



THE FRONT PAGE

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

SUMMER 2015



Page 1



Page 1



Page 3

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/>.

Project Runway: CPD facilitates NASA, Space Florida landing facility agreement

One of the longest runways in the world is about to get a new operator after NASA and Space Florida concluded the final elements of a deal that will allow the Shuttle Landing Facility, or SLF, to expand as a base for commercial aerospace work in addition to the regular load Kennedy Space Center puts on it.

"The SLF is a unique construction in the state and in the world and we want to make sure it remains a benefit to the American taxpayer while also using it as a catalyst for the private market," said Bob Cabana, Kennedy's center director and a shuttle commander and pilot who landed the 110-ton glider on the same runway twice. "The thing that is most different about our runway here is that it is proven in its ability to handle a space plane that has returned through the atmosphere and is approaching with one chance to land safely. It sounds like a simple thing, but making that simple thing effective and efficient takes extraordinary work and diligent care."

With the final landing of the shuttle program in 2011, the runway and the team overseeing it has adapted to a new set of vehicles. Gigantic cargo planes still pull up to the ramp several times a year to deliver everything from bulky payloads such as the Orion heat shield to completed rocket stages including the Atlas V booster stage and Centaur upper stages. The site also has made

a name for itself in automotive circles as an aerodynamics laboratory where companies can try out designs safely and push the envelope to more efficient car operations.

Its appeal is the vast stretch of almost-flat concrete that is available year-round. Similar areas of the world used as proving grounds either have surfaces that are a bit unpredictable or lie in climates that make them unusable for months at a time because of weather.

Private companies frequently request time on the Shuttle Landing Facility for a variety of reasons and that demand is expected to increase in the future as companies that were commercial startups evolve to mature enterprises. The new arrangement with Space Florida is expected to maximize the opportunities to utilize the runway creatively while maintaining its ability to serve NASA and the center during the ongoing transformation to a multi-use spaceport.

"This marks the dawn of a new era for horizontal spaceflight in Florida and the country as a whole," said Space Florida's President and CEO Frank DiBello. "The most storied runway in the world will now become the cornerstone of Florida's next generation commercial spaceport."

The SLF will be an enabler for the next generation of spaceflight companies and provide unique testing and support capabilities

See Page 2

Message from CPD Management

KENNEDY PIONEERS PROCESS OF BUSINESS DEVELOPMENT

Following lengthy negotiations to ensure a win-win for both parties, the Center Planning and Development Directorate, or CPD, has facilitated an historic 30-year agreement. Space Florida has signed with NASA to take over operations at Kennedy Space Center's Shuttle Landing Facility, or SLF. Through the arrangement, Space Florida will fund SLF operations to support NASA's continued use of the facility for the next three decades, and even more importantly, allow the complex to grow into a 21st century horizontal launch and landing site capable of supporting a wide variety of commercial and government spacecraft.

Here at Kennedy, supporting commercial space is a key component of the 20-year Master Plan, finalized last year. To continue our growth as a premier multi-user spaceport, CPD has entered into partnerships that create diverse opportunities to reuse our assets, take advantage of our skilled workforce, utilize our on-site service contractors, and help offset costs. For more than five decades,

See Page 2



Since the retirement of the Space Shuttle Program, the runway remains in use by transport aircraft, T-38s and astronauts, as well as specialized aerodynamic research projects. Photo credit: NASA

From Page 1

that allow growth in several upcoming markets. The customer base for Space Florida’s operations will focus on three main markets: just-in-time delivery systems, Unmanned Aerial Vehicles, and next-generation space launch systems.

“The SLF kind of embodies what we want to do across the center to make the best use out of all the structures and abilities we have,” said Scott Colloredo, director of Kennedy’s Center Planning and Development. “NASA needs this runway, but it doesn’t need it every day of the year. No one else needs it 365 days a year either, but we can schedule the uses of it so all of us together — NASA and the private companies — can use it when we need it.”

Within the past couple of years, an artificial landscape was built past the north end of the runway where experimental flying machines such as NASA’s Morpheus and the Moon Express spacecraft can work out the details of making automated landings on distant worlds such as Mars. Because of the vastness of the SLF, testing can take place on the north-end landing area without halting all work on the rest of the runway, particularly the ramp at the south end.

Though a single concrete strip, the SLF is managed as a two-runway field depending on the direction the aircraft or shuttle is approaching: runway 15 from southeast to northwest and runway 33 for the opposite.

The runway gained in notoriety through the Space Shuttle Era as more and more missions wrapped up with a shuttle touching down on the runway and being wheeled off a couple of miles to the Orbiter Processing Facility to begin preparations for its next mission.

“The history of the SLF shines, and this development makes its future, just like that of Kennedy, shine just as brightly,” Cabana said.

