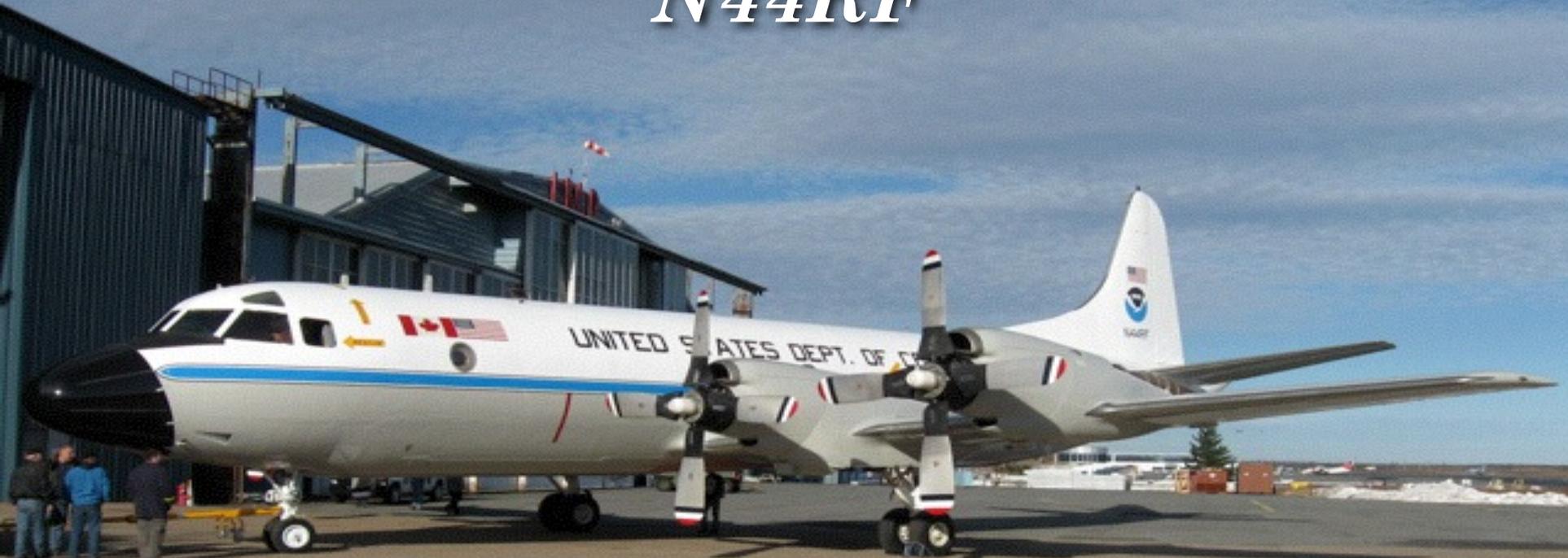


N44RF



Captain Brad Kearse, Dr. Jim McFladden,

LCDR Nancy Ash, Mr. Jim Roles

NOAA Aircraft Operations Center



Office of Marine and Aviation Operations

*The History Behind
the Acquisition
of
NOAA's Third P-3*





WP-3D ORION





**Why hurricane forecasters
may be getting it wrong**

Don't miss this revealing 4-part series investigation into one of South Florida's most important lifelines. Because when it comes to hurricanes, what you don't know can hurt you.

BLIND EYE ■

An exclusive investigative series, starting Sunday, September 25th

The Miami Herald

*Miami
Herald*

Sunday

September
25

2005



“One of the most important forecasting tools - NOAA's two hurricane hunter turboprop planes - is sometimes unavailable when hurricanes strike. The reason: NOAA sends the planes on missions that have little to do with hurricanes. The agency says the planes “play an integral role in hurricane forecasting” and are far more advanced than the planes flown by the U.S. Air Force Reserve for hurricane reconnaissance. But during the last three hurricane seasons, they've been diverted for weeks at a time to study monsoon effects in Mexico, air quality in New England and squall lines in the Midwest.”



