



# Research Services Directorate

## NASA Langley Research Center – Air Fleet Fact Sheet

### RSD MISSION

Advance aviation, human exploration, and our understanding of the Earth by means of airborne research employing uniquely modified aircraft and Uninhabited Aerial Systems (UAS), and through advanced flight simulation and modeling.

### RSD SALIENT CAPABILITIES

- Vehicle modification
- Airworthiness
- Flight Test/Envelope Expansion
- Adaptable Sim-to-Flight/TRL Maturation
- Flight/Autonomy
- Modeling & Simulation
- Diverse Environment Test Range



#### Boeing B777-200ER (N577NA)

Max altitude FL430. Max endurance 20+ hrs.  
Undergoing modifications to convert from a commercial airliner into NASA's largest airborne science platform. This unique flying laboratory will provide global reach, supporting NASA projects such as sensor development, satellite sensor calibration, data product validation, and field studies. These efforts will advance understanding of Earth system processes, improving weather prediction models and climate-driven decision making.



#### G-20B Gulfstream III (N520NA)

Max altitude FL450. Max endurance 7+ hrs.  
Features an engine hush kit; research power distribution system; intercom system; dropsonde capability; and two nadir portals in the fuselage for earth science sensors.



#### P-3 Orion (N426NA)

Max altitude FL320. Max endurance 12+ hrs.  
Features zenith ports, three nadir ports (aft of the wings), data and video network, tail cone ports, nose radome ports, and ten mounting locations on the wings. Most of the fuselage ports are contained within the pressurized cabin environment.



#### B200 King Air (N529NA)

Max altitude FL350. Max endurance 8+ hrs.  
Features two downward looking nadir-viewing ports, TCAS, GPS, satcom, wingtip pylons. Platform suite of aerosol and cloud remote-sensing instruments. B200 provides an efficient and effective operational platform for small to medium-sized science payloads. Upgraded propellers and aircraft to accommodate RVSM flight and increased performance.



#### Cirrus SR22 (N501NA)

Max Altitude FL170. Max endurance 6+ hrs.  
Features research data system Pallet, Autopilot/Throttle, GPS/Nav/Comm/MFD/EDM/SAM, cameras Air data boom-MX, A/B Vanes + S/W, belly pod for airborne sensors, and airframe parachute system.



#### LC40 Columbia 300 (N507NA)

Max Altitude FL 180. Max endurance 7+ hrs.  
UAM Flight Research Testbed aircraft with updated digital avionics and research systems. One of the two autopilots is a modified research system with expanded authority, enhanced automation and AI control capabilities.

For more information, please contact us at [larc-dl-rsd-partnerships-team@mail.nasa.gov](mailto:larc-dl-rsd-partnerships-team@mail.nasa.gov)

\* Max altitudes and endurances listed are based on specific flight configuration and profile.