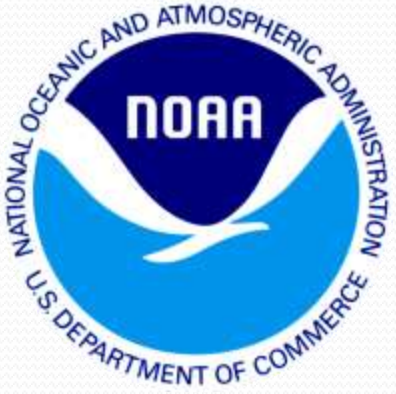


NOAA

National Oceanic and Atmospheric Administration

Brief History and Mission

- NOAA's roots date back to 1807, with the creation of the Nation’s first physical science agency, Survey of the Coast, by President Thomas Jefferson.

- Established in 1970 as NOAA under direction of President Richard Nixon with the purpose to unify the nation’s scientific efforts under one agency.

- NOAA was charged :
  - to provide scientific and technical services to other federal agencies, private sector research interests and the general public.
  - the responsibility to predict changes in the oceans, atmosphere and living marine resources.
  - to share data gathered amongst other government agencies, the research community, private industry and the general public.

NOAA Mission

- To understand and predict changes in the Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs.

NOAA Aircraft Operations Center

- 1961 - Began as the Research Flight Facility (RFF)
- 1960s thru early 1970s - the RFF's aircraft operated from Miami International Airport.
- 1983 - the Office of Aircraft Operations (OAO) was created to consolidate all of the aviation assets operated by NOAA.
- early 1990s - the OAO was designated the Aircraft Operations Center (AOC)
- 1993 - AOC moved to MacDill AFB in Tampa, Florida in January

AOC Mission

- To safely and efficiently operate NOAA aircraft, incorporate emerging data acquisition technologies, and provide a specialized professional team responsive to NOAA programs.

The Rockwell Aero Commander (AC-500S)

- aerial survey platforms
- high-resolution aerial photography
- snow water equivalent and soil moisture content measurements
- biological investigations
- sea turtle population assessments
- post-hurricane and severe flood damage assessment photography.

The Gulfstream Jet Prop Commander (AC-695A)

- National Operational Hydrologic Remote Sensing Center (NOHRSC) conducting aerial snow survey operations in the snow-affected regions of the United States and Canada.

- Data, is used by the National Weather Service (NWS)

- River Forecasting Centers (RFCs) and other agencies to forecast river levels, water flow, and potential flooding events due to snowmelt water runoff.