2006 KATRINA SUPPLEMENTAL

Replacement of Dropsondes	\$1,000K
Fuel costs	\$ 250K
Dropsonde and Rcvr. Upgrade	\$ 600K
Data Collection/Transmission Upgrade	\$1,900K
Cloud Physics System Upgrades	\$ 660K
Liq. and Total Water Sensors Upgrade	\$ 100K
Radiometric Temp. Sensor Upgrade	\$ 120K
Data System Standard. and Devel.	\$ 250K
Redesign of AVAPS	\$ 170K
High-speed LAN/ SATCOM Transmission	\$ 600K
P-3 Radar Altimeter Replacement	\$ 400K
P-3 Radar and Data System Upgrade	\$2,700K
→ P-3 Aircraft	<u>\$9,000K</u>
Medium Format Airborne Digital Camera	\$ 300K
TOTAL (before taxes)	\$18,050K
(after taxes)	\$16,373K



N44RF





N44RF



N44RF



N44RF



NOAA's Third P-3

N44RF

Integration Schedule and Utilization Possibilities



Schedule
For
System Integration
And
Modifications



Avionics/ Instrumentation Schedule

1. Avionics: January - October 2010

New cockpit displays, inertials, radios, HF antenna, collision avoidance system, radar altimeters, intercom system, C-band nose radar

2. Scientific Power Integration: Jan.- October 2010

Run scientific power to distribution points throughout aircraft



Avionics/ Instrumentation Schedule

3. Scientific Instrumentation: Feb. - Dec. 2010
Data system, AXBT, and standard meteorological measurements

4. Air Chemistry modifications: May - December 2010
Multiple wing pods, cloud physics, multiple radiometers

5. Aircraft infrastructure: May - June 2011
Interior completion, required safety gear





Avionics/ Instrumentation Schedule

6. Scientific Instrumentation: June 2012
AVAPS, SFMR, and High speed Satcom



N44RF Capabilities

Altitude: 200 to 27,000 feet

Range / Endurance: Low Alt. 2500 nm / 9.5 hrs
High Alt.. 3800 nm / 11.5 hrs

Operational Airspeed: 170 to 250+ KIAS

Scientific party: 8 persons plus crew



Aircraft Features - July, 2011

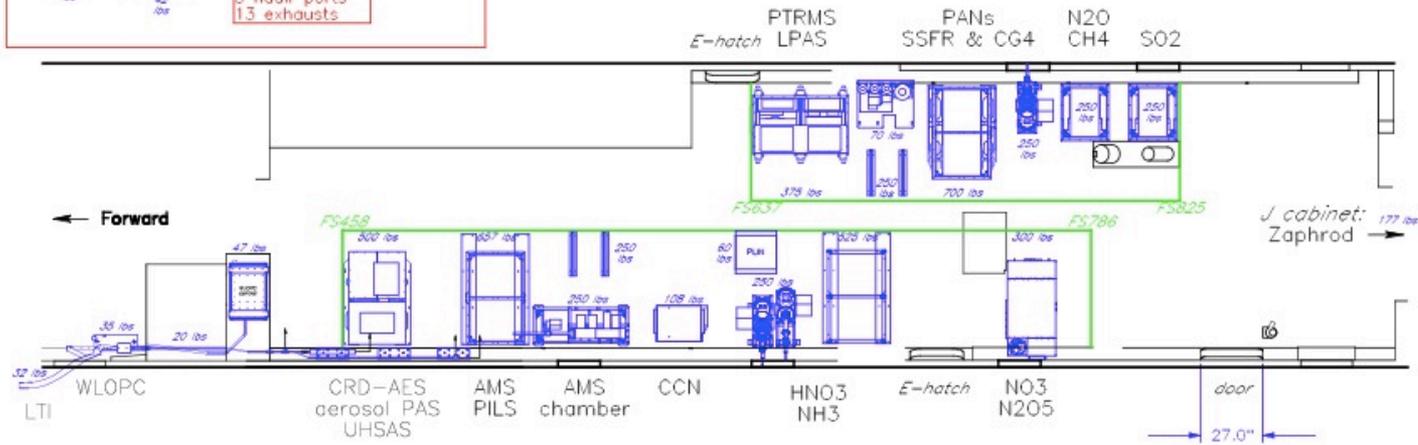
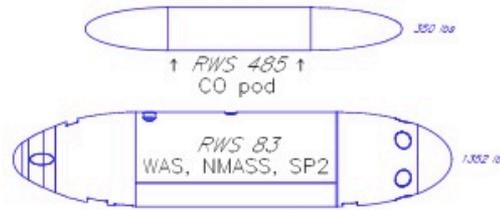
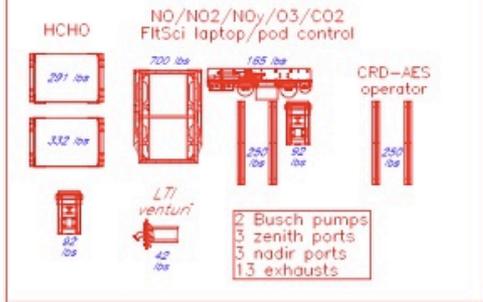
- Large floor space for user equipment
- User payload > 8000 lbs
- Power available >30KVA
- Window/ instrumentation ports
- Re-enforced floor to handle large/ heavy racks
- Wing hard points
- Standard meteorological and navigation parameters