— By Steven Siceloff

“The SLF kind of embodies what we want to do across the center to make the best use out of all the structures and abilities we have,”

Scott Colloredo,
director, Center Planning and Development

From Page 1

convention dictated that NASA owned all aspects of spaceflight; from the launch site to the spacecraft to the launch vehicle and the factory that produced them, NASA was on the hook for virtually all costs.

Through services contracts, such as those more commonly used in NASA programs today, the commercial partner is given more flexibility to develop and launch hardware, and at lower cost. No longer is the spacecraft and launch vehicle developed just for NASA. The partner can provide a service to NASA but also to other users, sharing costs among all customers. That’s a big difference from the past and how government typically operated in the aerospace sector.

The SLF joins first-ever Kennedy agreements for OPF 3, Launch Pad 39A, and many others that demonstrate a relatively new means of accomplishing NASA missions through commercial partnering. NASA and Kennedy have always been the leaders of exploration — from the formation of the space exploration program, to the creation of our unique facilities, to designing and building first-ever space vehicles, to establishing space travel criteria. We are now on the frontier of pioneering commercial space, primarily because working with commercial companies, who have complementary goals to NASA and who bring other paying customers to fund common needs, can benefit all stakeholders.

Adding to that, Kennedy also is the landlord for many of our partners, putting NASA in the unlikely position of landowner and supplier. Current transitional activities differ, as agreements — such as the SLF agreement — place Kennedy in a position of having the asset and finding a viable user to manage and operate it. Establishing a

partnership that provides some limits from a landlord perspective, while giving the partners the flexibility they need to perform missions, is an ongoing challenge. Ultimately, while this is a complex arrangement, this strategic approach satisfies the National Space Policy’s guidelines to enable commercial space wherever possible.

Keeping that in mind, since the creation of CPD five years ago, there has been the ongoing, inevitable challenge of reshaping the boundaries of federal policies. Federal acquisition regulations don’t always apply to Kennedy-provided assets or services. Every partnership agreement created has its unique nuances and crosses new, uncharted territory, mainly because as we learn, the structure continually changes — dynamically — to support unique commercial requests. Under those conditions, we cannot acquire a cookie-cutter prototype agreement, even though some requirements remain standard for all agreements. Thus, we continue to treat each partner as a unique entity, with unique needs.

To add to the difficulty, there are misconceptions concerning land ownership. In reality, NASA is not transferring titles or ownership of any asset — whether facility or land — to any partner. The agreements simply allow the partner to use our asset(s) under a specific, finite term clearly specified within the agreement.

With each partnership agreement signed, lessons are learned and proficiency is honed. And once again, because of the effort of CPD and virtually all of the KSC team, government processes are changing, pioneering the approaches that enable commercial space.

— Scott Colloredo
Director, Center Planning
and Development

Kennedy celebrates, designates new launch pad

LC-39C will enable smaller companies to develop, launch rockets

Kennedy Space Center took another step forward in its transformation to a 21st century multi-user spaceport with the completion of the new Small Class Vehicle Launch Pad, designated 39C, in the Launch Pad 39B area.

This designated pad to test smaller rockets will make it more affordable for smaller aerospace companies to develop and launch from the center, and to break into the commercial spaceflight market.

Kennedy Director Bob Cabana and representatives from the Ground Systems Development and Operations (GSDO) Program and the Center Planning and Development (CPD) and Engineering Directorates marked the completion of the new pad during a ribbon-cutting ceremony July 17.

“As America’s premier



Kennedy Space Center Director Bob Cabana, center, helps cut the ribbon on the new Small Class Vehicle Launch Pad, designated 39C. Also helping to cut the ribbon are, from left, Pat Simpkins, director, Engineering Directorate; Rich Koller, senior vice president with design firm Jones Edmunds; Scott Colloredo, director, Center Planning and Development Directorate; and Michelle Shoultz, president of Frazier Engineering. Photo credit: NASA

spaceport, we’re always looking for new and innovative ways to meet America’s launch needs, and one area that was missing was small class payloads,” Cabana said. “Using 21st century funds, we built Pad 39C.”

GSDO oversaw the project and is working with CPD to grow commercial space efforts at Kennedy. Construction of

the pad began in January and was completed in June.

“Pad 39C is the latest addition to our portfolio of launch pads,” said Scott Colloredo, CPD director. “The small class market is here. The demand for that kind of launcher is increasing. The key here is this is really what a launch site for a small class launcher needs to look like.”

The concrete pad measures about 50 feet wide by about 100 feet long and could support the combined weight of a fueled launch vehicle, payload and customer-provided launch mount up to about 132,000 pounds, and an umbilical tower structure, fluid lines, cables and umbilical arms weighing up to about 47,000 pounds.

GSDO also developed a universal propellant servicing system to provide liquid oxygen and liquid methane fueling capabilities for a variety of small class rockets.