NOAA's newest aircraft, the Hawker Beechcraft King Air 350CER

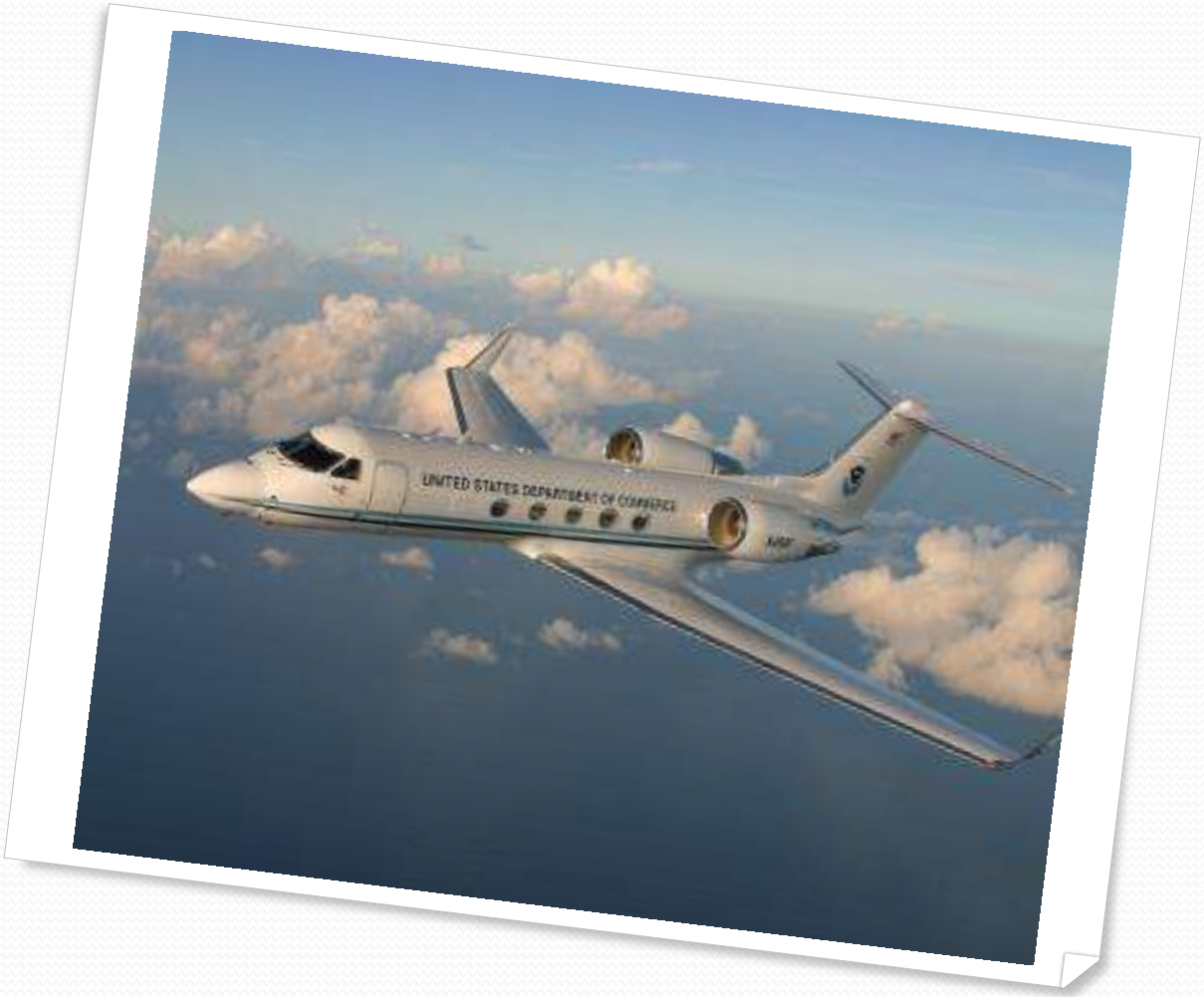
- King Air Special Mission aircraft's main feature is the two large, downward-facing sensor ports can support
- Digital cameras
- Multispectral and hyper-spectral sensors
- Topographic and bathymetric LIDAR systems.

The DeHavilland Twin Otter (DHC-6-300)

- Support's NOAA or NOAA-related missions
- Low-level slow speed aerial surveys of marine mammals
- aerial video surveys of coastal erosion
- Various remote sensing missions,
- Atmospheric air chemistry sampling
- Atmospheric eddy flux and concentration gradient assessments.

