

AF Secretary Describes Space Flight Milestones, Challenges

By Amaani Lyle, DoD News, Defense Media Activity / Published June 4, 2015

Air Force Secretary Deborah Lee James yesterday outlined the Air Force's contributions to human space flight advancement and discussed projected milestones and investments in space.

James delivered the keynote address at the Center for American Progress at an event marking the 50th anniversary of Air Force Maj. Ed White leaving his Gemini 4 spacecraft to become the first American to walk in space.

"Space-based capabilities and effects are vital today to U.S. warfighting, homeland security and, indeed, to our way of life," James said. "Space provides us with position, navigation and timing ... [and] helps us with communications used in international banking, global commerce and remote sensing to deter against nuclear war."

And space is not only an enabler for other domains, the secretary said, but also directly affects the calculus of national security. Though for many years people largely perceived the space environment as peaceful, James warned that is no longer necessarily so.

"Today our satellites ... are threatened by a proliferation of man-made space debris and by those who would deliberately seek to counter some of our advantages or capabilities in space," the secretary said.

New Threats Require Different Thinking

The United States needs to think differently about strategies to buffer against increasing threats in space, James said, and posturing for defense and situational awareness in the domain are good starts. "We need to ... prepare for the day when a conflict on Earth could translate to effects in space," she added.

She cited success with the Air Force's launch provider, United Launch Alliance.

"The Air Force [Evolved Expendable Launch Vehicle] program has had an unprecedented 100 percent launch success rate for almost 13 years," James said. "We also have been encouraging newer launch providers ... like SpaceX, to help us re-energize the industrial base and to reintroduce competition into the launch service arena."

Recently, SpaceX and its Falcon 9 rocket were certified as the national security space launch service provider, which James said enables the Air Force to compete launch services for the first time in almost a decade. Leveraging competition will help the Air Force drive down taxpayer costs and boost space resiliency, she added.

Humans Will Soon Go to Mars

James said President Barack Obama's national space transportation policy calls on NASA to develop the necessary capabilities to support human exploration of Mars.

During a recent speech at the Kennedy Space Center, Obama proclaimed that by the mid-2030s, he believes the United States can safely send humans to orbit Mars and return to Earth, and that landing on Mars will follow.

"The day we land on Mars -- and I, for one, hope that an airman will be on that mission ... who will do so in the spirit of Ed White, this will be huge," James said.



The Air Force's support of the evolving space enterprise that will continue the exploration and development of space is equally important, the secretary said.

"The U.S. space infrastructure will grow to include capabilities such as on-orbit servicing, assembly of large orbiting structures and routine use of extraterrestrial resources," she said, adding that returning to manned missions from U.S. soil will also be among the Air Force's significant developments.

Innovation With Industry

Innovation and collaboration with industry keep the Air Force at the forefront of space capabilities nationally and globally, James said, and pays dividends for national space programs.

"The Gemini IV launch and Ed's spacewalk ... serve as shining examples of what our government can do when we work in close collaboration with industry," she said. "So much of what we do depends on that innovation that comes to us from industry."

With last year's announcement that NASA selected SpaceX and Boeing to develop the commercial crew capsule, the secretary said she believes it's "very likely" that airmen will return to space by way of Air Force launch facilities before the decade's end. "That will mean the days of relying on Russians in this way will be numbered," she added.

As the Defense Department's executive agent for space, James said, she looks broadly across the enterprise at its strategy, budgets and threats. This, she told the audience, calls for greater investments in training, doctrine and tactics, just in the air and cyber domains.

Space situational awareness, or "the eyes in the sky," underpins the domain's programs, specifically related to launching humans and national security payloads into orbit, the secretary said. In July 2014 for example, the Air Force launched two geosynchronous space situational awareness program vehicles that are currently progressing with on-orbit research, development, testing and evaluation.

"This program is going to provide us with unprecedented awareness of the activities of other satellites and geosynchronous and geostationary orbits," James said, adding that it will be "one of our key neighborhood watch programs."

Pending an approved budgetary request, the Air Force is on track for the 2019 introduction of the Space Fence, which the secretary said can track smaller objects in low-Earth orbit, adapting capabilities to the trend of smaller and more capable satellites. "Even very small pieces of debris can do enormous damage to these precious satellites," she said.

People are Greatest Factor in Space

Airmen, James said, have been seminal contributors to space advancement over the decades, including pioneers such as Astronaut Buzz Aldrin, who became the second moonwalker as part of the Apollo 11 mission and set a spacewalk record with five and a half hours outside the spacecraft during the Gemini 12 mission.

More recent examples, she said, include retired Air Force Gen. Kevin Chilton, who logged more than 704 hours in space before serving as commander of U.S. Strategic Command, and retired Air Force Col. Eileen Collins, who logged 872 hours in space and was the first woman to pilot a shuttle and command a shuttle mission.

James also noted Air Force Col. Terry Virts' service as commander of the International Space Station, which, over the past 15 years, has been inhabited by astronauts from around the globe to advance space goals for humanity.

Orbiting 250 miles above the Earth, Virts and his team are responsible for “the most comprehensive study of year-long effects of space on the human body,” James said. The study, she added, will yield “absolutely essential information and insight ... that will be pivotal in determining how humans will ultimately survive a mission to Mars.”

But in considering how to inspire and motivate future airmen in space, James noted that the Air Force’s contributions don’t begin and end with astronauts. Thousands of engineers, scientists, maintainers and other dedicated professionals also work toward sustaining America’s leadership in space, and launch infrastructure rockets such as the Atlas and Delta have been “workhorses” for space exploration, she said.

Defense Department investments include billions of dollars in the space industrial base and James said she predicted a budget uptick in that area due to the program’s significance.

Encouraging Future Airmen, Astronauts

But capabilities alone will not suffice in keeping an advantage in space, James said.

“Our airmen ... must continue and become even more well versed in space, its application and its defense,” the secretary said. “Our airmen have to enhance their knowledge of how information ... permeates all military systems and contributes to critical information and vital intelligence.”

Nurturing greater interest in science, technology, engineering and mathematics careers focused on space will ensure future airmen have a sustained zeal and curiosity for the field, James said. The Air Force and the Air Force Association partnered with industry to develop a program, Stellar Explorers, a STEM-themed group encouraging friendly competition in innovation and this year, coincided with the Space Symposium in Colorado, she noted.

“I’m hopeful ... that programs like Stellar Explorers will inspire our youth and put them on a path toward careers involving space that is enriching, rewarding and fun. ... Let’s face it -- space is fun,” James said.

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