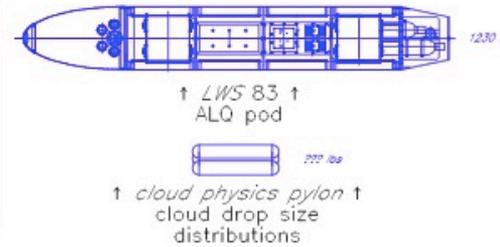
N44 with draft 2010 CSD payload

Not yet included from CSD payload



Not yet included from AOC payload:

- AOC data station (former N rack)
- AOC equipment (former F cabinet)
- Cloud Physics probes data station
- 2 life rafts
- exposure suits
- AOC toolbox
- Satcom equipment





Doppler Wind LIDAR



Possible Mission Support and Integration Requirements

Ocean Winds: install C and K_u band scatterometers
(IWRAP)





C-band

K_u-band



Possible Mission Support and Integration Requirements

Ocean Winds: install C and K_u band scatterometers (IWRAP)

Ocean Heat Content/Ocean Dynamics: install receivers for AXBTs, CP and CTD probes.

Remote Sensing: utilize bomb bay for LIDAR and digital camera instrumentation

Bomb bay pallet: applicable to multiple users, roll-on roll-off instrumentation packages. Two 1000# rated pallets.