“This is absolutely great to designate a new pad within the confines of Pad 39B. I’m looking forward to having customers here in the not too distant future, making use of this outstanding facility,” Cabana said.

-- By Linda Herridge



A computer-aided aerial image of Launch Pad 39B and the new Small Class Vehicle Launch Pad, designated Pad 39C, in the southeast area of the perimeter of pad B. Photo credit: NASA/David Zeiters

AS 'SCENE' ON CENTER



A look at Launch Pad 39A from atop the Vehicle Assembly Building at Kennedy Space Center. At right is SpaceX's assembly hangar at Kennedy's historic Launch Pad 39A. The launch pad is being outfitted for missions by the Falcon Heavy and for Commercial Crew flights using the Falcon 9 rocket launching Crew Dragons to the International Space Station with NASA astronauts onboard. Photos by NASA/Marshall Murphy, KSC Intern

CONGRATULATIONS!!!

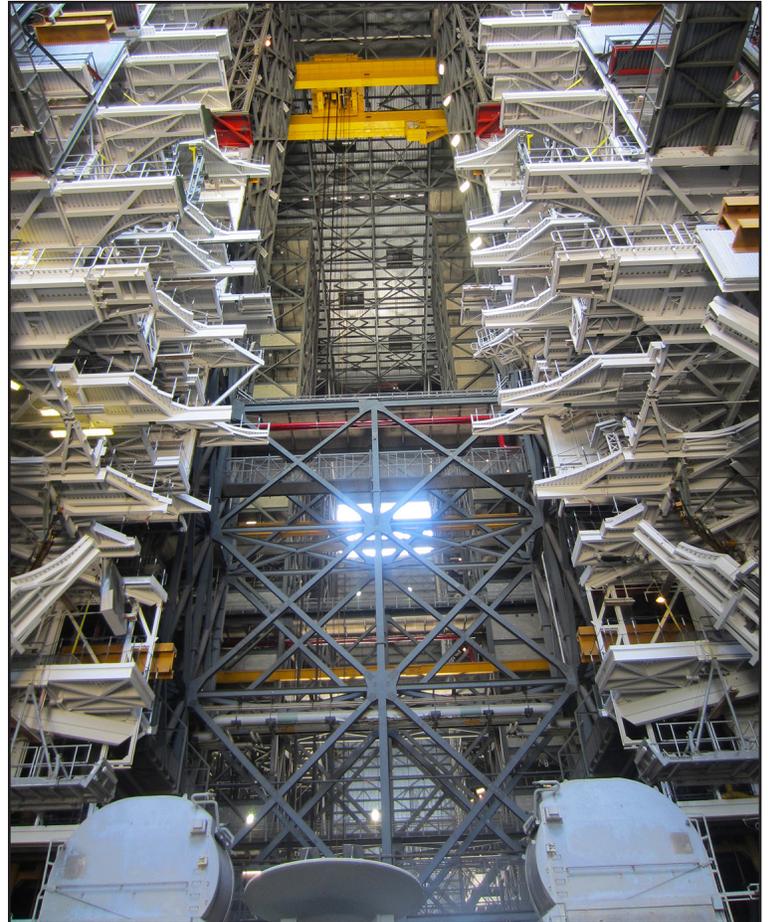
Two Center Planning and Development employees received high recognition for their contribution to Kennedy Space Center!



Trey Carlson received a Space Flight Awareness Award for outstanding efforts as the Lead for the team that negotiated and developed the Real Property Agreement which provides for the long-term operation and maintenance of Shuttle Landing Facility at the Kennedy Space Center by the State Agency Space Florida. His efforts will save significant cost savings while ensuring that the future of horizontal spaceflight is preserved and enhanced over the coming years.



Bob Freeman received a Certificate of Commendation for outstanding leadership in developing KSC partnerships, including an unprecedented initiative that develops KSC's role as a commercial launch site for small vehicles.



At Kennedy Space Center, the Vehicle Assembly Building's High Bay 1 sits empty. Nearby is High Bay 2, which is available through the recent Announcement For Proposal, allowing a potential private U.S. organization to utilize the unique vertical stacking and integration capabilities of the VAB to further our nation's advancement in space travel. Photos by NASA/Marshall Murphy, KSC Intern

DID YOU KNOW?

... of Kennedy's 140,000 acres,
55,000 are wetlands.

CPD contacts

Scott Colloredo - CPD Director: 321-867-2640

Tom Engler - CPD Deputy Director: 321-544-9685

Vicki Johnston - Chief, Partnership Development: 321-867-3722

Gisele Altman - The Front Page Newsletter: 321-867-4000

Mary Ann Chevalier - Public Affairs Officer: 321-861-7075

To view previous editions of The Front Page, visit <http://www.nasa.gov/content/the-front-page-archive/>.

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