

**Two views on**

# Russian space

**Bright future or...program in decay?**

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## Kennedy Space Center's post-shuttle revival

**When the space-shuttle era ended** in 2011, many people worried that NASA's John F. Kennedy Space Center in Cape Canaveral, Florida — the nerve center of the U.S. space program — had passed its best days.

Not so, said Robert Cabana, the Kennedy Center's director. Despite the loss of the iconic Space Shuttle program and the subsequent 43 percent reduction in workers, Cabana said Kennedy is set to become a thriving hub for space programs, both public and private.

Cabana said Kennedy is preparing to host the next generation of launchers and vehicles, chief among them the Space Launch System and the Orion spacecraft. The center also is expanding to meet the needs of commercial space customers. In order to host these new generations of rockets, NASA and

its private space company partners are erecting new buildings, constructing new launch pad complexes and modifying older complexes.

Cabana said the projects include a revamp of the Vehicle Assembly Building; transformation of the Orbiter Processing Facility into a Commercial Crew and Cargo Processing Facility; a rebuild of Firing Room 17, the room that launched the Apollo missions; and several other changes.

In addition, Elon Musk's SpaceX is redeveloping the launch pad 39A — which launched nearly every Apollo mission — into a facility to launch its Falcon 9 and Falcon Heavy rockets. Boeing has taken over part of the Orbiter Processing Facility for its X-37B unmanned spacecraft project. Kennedy also has teamed with the state of Florida and NASA's Space



Robert Cabana, director of NASA's Kennedy Space Center

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Life Sciences Laboratory to create Exploration Park, a research and development facility on the center's property that will serve as a hub for private enterprise and private-public partnerships.

**Duane Hyland**  
duaneh@aiaa.org

## Explaining the high cost of satellites and rockets

**Why are government satellites,** rockets and aircraft so darn expensive? The answer: Fear. Fear of test failures. Fear of bid protests. Fear of losing political support.

"The paranoia of making a mistake and losing your job drives people to overdo things," said former space station astronaut Frank Culbertson, now president of Orbital ATK's Space Systems Group.

Culbertson said rocket failures, though painful, could be a good thing in one respect. Even if lives are lost and cargo destroyed, "you're going to be stronger the next time around, just as we were in the shuttle program," he said.

Fear also affects costs in subtler ways. Government contracting officers live in fear of successful bid protests, so they "lay out a paper trail of fairness and transparency," said former NASA Administrator Michael D. Griffin, now chairman and CEO of Schafer Corp. "It's nice that America chooses to be fair, but it's extremely expensive to do so."

Fear of losing political support for large projects has historically led government managers to distribute work across as many U.S. states as possible. Mike Hawes, vice president and Orion program manager at Lockheed Martin Corp., said the political motivation can be overblown.

"There are a lot of states that I buy stuff from that I don't have a political reason to go buy from that state. So, I rankle at that a little bit," he said.

Fear isn't necessarily all bad. In the commercial world, Griffin said, market forces are intense.

"Almost everyone in the company is co-aligned in their motivations. Executive bonuses, executive salaries, even continued employment is contingent on doing things in a very balanced way," he said.

In government procurement, "we need something to substitute for market forces," Griffin said.

**Ben Iannotta**  
beni@aiaa.org