Bomb Bay Pallet



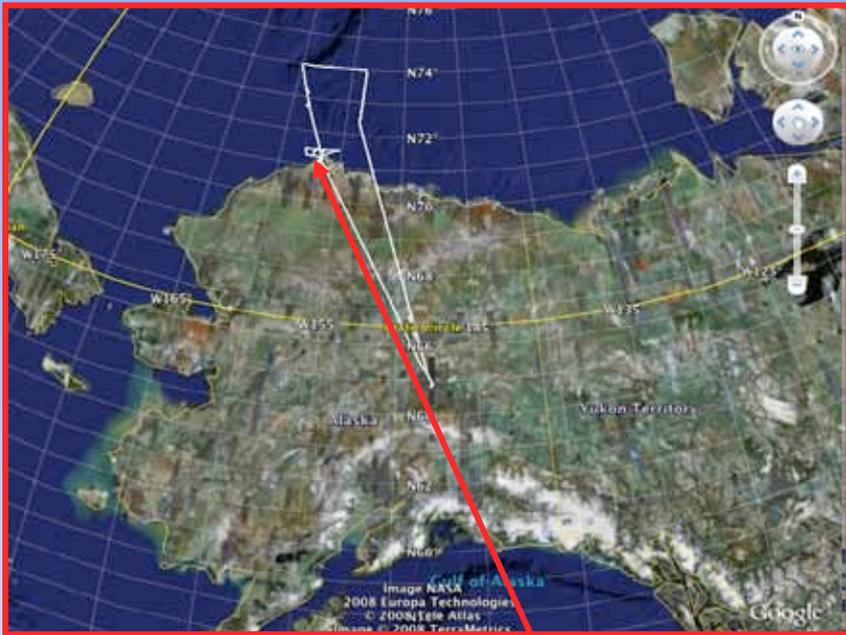
Other Program Support

- Ecosystems
- Climate
- Arctic



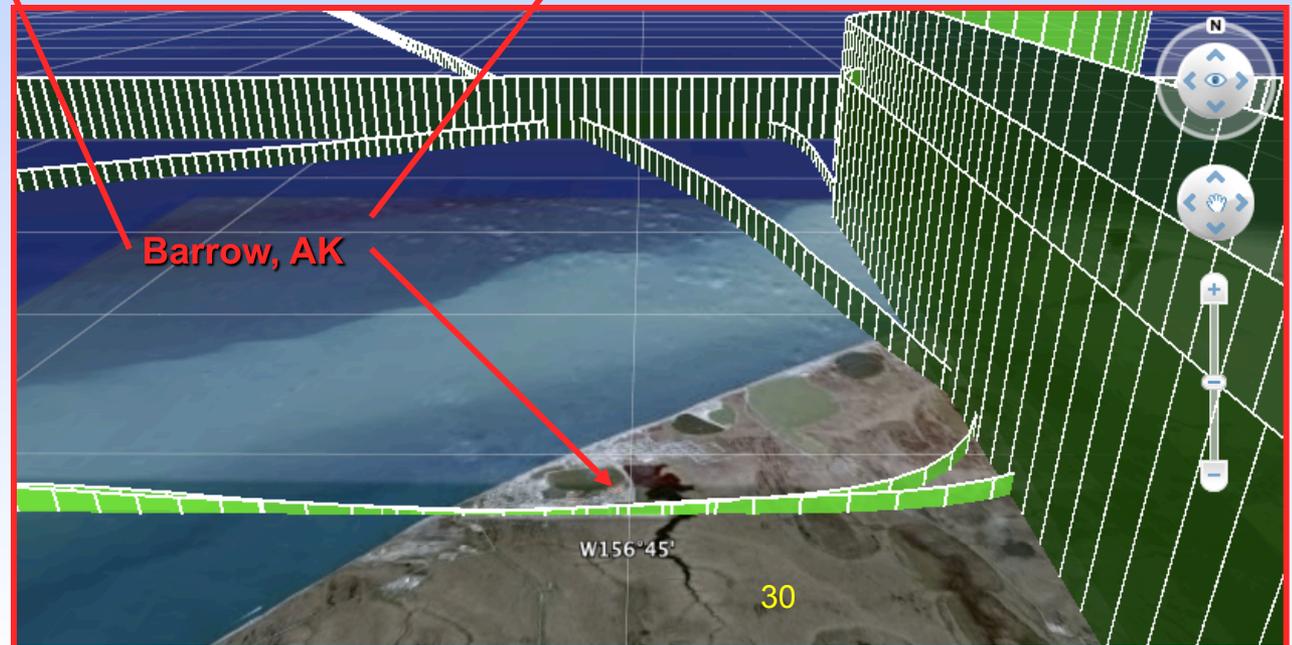
April, 2008





ARCPAC

04/19/08



Barrow, AK

W156°45'

30







Other Program Support

- Ecosystems
- Climate
- Arctic
- Weather & Water
- Sanctuaries
- Law Enforcement
- Other Joint/Shared Projects





QUESTIONS?



NOAA Aircraft Status

7 Types – 12 Aircraft



Lockheed WP-3D Orion (2)



Gulfstream Jet Prop (1)



**Rockwell Aero
Commander (2)**



Gulfstream IV-SP (G-IV) (1)



Cessna Citation II (1)



King Air 350 (1)

