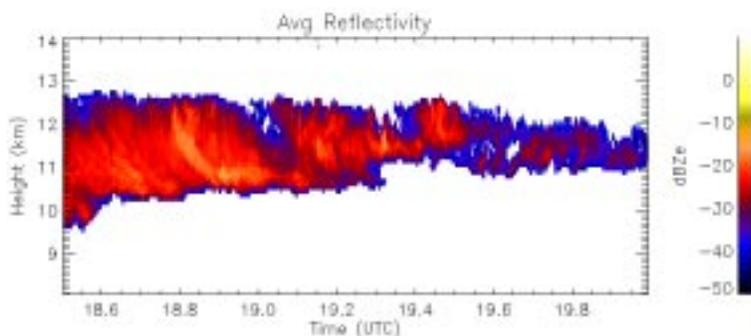


Flight Summary: WB-57F MidCiX – 19 April 2004



Top: Cirrus Layer top above cumulus over Oklahoma. Bottom: MMCR data collected during the flight from the ARM site..

Purpose of Mission: Profile subtropical cirrus over the ARM site.

General Information

Flight date – 19 April 2004

Flight description – Flight #2, MidCiX mission, ARM site cirrus

Flight duration – 5 hours

Crew – Andy Roberts and Brian Barnett

Weather Observations

- A strong subtropical jet stream cirrus plume extended over the ARM site in a southwesterly flow.
- The cirrus shield propagated slowly eastward during the course of the mission allowing the WB57 to sample a characterize a wide range of cirrus conditions.

Flight Profile

- We took off and gradually climbed to about FL 350, when we got a low oxygen light at 17:16. We had to RTB, so ATC started vectoring us back to EFD, when the problem solved itself.
- During this vectoring, we flew into cirrus at 17:20 that was thick. The sky was not visible, but clouds beneath us were visible. This was at ~FL 390. We climbed out of the clouds at 17:31.
- We tested the HF radio on the minute at 17:34, 17:35, 17:36, and 17:37.
- Flying out to the ARM Site at FL 480, we experienced very slight turbulence at 17:41 above the cirrus layer.
- We started down into the clouds at 18:28, FL 405, skimming the top of the cirrus layer.
- The top of the layer kept dropping away from us, so we kept descending to stay in the tops. At 18:41, we were at FL 382. By 18:43, we flew into a much thicker area.

- During this time, ATC vectored us all over creation as we were trying to get to the line over the ARM Site.
- We finally got to the west point on the ARM Site line at 19:00, FL 390, skimming the top of the layer.
- At 19:07, we were over the ARM Site at FL 401.
- We completed the first run (west to east) at 19:12:52 and started a turn. During the turn, I noticed a prominent halo around the sun at 19:15:00.
- We started the second pass over the ARM Site (east to west) at 19:19:00, FL 383. When we started the line, it was very thick cloud with no sky or ground visible. By 19:29, the layer had thinned out considerably to the point where both the cloud deck beneath us and the sky above were very visible.
- We finished the second line at 19:40:30.
- At this point, ATC wanted a quick descent to the bottom of the cloud deck, so the landing gear was lowered. Once at the lower altitude, ~FL 320, we headed east on the line again. When we raised the gear, the nose gear indicated that it was not fully stowed. I had to get into the emergency procedures, and was unable to take notes about what the clouds were doing around us.
- At some point east of the ARM Site, we spiraled up at 19:59:00, from ~FL 320.
- Thick clouds were noted at FL 370 and a halo around the sun was visible. No ground was visible at this time, but the sky was only slightly attenuated.
- We reached the top of the cloud layer at 20:03:00 at FL 407.
- We then returned to base to be conservative on gas, not knowing what our landing gear would do when we had to put it down again.

Flight Log

Take off	1653	Landing	2151
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Instrument Failures/Notes/Times

- The aircraft nav data recorder did not work during the flight. Nav data is unavailable.
- MMS Box: 17:59:10 – 18:01:50, IAS = 120, FL 390
- MMS Pitch: 18:19:49 – 18:20:46, Mach .675
- MMS Yaw: 18:20:55 – 18:21:40, Mach .65

Instruments flown: Full Compliment

Instruments not flown: None

Preliminary Instrument Notes:

Appears Good: MMS, CAPS, CSI, CPI, NEV, SPP, Harvard TW, Harvard WV, CLH, CIN

No Data: VIPS, JLH, 2DP/PIP

Compiled by Brian Barnett, Jay Mace