



THE FRONT PAGE

KSC's front door to Business Development and Research and Technology

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Center Planning and Development (CPD) is the "front door" for partnerships with NASA's John F. Kennedy Space Center (KSC). We are developing the world's premier spaceport for government and commercial space industries using comprehensive resource planning and partnerships. For more information about CPD, visit <http://kscpartnerships.ksc.nasa.gov/>.

Management's Message

Centerwide teamwork creates inspired results

As the Center Planning and Development Directorate (CPD) continues to serve as Kennedy Space Center's "front door" to industry, academia, and other government organizations, we appreciatively recognize that it takes all of KSC, and although 2013 brought about numerous achievements, we still face challenges and obstacles.

During KSC's on-going evolution into a multi-user spaceport, CPD has strategized Center land use, to include several commercial partnerships, signed and operating at KSC; with 3 landmark initiatives of late: selecting partners for the SLF and Pad A, and preparing an Announcement for Proposal for the VAB and three MLPs. We have also managed various technology transfers, SBIR/STTR, TEERM, and other R&T initiatives and projects. Most recently, we celebrate the successful KSC approval of the KSC 20-year Center Master Plan (CMP) website that describes KSC's future state, complete with a business focused implementation plan and operating framework. We anticipate the CMP's public deployment in the very near future.

These accomplishments are attributed to unified efforts of KSC as a whole. As CPD introduced many new initiatives that challenged the KSC/NASA culture, we received outstanding support from many of KSC's directorates. CPD's reliance on personnel outside of CPD has become apparent, and simply, we are grateful. The cooperation continually fostered and demonstrated by our KSC family proves why KSC exemplifies stellar teamwork. Our gratitude also extends to NASA HQ as they continue to support and learn with us.

CPD sincerely appreciates your cooperative spirit as we continue to test uncharted territory, and recognizes that we will continue to rely on your help to achieve our common missions. Thank you!

-- Scott Collorado

NASA, SPACEX BEGIN PAD 39A NEGOTIATIONS

NASA selected Space Exploration Technologies Corporation (SpaceX) of Hawthorne, Calif., to begin negotiations on a lease to use and operate historic Launch Complex (LC) 39A at Kennedy Space Center.

The selection was announced Dec. 12.

The use and operation of this valuable national asset by a private sector, commercial space partner will ensure its continued viability and use in support of U.S. space endeavors.

The reuse of LC-39A is part of NASA's work to transform Kennedy into a 21st century launch complex capable of supporting both government and commercial users. Kennedy is having success attracting significant private sector interest in its unique facilities. The center is hard at work assembling NASA's Orion spacecraft and preparing its infrastructure for the Space

Launch System rocket, which will launch from LC-39B and take American astronauts into deep space, including other planetary surfaces such as an asteroid or Mars.

Since the late 1960s, Kennedy's launch pads 39 A and B have served as the starting point for America's most significant human spaceflight endeavors -- Apollo, Skylab, Apollo-Soyuz and all 135 space shuttle missions. LC-39A is the pad where Apollo 11 lifted off from on the first crewed moon landing in 1969, as well as the first space shuttle mission in 1981 and the final mission of the 30-year Space Shuttle Program in 2011.

For more information about Kennedy's Launch Complex 39A and ongoing work to transform the center into a 21st century launch complex, visit: <http://www.nasa.gov/kennedy>.

NASA News Report



This aerial view, taken March 1, 2006, during the Space Shuttle Program, shows Launch Pad 39A at Kennedy Space Center. NASA has selected SpaceX to begin negotiations on the use of the historic launch pad.



The flat concrete runway at Kennedy is one of the few places in the world where high performance automobiles can be tested for aerodynamic and safety designs.

KSC RUNWAY PROVIDES PROVING GROUND FOR HENNESSEY

A major name in automotive development brought one of his exotic vehicles to the 3.5-mile-long runway at NASA's Kennedy Space Center in Florida recently to evaluate its aerodynamics and to see how the car would handle throughout its performance range.

"You can have the smartest engineers and designers, but until you get the car going out there on a runway, you don't know what the car's going to do," said John Hennessey, founder of Hennessey Performance and maker of the Hennessey Venom GT, a high-performance production sports car.

For taxpayers and consumers of exotic vehicles or everyday cars, testing in actual conditions pays off in numerous ways. Technology developed in all aspects of auto making routinely find their way into everyday cars, whether it be increased fuel efficiency or safety gear.

"Almost everything in cars has started in racing," said Johnny Bohmer, owner of Performance

Power Racing in West Palm Beach. Performance Power Racing negotiated a Space Act Agreement with Kennedy in 2011 to perform aerodynamic and other research evaluations at the Kennedy runway. He collaborates with companies like Hennessey to accomplish the testing, too. "It trickles down and all that stuff is information passed on to other people and everything trickles down into passenger cars. You've got to push boundaries to get results."

The Shuttle Landing Facility is one of only about half-a-dozen places in the world that has the kind of room and infrastructure to make test runs safely.

NASCAR and Le Mans teams have also tested their vehicles at the SLF recently. Built for the demands of the space shuttle, the runway is one of the longest in the world and extremely wide. It's also concrete, so there's no salt or sand to kick up into the cars as there is at other locations that are often ancient lakebeds or other natural surfaces.