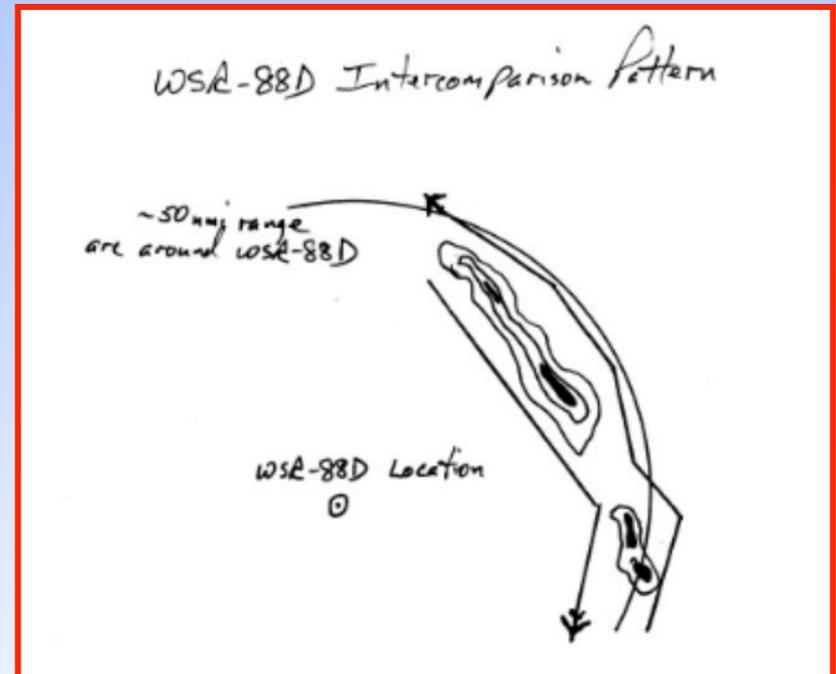
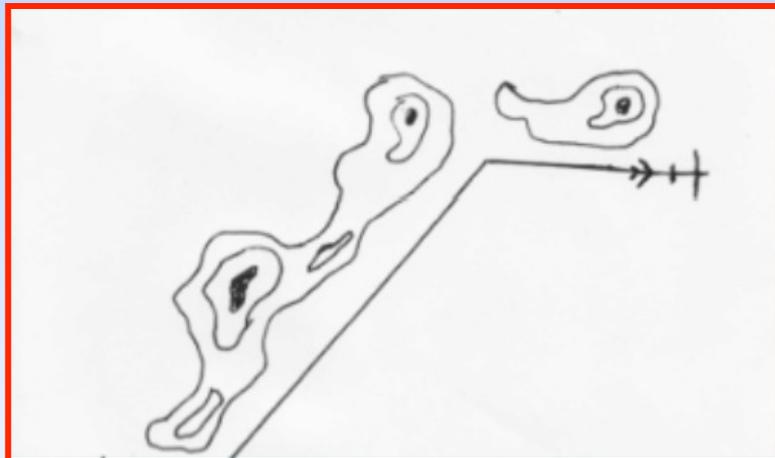
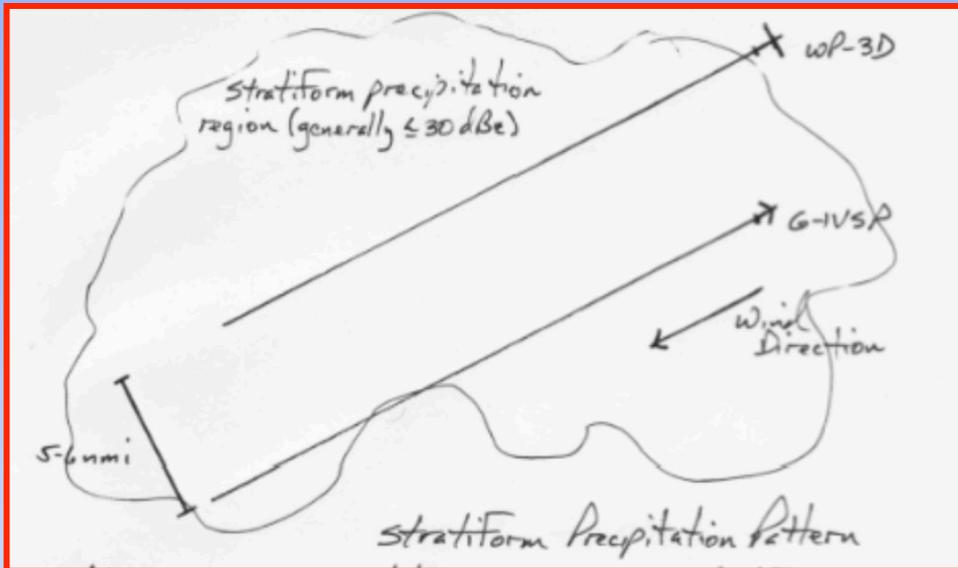


DeHavilland Twin Otter (4)



OSAT

WSR-88D Intercomparison



NOAA Aircraft Operations Center

Total Aircraft Complement = 13

Total FY10 Aircraft Operating Budget = \$22+M

Aircraft Servics Var. Costs = \$4.73M

Program Var. Costs = \$3M

