

Mission Summary
VSDR Test Flight
980917H1 Aircraft: 42RF

Scientific Crew:

Chief Scientist	Peter Dodge
Doppler Scientist	Kelly Findeisen
Cloud Physics	Eric Uhlhorn
Dropsonde Scientist	Stan Goldenberg
Workstation:	Peter Dodge
VSDR	Ivan Popstefanija Eric Torok

Aircraft Crew:

Cockpit:	CDR Ron Phillipsborn CDR Brian Taggart CAPT Phil Kenul Roc Torrey, Greg Bast
Navigator:	LCDR Dave Rathbun
Flight Director:	Stan Czyzyk
Engineers:	Jim Barr, Jorge Delgado, Dale Carpenter,
Radio:	Damon SansSouci

Mission Briefing:

Originally we had planned a short air-sea interaction and/or landfall flight in the tropical disturbance in the Gulf of Mexico that was progged to develop into a tropical storm. However early Thursday morning the disturbance still had not developed into a depression and the only convection was in rainbands near Tampa. Because the Quadrant Engineering guys were already in Tampa, we decided to ahead and do a brief flight, to test the Vertically Scanning Doppler Radar (VSDR). Areas north of 28° 45' were closed, excluding the rainbands off the Florida Panhandle, so we planned to fly out to buoy 42036 and then head south to work the rainband, including 5,6 GPS sonde drops to verify the VSDR profiles. NASA was also going to be in the area and we agreed to supply the DC-8 with a good stratiform rain position.

Mission Synopsis:

Takeoff was delayed while Sean MacMillan and Jorge Delgado worked on the cable going from the AVAPS system to the workstation. Our initial take-off at 1743 was quickly aborted when the cockpit hatch door popped open just as we began to accelerate. We taxied back and took from MacDill at 1759. Stan informed us that the flight would have to be shortened because the planes were deploying to Barbados tomorrow at 9 am. We agreed, because the only goal of this flight was to verify VSDR operation in rain. After dropping the first sonde near buoy 42036 at 1840 UTC, we spiraled down from 15,000' to 3,000', right next to a convective cell, and passed over the buoy so Ivan could calibrate the scatterometer. At 1852 we climbed back to 15,000' and headed south [the band](#), located at 26°45', 84°. Dave Rathbun passed this location to the DC-8; unfortunately this part of the rainband was perhaps not as stratiform as the NASA scientists would have liked. From 1916 to 1950 we flew legs back and forth through the rain, bouncing along, and Stan called [GPS drops in the rain](#) at 1918, 1930, and 1948. We left the rainy area at 1950 and landed back at MacDill at 2017 UTC.

Evaluation:

The main goal of the mission was accomplished: Ivan collected ~1 h of VSDR data and we collected GPS sonde data to verify the profiles.

Acknowledgements:

Pete Black provided up to the minute advice on rainband selection. Kelly and Eric kept me awake on the drive to Tampa, and Eric did all the driving in Tampa. Kelly and Eric also took notes and minded the radar and cloud physics stations. Stan Goldenberg stuck around for a measly 4 GPS drops. The AOC crew was, as usual, flexible and helpful.

Problems:

The radar system was down briefly at the beginning of the flight, 1807-1817 UTC. The workstation continued to have problems communicating with the AVAPS and ASDL computers. Only the second of 4 sondes was received in full, and none of the sondes were transmitted. Stan Goldenberg obtained floppy disks

with the raw AVAPS data.

GPS Sondes:

1	981820070	1832	at Buoy 42036
2	981820050	1918	26° 56' 84° 06'
3	981740057	1930	27° 12' 84° 04'
4	981820052	1948	27° 09' 84° 17'

Figure:

1. Representative Lower Fuselage Radar sweep: /hrd/dat/vsdr98/vsdr_lf_1910.tif.

