

NOAA BACKGROUNDER



NOAA's "Hurricane Hunter" Aircraft Lockheed WP-3D Orion



A WORD ABOUT NOAA. . .

The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global oceans, atmosphere, space and sun, and applies this knowledge to science and service that touch the lives of all Americans.

NOAA warns of dangerous weather, charts our seas and skies, guides our use and protection of ocean and coastal resources, and conducts research to improve our understanding and stewardship of the environment which sustains us all.

A Commerce Department agency, NOAA provides these services through five major organizations: the National Weather Service, the National Ocean Service, the National Marine Fisheries Service, the National Environmental Satellite, Data and Information Service, and Office of Oceanic and Atmospheric Research; and numerous special program units. In addition, NOAA research and operational activities are supported by the Nation's seventh uniformed service, the NOAA Corps, a commissioned officer corps of men and women who operate NOAA ships and aircraft, and serve in scientific and administrative posts.

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NOAA's highly instrumented aircraft from the Aircraft Operations Center play an integral role in hurricane forecasting. Data collected during hurricanes by these airborne meteorological platforms and from a variety of other sources are fed into numerical computer models to provide better forecasts of how intense a hurricane will be, and when and where it will make landfall. These data, from the aircraft, fulfill two important purposes: to help forecasters make accurate predictions during a hurricane; and to help NOAA researchers achieve a better understanding of storm processes, thereby improving their forecast models.

Slicing through the eye wall of a hurricane, buffeted by howling winds, blinding rain, violent updrafts and downdrafts before entering the relative calm of the storm's eye, NOAA's two Lockheed WP-3D Orion turbo-prop aircraft probe the very nature of the storm, repeating the grueling experience a number of times during the course of a 9-10 hour mission.

In support of scientists from NOAA's Office of Oceanic and Atmospheric Research, Hurricane Research Division, AOC crew members deploy instruments called GPS (Global Positioning System) dropwindsondes as the WP-3D penetrates the hurricane. These devices continuously radio back measurements of pressure, humidity, temperature and wind as they fall toward the sea, providing a detailed look at the structure of the hurricane and its intensity.

For years NOAA Corps pilots and navigators, along with NOAA civilian engineers and meteorologists, have flown these aircraft into hurricanes at altitudes from 1,500–25,000 feet to collect research data critical for a better understanding of hurricanes, leading to improved track and intensity forecasts.

In addition to flying hurricane research and reconnaissance missions, NOAA's P-3s from the Aircraft Operations Center participate in a wide variety of national and international meteorological and oceanographic research programs each year. Recent work by these aircraft include a climate study off the SW coast of Mexico, pollution studies off the west coast of the U.S., a low-level wind jet experiment over the central South American countries of Bolivia, Paraguay, Chile and Argentina, a study of bow echos and mesoscale convective vortices in the Midwest and a validation of satellite remote sensing systems in high wind and heavy precipitation conditions in the N. Pacific (winter) and the tropics (summer).



AIRCRAFT CHARACTERISTICS

Crew:	18-20
Cruise Speed:	300 Knots
Max Take off Weight:	135,000 lbs.
Service Ceiling:	27,000 Feet
Low Altitude Range:	2,500 Nautical Miles
High Altitude Range:	3,600 Nautical Miles
Max Endurance:	11 Hours



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