



NOAA Aircraft Activities FY10



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- Tail Doppler installation on G-IV
 - Radar system upgrades on P-3
 - Improved communications
 - New AXBT receivers
 - ONR DWL installation
 - Coyote low-level UAS



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1. G-IV TDR Installation:

- Factory ground acceptance tests ongoing week early October. (completed)
- G-IV scheduled to be inducted for TDR installation on 16 October 2009 (completed)
- FAA and System acceptance tests to be completed prior to WSR-10.





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2. P-3 Radar Upgrades:

- Upgrade on N42RF to be completed by mid-June 2010.
- Upgrade on N43RF to be completed by August 2010 following CalNex.
- Tail flat-plate antennae for both P-3s being acquired. Delivery date in approximately one year (Nov. 2010)



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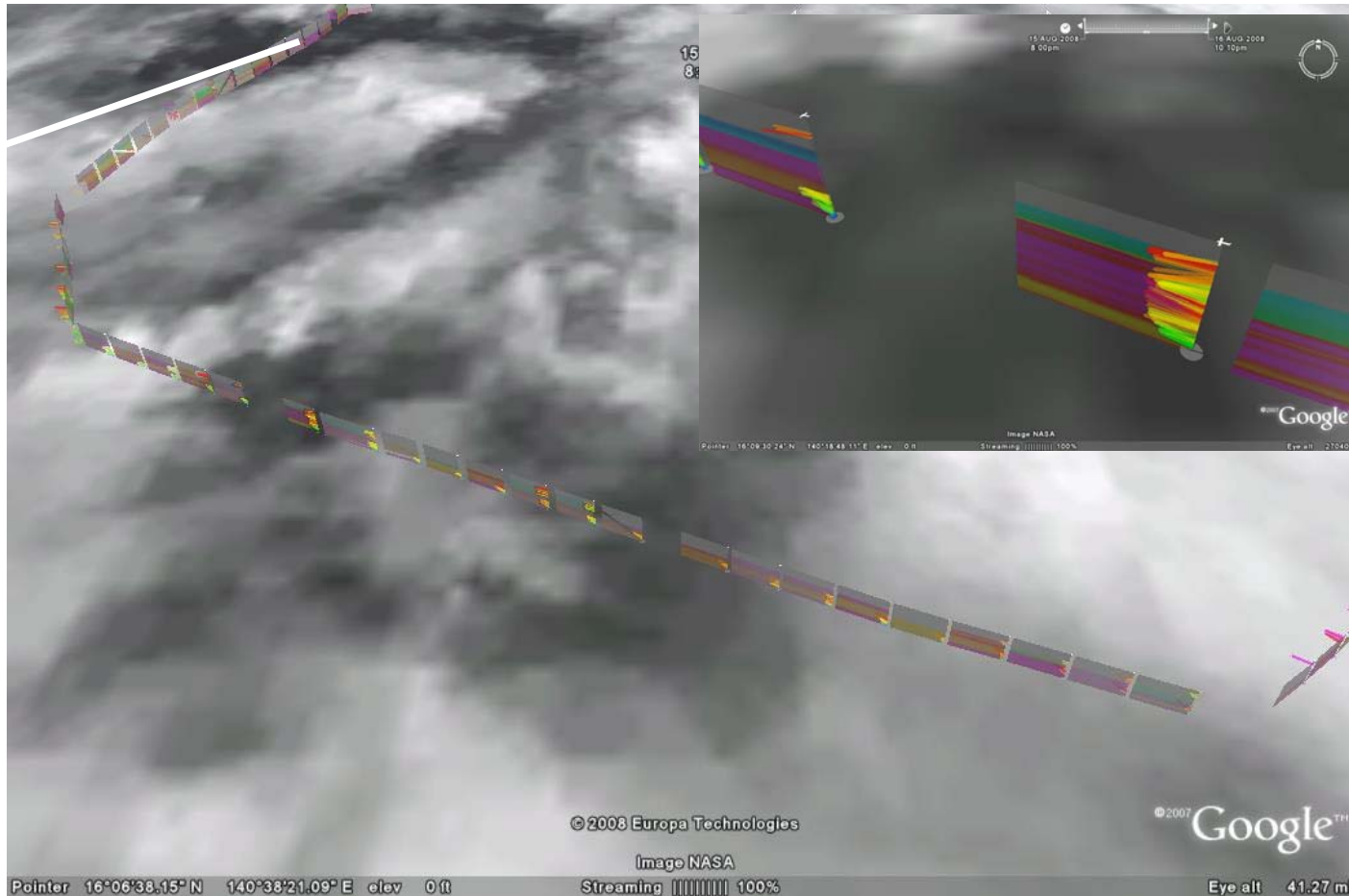
3. ONR-funded Doppler Wind Lidar:

- 1.6- μm Coherent pulse Doppler wind lidar will be installed on one P-3.
- PI is Emmitt (SWA)
- Wind profiles with 50 m vertical and 1 km horizontal resolution





Example of P3DWL data display in Google Earth



Winds are displayed in 50 meter vertical resolution wind flags;
Panel between wind profiles contains aerosol loading as function of height
Courtesy G. D. Emmitt



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4. Increased SATCOM bandwidth:
 - IMMARSAT equipment to upgrade SATCOM to broadband due in December 2009.
 - To be installed early 2010.
 5. Purchase new AXBT receivers (HFIP):
 - Receiver selection being made.
 - Acquisition to be completed in 2010.



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6. Coyote low-level UAS

Coyote Specifications

Parameter	Value (U.S.)	Value (Metric)
Maximum Gross Takeoff Weight (MGTW)	14 lbs	6.4 kg
Nominal Mission Takeoff Weight (NMTW)	12 lbs	5.4 kg
Nominal Mission Endurance	1.5 Hours	
Motor	Brushless Electric Motor	
Airspeed (Cruise @ NMTW)	50 kts	93 kph
Airspeed (Dash - level flight @ NMTW)	75 kts	140kph
Airspeed (Max. Endurance @ NMTW)	45 kts	83kph
Airspeed (Stall @ NMTW)	38 kts	70kph
Airspeed (VNE @ NMTW)	100 kts	185kph
Navigation	GPS	
Service Ceiling	25,000 feet	7,610 meters
Payload (EO)	Sony FCB-IX10A EO Camera	
Payload (IR)	BAE SCC500, Uncooled IR	
Command and Control Radio (C2)	Up to 2 Watt, Discrete/Frequency Agile, Military Band / ISM Band Radio Modem (TX/RX)	
Command and Control Radio Range	20 nm, Line of Sight (LOS)	36 km, Line of Sight (LOS)
Video Transmitter	2 Watt (optional SW), S-Band FM Video TX With Optional 19.2kbps Data Carrier	
Video Transmission Frequency Range	2.20-2.39 GHz	
Video System Range	20 nm, LOS	36 km, LOS
Payload Capacity	Up to 5 lbs	Up to 2.25 kg
Onboard Power	12V, 200Wh	
Propulsion	13x13 Foldable Propeller	



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- Safely fill existing critical low altitude data void in hurricanes
- Safely provide continuous observations of T,P,V, q below 200ft
- Fully integrate with NOAA's existing research, operational & manned aircraft assets
- Minimize cost (vs. traditional deploy/launch/recover TC LALE conon)



NOAA Aircraft Instrumentation



Instrument	Parameter		
Navigational			
INE1/2	lat, lon		
GPS1/2	lat, lon		
Honeywell HG9550 altimeter	Radar altitude		
Standard Meteorological			
Buck1101c, Edgetech Vigilant, Maycom TDL	T_d		
Rosemount temp	T, T'		
Static pressure	p		
Dynamic pressure	p'		
Horizontal wind	V_h		
Vertical wind	w		
Infrared Radiation			
Side CO ₂ radiometer	T		
AOC down radiometer	SST		
Weather Radar			
LF radar	R		
TA Doppler radar, French antenna	V, R		
Passive Microwave			
AOC SFMR/pod	V_{10}, Z		
Active Microwave			
ProSensing SRA	HS, WPS, WDS		
		Airborne Ocean Profiler	
		HRD/UM AXBT receivers (2), DAT recorders (4)	TS vs z
		AOC AXBT receivers	TS vs z
		Dropsonde Systems	
		GPS AVAPS Dropsonde-8CH	V, T, RH, p vs z
		Video Systems	
		Down video	F(%), WD
		Side, nose video	LCL
		Cloud Microphysics/Sea Spray	
		Johnson-Williams hot wire	Cloud liquid water
		King probe	Cloud liquid water
		Turbulence Systems	
		Friehe radome gust probe system	U', V', W', T'
		BAT probe	U', V', W', T'
		FAST Hygrometer	RH, q'
		LICOR-750 water vapor analyzer	q'
		On board processing	
		HRD HP-UX Workstation	Radar, TEMPDROP
		Real-time communications systems	FL, radar data
		ASDL (100 baud)	$V, T, T_d, p, PA, D, V_{10}, Z$



NOAA Aircraft Coverage