"From a safety perspective, you have a lot more room to negotiate if there's a problem," Hennessey said. "You feel like this is really the safest place for what we've got to do."

The rules for the runway's use require legitimate and measurable engineering data collection that can be used for research and development, said David Cox, Kennedy's Partnership Development manager. There needs to be a strong research and development aspect to the test runs in order to justify the use of the taxpayer-funded facility, he said.

Like all cars that are tested at Kennedy, the Venom was outfitted with numerous sensors and a raft of electronics to evaluate the machine and conditions in ways that space shuttle engineers would recognize instantly. From GPS antennas to accurately calculate and cross-reference speed and acceleration to sensors in the shocks that gauged the down force on the car as the air moved over it, the Hennessey team put tremendous effort

into finding out everything they could about their vehicle.

"The aerodynamics is huge," Hennessey said. "There's this balance between down force and stability. We're trying to balance keeping the car stable and still achieving a speed."

For Hennessey, the testing also is crucial to validating the safety of the car throughout its performance range.

"Now if somebody goes out in the car and wants to push the car, Hennessey knows the car will be safe," Bohmer said.

Adjustments tend to be minute and based on feedback from the sensors that show things the driver and team can't see on their own.

"The data logging that he's doing, a human can't pick up," Bohmer said. "He has to do this because it's pretty much mandatory if you're a manufacturer that you know all the parameters. You can't sell something and not know what it can do."

By Steven Siceloff

PARTNER SPOTLIGHT

Craig Technologies

In June of 2012, NASA signed a partnership agreement with Craig Technologies to maintain an inventory of unique processing and manufacturing equipment for future mission support at the agency's Kennedy Space Center.

Under a five-year, non-reimbursable Space Act Agreement (SAA), NASA has loaned hundreds

of pieces of equipment to Craig Technologies retaining important assets and resulting in a significant cost savings.

The NASA inventory has been enhanced with Craig Technologies' assets and investment to make an even more robust capability for wider application.

"This is an outstanding partnership that we are putting in place," Kennedy Center Director Cabana said. "Not only are we keeping this capability alive, but we save NASA and the taxpayer close to \$3.4 million."

NASA is developing other industry partnerships to maintain agency equipment and facilities.

Established in 1999, Craig Technologies provides engineering and technical services to defense and government

agencies nationwide. The company began independently operating the ADMC in January.

"I'm just very proud and very honored to have Craig Technologies to be trusted as the caretaker of these NASA assets for the next four and a half years," said Carol Craig, the company's founder and chief executive officer.

In October 2012, Craig Technologies consolidated its corporate headquarters and manufacturing division to occupy the 161,000-square-foot ADMC facility where 53 people are employed.

Cabana noted those capabilities will be crucial for several NASA programs on the near horizon, such as the Space Launch System (SLS), the Orion multi-purpose crew vehicle (MPCV) and the Commercial Crew Program.

Cabana said, "It truly is a benefit for all of us and I look forward to continued success working with Craig Technologies as we move forward supporting the SLS, MPCV -- our heavy-lift vehicle and Orion crew vehicle -- as we charge off exploring into the future."

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TECH NEWS

Employee Award

What basic conditions must be met to make living tolerable thousands of miles from Earth, considering that alternative housing may not be available in the new neighborhood?

That's just one of many questions NASA Kennedy Space Center engineer Tracy Gill and a team of specialists from around the agency were challenged to answer in preparation for NASA's planned venture to an asteroid or other deep-space destination.

Their response was the development of the Habitat Demonstration Unit (HDU), a platform which can be used for technology development and architecture validation for lunar and microgravity outposts.

Gill's participation in the effort from concept to prototype culminated with a technology brief on the HDU, earning him recognition from the JSC Inventions and Contribution Board as one of NASA's key innovators.

From a long line of University of Florida graduates, Gill's career path made him uniquely suited to the task.

Starting in payload processing and operations for the space shuttle's Spacelab missions, he moved on to assignments with the International Space Station and Constellation programs before moving into technology development in Center Planning and Development's Research and Technology Management Office.

One conclusion drawn from data collected during HDU testing was that 80 percent of a habitat's systems can be standard to all missions; only 20 percent need to be tailored for the destination.

Asked if he thought he could live in the habitat he helped develop, he enthusiastically responded, "Sure! We used to fight each other for a chance to stay in there overnight."

He lives in Orlando with his wife Michele, a professor in educational psychology at the University of Central Florida, and their two sons, ages five and 10.

Gill currently is assigned to a new team, developing a concept for the JSC-managed Exploration Augmentation Module (EAM), an advanced follow-on to the HDU.

Tracy Gill



Personnel Change

CPD Personnel Change: Following Charles "Chuck" Griffin's recent retirement, Joni Richards, AD-T, has been selected as the new NASA Technology Evaluation for Environmental Risk Mitigation (TEERM) Program Manager. Joni can be contacted at 321-867-2225 or joni.richards@nasa.gov. Kennedy is the agency's lead center for TEERM.



Joni Richards

For more about Kennedy Space Center's Planning and Development, go to <http://kscpartnerships.ksc.nasa.gov/>