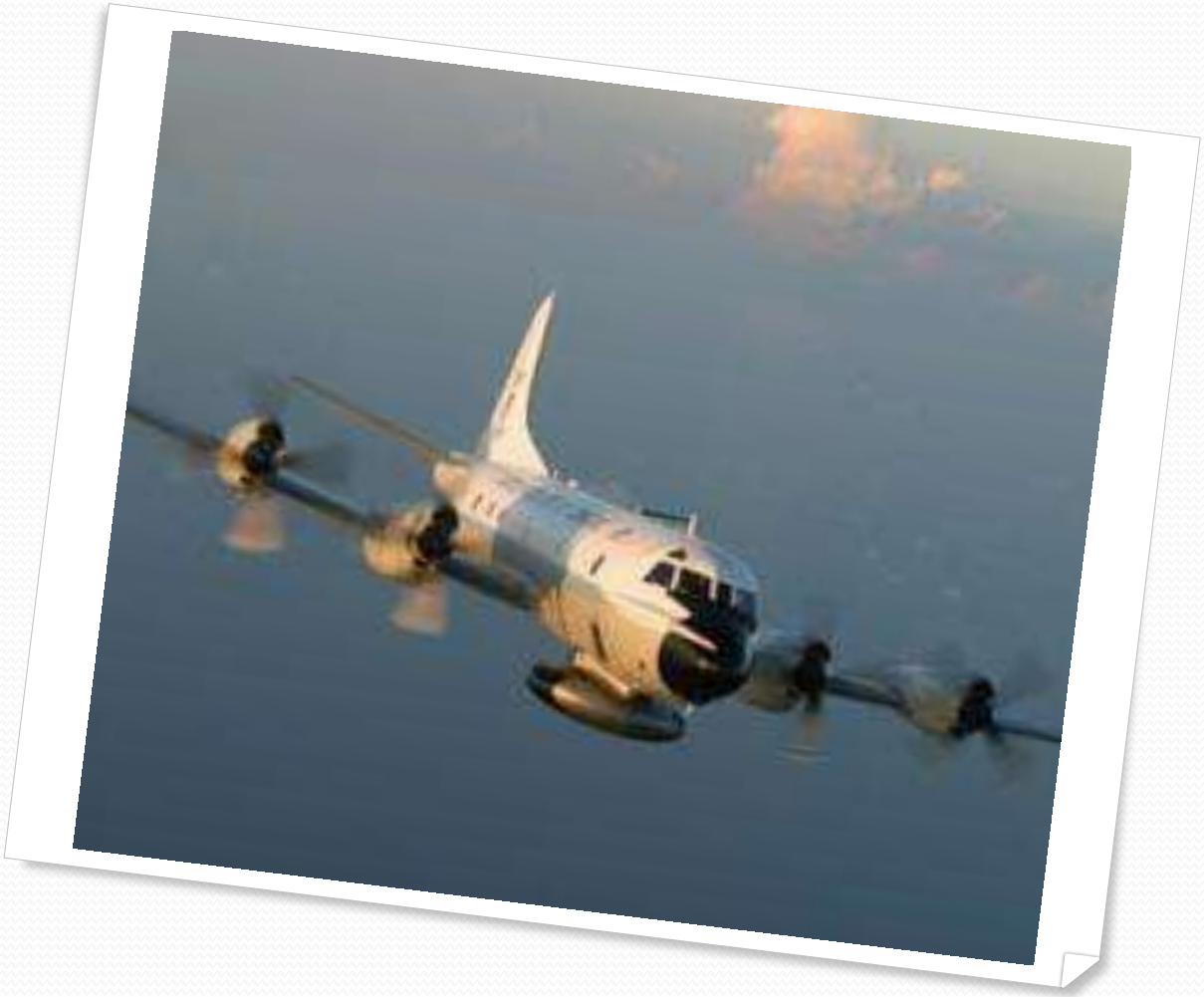
Gulfstream IV-SP (G-IV)

- Configured for operational support of the National Hurricane Center synoptic surveillance mission
- This mission is designed to collect process and transmit vertical atmospheric soundings in the environment of the hurricane
- The principle tool used for this task is the GPS dropwindsonde.



Lockheed WP-3D Orion

- Two of the world's premier research aircraft
- Participate in a wide variety of national and international
- Meteorological
- Oceanographic
- Environmental
- Hurricane research and reconnaissance



Heavily modified

Cloud Physics:

Precipitation and cloud particle probes
Forward and Axially scattering particle probes
Aerosol sampling system

Radiation:

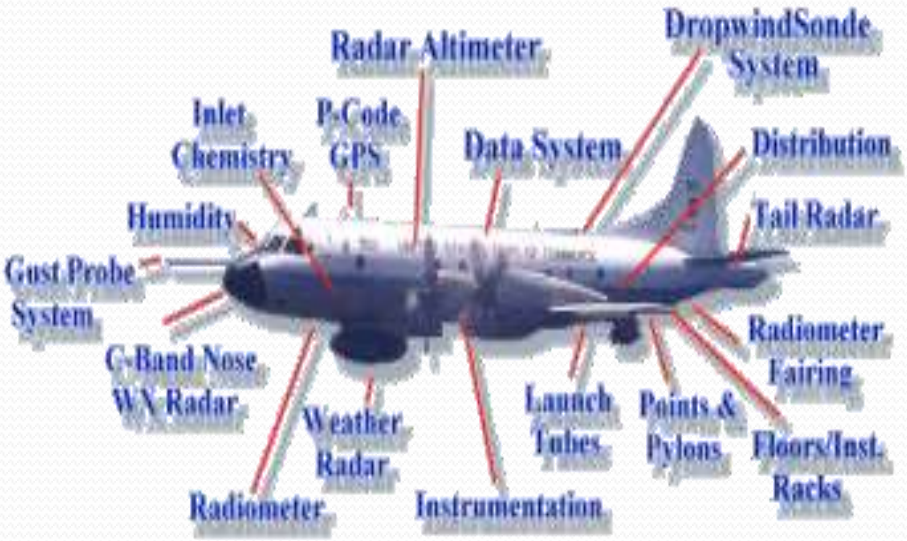
Sea surface temperature radiometer
CO2 air temperature radiometer
solar and terrestrial radiometers

