

Stratolaunch Eagles

Intermediate-Class Launch Vehicle



Intermediate-Class

Overview

The Stratolaunch Eagles program is a Paul Allen project designed to address the space industry's need for a responsive and flexible space launch system capable of increased flight rates for intermediate-class payloads. Eagles will employ the world's largest aircraft developed by Scaled Composites, builder of the White Knight aircraft, as an air breathing reusable first stage to launch larger classes of payloads than any similar platform. To help make the Stratolaunch vision a reality, Orbital ATK is leveraging its vast launch vehicle and launch operations expertise to develop the Air Launch Vehicle. Orbital ATK is applying technology from its patented Pegasus® air-launch system and the Defense Advanced Research Projects Agency (DARPA)-sponsored Taurus® program that was designed for easy transportability and rapid launch, to reduce cost and provide unparalleled flexibility to operate from virtually anywhere on Earth with minimal ground support.

The Air Launch Vehicle is a multistage rocket that combines demonstrated rocket technologies and a proven winged configuration on a large scale. The Eagles system is designed to be EELV compliant, capable of launching payloads in the 10,000 pound class to low-Earth orbit (LEO), and smaller payloads to geostationary transfer orbit (GTO). The Air Launch Vehicle design utilizes Orbital ATK's proven Modular Avionics Control Hardware (MACH), engineering standards and common vehicle and payload integration processes utilized in the Pegasus, Taurus, Minotaur and Antares™ launch vehicle families.

Key Features

- Incorporates both solid and liquid stages
- 5 meter fairing to accommodate large payloads
- Compatible with Vandenberg Air Force Base, Edwards Air Force Base, Kennedy Space Center and other sites
- 1,000 nmi range to launch window
- Rapid launch readiness
- Austere ground operations
- World's largest aircraft
 - Over 500,000 lb payload capacity
 - 385 ft wing span
- Substantial payload performance to any orbital inclination (including sun synchronous)
- Design evolution for crewed payloads

FACTS AT A GLANCE

- Intermediate Class Launch Vehicle
- 10,000 lb class payloads to low-Earth Orbit
- Affordable and flexible payload delivery system
- Designed to EELV requirements
- Flight testing begins in 2016

Mission Partners

Stratolaunch Systems

Prime organization offering launch services; program management and overall system direction

Orbital ATK

Launch vehicle and mission design; system integration; integrated ground systems

Scaled Composites

Carrier aircraft development, fabrication and flight testing; aircraft facilities and operations



Stratolaunch gives customers the flexibility to rapidly launch payloads to any orbit, any time



Stratolaunch Eagles

Air Launch Vehicle – "Thunderbolt"

Manufacturer:	Orbital ATK
Length:	131 ft
Wingspan:	40 ft
Weight:	500,000 lb
Stage 1 and 2:	ATK Solid Rocket Motors
Stage 3:	Liquid hydrogen/oxygen with two RL10C engines



Payload Accommodations

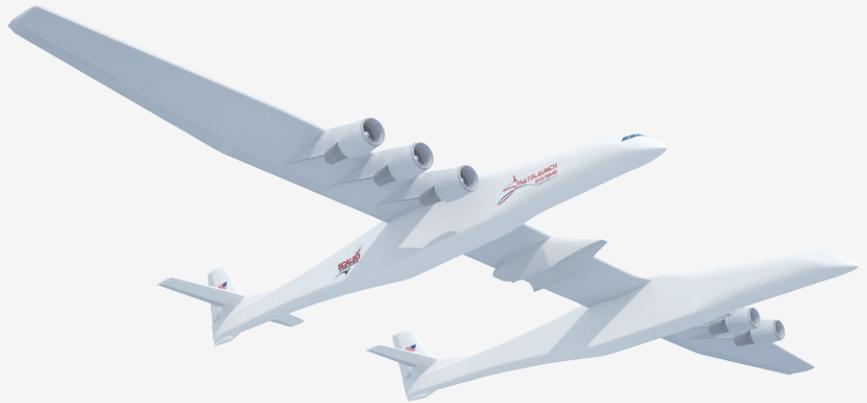
- EELV compatible fairing envelope
- Temperature and humidity controlled payload environment

The Stratolaunch Systems air launch concept allows for payload performance to be tailored to mission unique requirements.

Designed for maximum performance using a combination of proven and reliable rocket propulsion technologies

Carrier Aircraft – "Roc"

Manufacturer:	Scaled Composites
Length:	238 ft
Height:	50 ft
Wing Span:	385 ft
Max Gross Weight:	1,300,000 lb
Launch Window Range:	1,000 nmi
Maximum Altitude:	45,000 ft
Runway Requirement:	12,500 ft x 200 ft
All Composite Airframe	
Crew of 3 plus two jump seats	
Six 747 PW4056 turbofan engines	
56,750 lb thrust at sea level	



For more information:

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Orbital ATK

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