



Orbital ATK is investing hundreds of millions of its own money to ensure Omega is ready to fly in 2021.

Space Innovators Confident They Are Building America's Next Large-Class Launcher

Orbital ATK believes it has the right rocket to answer the U.S. Air Force's quest for a new Evolved Expendable Launch Vehicle (EELV).

The company is drawing on its history of space launch success to produce its all-American, large-class launcher: Omega™.

Omega is a low-cost, low-risk solution that will fully meet the intermediate- and heavy-class vehicle requirements of EELV.

Orbital ATK is drawing on a long history of innovation and space launch accomplishments—nearly 100 successful missions for a variety of customers. The U.S. government and diverse commercial customers rely on the company's existing line of rockets, from its small-class Pegasus and Minotaur to medium-class Antares.

One thing that sets Orbital ATK apart is that it plays a critical role on every national security launch program.

Omega is the logical next step for a company with such a robust portfolio, providing the capability to launch intermediate and heavy payloads. It will be the company's largest and most capable rocket. The company points out that the O and A at the beginning and end of the name pay homage to the Orbital ATK name and history of innovation; the name also highlights Omega is the finale in the company's rocket lineup, from small- to large-class.

The three-stage Omega relies substantially on existing technology, ensuring a relatively short development period at a time when the Air Force is eager to speed up the fielding of new systems.

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The first Omega case rises from the test facility following a successful hydro-proof test.

“Orbital ATK has been launching into space since the 1980s – this is what we do, and we have the track-record of success to prove it. Omega draws not only on Orbital ATK’s launch heritage but also on a significant amount of existing technology, which gets us out of the starting gate with a low risk profile,” said Mark Pieczynski, vice president of business development for Orbital ATK’s Flight Systems Group. “We’re integrating flight-proven technologies that we’re already delivering to our customers. All Omega systems are mature, exhibiting a technology readiness level ranging from a TRL-6 to TRL-9.”

Omega will share common propulsion, structures and avionics systems with current and future programs. Such commonality will keep the all-American Omega affordable for the Air Force’s EELV program while also saving other government agencies about \$600 million over 10 years.

Orbital ATK is producing Omega hardware today. It has already built solid rocket motors for the first stage and second stage and is readying them for full-scale testing at its factory in Promontory, Utah. The first and second stages are on track to undergo static firing tests in 2019.

Omega’s first-stage CASTOR® 600 and 1200 motors are based on the NASA Space Shuttle’s solid rocket motors. The main difference is that the cases will be made with composites instead of steel – composites that Orbital ATK is already using for space launches.

Aerojet Rocketdyne’s RL10 engine will be Omega’s primary upper-stage propulsion system due to its low-risk and extensive heritage delivering defense, civil and commercial payloads to orbit.

Other key components are also ready for use on Omega. The payload fairings are similar in size to the Delta IV fairing, which Orbital ATK manufactures in its luka, Mississippi factory. The avionics are tailored to Omega but have already flown on other systems.

Significant resources are being dedicated to ensure Omega supports the schedule needs of the Air Force. Orbital ATK and the Air Force have together invested more than \$200 million in the rocket, and Orbital ATK is prepared to contribute hundreds of millions more to support the launcher’s continued development.

“Orbital ATK has fully committed to a robust level of investment to meet the technical and schedule requirements of this priority program,” Pieczynski said.

Omega has a skilled and experienced work force, and this talent pool is growing as the program ramps up. Approximately 500 Orbital ATK employees work on the program, and that number is expected to grow to approximately 1000 over the next 24 months in addition to hundreds of jobs in the company’s supply chain.



An Orbital ATK technician inspects a first stage case during winding operations.

OMEGA

Orbital ATK's New Large-Class Rocket

Committed



Orbital ATK is investing \$100s of millions of dollars in the development of Omega



~500 employees currently work on Omega with growth to ~1,000 expected over the next 24 months



Major components for Omega are already in production

Low Risk



Omega incorporates flight-proven systems currently employed by Orbital ATK, NASA and other launch providers



On schedule for first launch in 2021

Low Cost



Omega components come from existing production lines, saving taxpayers \$600 million over the next 10 years



Omega employs mature technologies used in a broad variety of rockets, which drives down costs



Orbital ATK

On average, the company builds 20 rockets each year

20

We conduct an average of 14 rocket launches per year



Orbital ATK designs a new rocket about every two years



Our rockets, motors and components support all U.S. national security launch programs



World-class safety record



Orbital ATK



Orbital ATK technicians move an Omega first stage case into an autoclave for processing.

The Omega effort looks forward to a key government decision this summer. The Air Force's EELV program is expected to award at least three launch service agreements in July to support further development of launch system prototypes. It will then pick two EELV providers by the end of 2019. Orbital ATK is participating in this competition and is on track to conduct two certification launches in 2021.

"Omega will be ready to fly in just 3 years," Pieczynski said.

Omega will offer the flexibility to lift off from both East Coast and West Coast ranges. Orbital ATK has a Space Act agreement with NASA to use Complex 39B at Kennedy Space Center in Florida. Selection of a launch site at Vandenberg Air Force Base in California is underway.

Orbital ATK's broad experience extends to missile defense, space exploration and strategic missiles. It produces targets and interceptor boosters for the U.S. Missile Defense Agency and provides propulsion for the Air Force's Minuteman III intercontinental ballistic missile, the Navy's submarine-launched Trident II missile and NASA's Space Launch System (SLS) deep-space rocket.

Thanks to its robust industrial manufacturing capacity, Orbital ATK can scale up Omega production to meet increased demand for military, civil and commercial launches. Each year, on average, the company builds 20 rockets of all classes—including space launch vehicles and critical missile defense boosters—and conducts 14 launches.

We build and launch a lot, making us one of the most active launch companies in the world," Pieczynski said.

Orbital ATK is also prepared to weather an unforeseen downturn in EELV demand. The extensive commonality of Omega's sub-systems across multiple programs will enable the company to control costs as launch rates fluctuate in the future. Orbital ATK's diverse business base allows the company to reassign personnel to other ongoing programs in times of reduced Omega launch rates.

"We don't require 12 launches per year for Omega," Pieczynski said. "We can close our business case with a small number of launches. That's important to our Air Force customer, which wants to know that the company will be a reliable partner even if it conducts only a few launches a year for the EELV program."

Omega will be available in two variants. The intermediate configuration will carry 4,900 to 10,100 kilograms of payload to geosynchronous transfer orbit. The heavy configuration will deliver 5,250 to 7,800 kilograms to geostationary equatorial orbit.

"Omega will be capable of launching the full range of national security missions required by the Air Force, as well as science and commercial payloads for other customers," Pieczynski said. "It is poised to be America's space launch workhorse for many years to come."



Orbital ATK's Omega rocket, pictured here on Pad 39B at Kennedy Space Center, will launch from both coasts.