Expendables:

GPS dropwindsonde atmospheric profiling system
Airborne Expendable Bathythermographs (AXBT's)

Miscellaneous:

C-band and Ku-band scatterometers
Stepped Frequency Microwave Radiometer
Radome Flow Angle Sensors
External Wing Store Station Mounts
Dual Inertial and GPS Navigation Systems



Aircraft Airworthiness

FAA Certificated

Standard Airworthiness Certificate

- Normal (light aircraft)
- Transport (GIV)

Special Airworthiness Certificate

- Restricted (King Air)

Public Aircraft

Airworthiness Certificate

- ICAO Annex 8, Chapter 3. Certificate of Airworthiness
- NOAA Administrative Order 216-103 – Operations Manual
- OPNAVINST 4790.2 Department Administrative Order 25-5B – NAMP
- AC 20-132 (Cancelled) - Public Aircraft

United States of America
National Oceanic and Atmospheric Administration
Certificate of Airworthiness

1. NATIONALITY AND REGISTRATION MARKS	2. MANUFACTURER AND MANUFACTURERS' DESIGNATION OF AIRCRAFT	3. AIRCRAFT SERIAL NUMBER
N43RF	**Lockheed Aircraft Corporation, Burbank** **WP-3D**	5633

5. AUTHORITY AND BASIS FOR ISSUE

This Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 7 December 1944 and the Federal Aviation Act of 1958 and certified under OPNAVINST 4790.2, Department Administrative Order 25-5B, Amendment 2 and NOAA Administrative Order 216-103, in respect of the above-mentioned aircraft which is considered to be airworthy when maintained and operated in accordance with the foregoing and the pertinent operating limitations. Under ICAO regulations, the above-mentioned aircraft is operated as a State-Owned aircraft.

THIS CERTIFIES THAT, AS OF THE DATE OF ISSUANCE (REISSUE), THE AIRCRAFT TO WHICH ISSUED HAS BEEN INSPECTED AND FOUND TO BE IN CONDITION FOR SAFE OPERATION. FOR OPERATIONS OUTSIDE THE AIRSPACE OF THE UNITED STATES IT HAS BEEN SHOWN BY NOAA TO MEET THE REQUIREMENTS OF THE DETAILED AIRWORTHINESS CODE PROVIDED BY ANNEX 8 OF THE CONVENTION ON INTERNATIONAL CIVIL AVIATION, EXCEPT AS NOTED HEREIN.

DATE OF ISSUANCE	NOAA AIRWORTHINESS REVIEW OFFICIAL AND DATE OF REISSUE (*If Applicable*)	CENTER AND OFFICE CODE
		Aircraft Operations Center AOC2

6. EXCEPTIONS

Certificate shall be reissued annually (12 months from date of reissue) or after each major repair or alteration upon inspection by a NOAA/AOC authorized Airworthiness Review Official.

Public vs. Part 91

- Current State aircraft issues
- IS-BAO accreditation may help
- Conversion economically unfeasible
- Possible replacement(s) operated as part 91

Aircrew Certification and Training

- ATP for Aircraft Commanders in P-3 & GIV (heavy)
- Pilots are Type Rated, including IR for light aircraft
- FAA Turboprop Flight Engineers License (P-3 aircraft)
- FAA Navigators License (P-3 aircraft)
- Annual internal checkride (Pilots, FE's and Nav's)
- Annual refresher training and simulator for Part 91 (Flight Safety)
- Bi-annual refresher training and written exam with the Navy, (Pilots, FE's and Nav's)

Mechanic’s Certifications and Training

- Airframe and Powerplant License
- Inspection Authorization
- Bi-Annual Original Equipment Manufactures (Training)

Cross Utilization and Data Collection

- Confusion when moving from Public to Part 91
- Alleviate through use of an MEL for both Public and Part 91
- Return to service

Questions?