 and fail light out.
- SP2 fail light on, 12:36. SP2 – OFF, 12:38. SP2 – ON, 12:41 and fail light out.
- SP2 fail light flickered then on steady. SP2 – OFF, 12:49. Left off remainder of flight.
  
- **CIMS** – Right after takeoff, CIMS fail light came on.
- CIMS – OFF, 12:00. CIMS – ON, 12:05 and fail light out.
  
- **SHIS Sound** – 13:42, fail light on. Reset, and fail light out.
- SHIS Sound fail, 13:45. Reset, and fail light out.
- SHIS Sound fail, 15:06. Reset, and fail light out.
- SHIS Sound fail, 16:14. Reset, and fail light out.
- SHIS Sound fail, 16:18. Reset, and fail light out.
- SHIS Sound fail, 16:23. Left instrument on.
  
- **CAFS** – Lower fail light flashed for 1 second, 13:48.
- Upper fail light flashed for 1 second, 13:49.
- Lower fail light flashed for 1 second, 14:26.
- Upper fail light flashed for 1 second, 14:27.
- I reset Upper and Lower per request at 14:28.
- Upper fail light flashed for 2 seconds, 15:25.
- Upper fail light flashed for 2 seconds, 15:39.
- I reset Upper and Lower per request at 15:42.
- Upper fail light flashed for 1 second, 16:16.
- Lower fail light flashed for 1 second, 16:37.