

Gulf Coast Reporters' League

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Gulf Coast Aerospace Corridor's bimonthly update of aviation activities in the I-10 region

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The F-35, including the simulator, relies heavily on millions upon millions of lines of computer coding. (U.S. Air Force courtesy photo)

Putting the fight in the F-35

Eglin's \$300 million reprogramming lab provides the F-35 with mission data to give it combat smarts, and now two more multimillion-dollar labs will be built at the base to customize data for F-35 partner nations...

Eglin Air Force Base, Fla.

When the United States Reprogramming Laboratory was established here nearly five years ago, the then-squadron commander made it clear why the lab was important to the F-35.

"Without mission data, the F-35 is a very pretty, and some would say very loud, aircraft," said Air Force Lt. Col. Tim Welde, 513th Electronic Warfare Squadron (EWS) commander. "With mission data, the F-35 is

pure lethality."¹

Call it the brains behind the brawn.

Now, Eglin is scheduled to get two more of the multimillion-dollar labs beginning this year, both catering to the needs of U.S. allies. Add to that the fact that Eglin is where F-35 pilots and maintainers from all U.S. branches and foreign nations are trained and it's clear Eglin is the epicenter for activities that put the fight in the F-35.

The Lockheed-Martin F-35 Lightning II has had its share of controversy. The most expensive weapons program ever, it's had growing pains, like other new weapon systems. But it's a far more capable warplane than predecessors, a digital jet packed with fiber optics and programming that makes it a flying computer. It's designed with jaw-dropping capabilities requiring more than 8

(Continued on page 2)

By David Tortorano, Editor



F-35 USRL

- Manning and funding split 50/50 between the Air Force and Navy
- Staffing by Air Force active duty and Air Force and Navy government civilians and subcontractors
- 140 personnel (75 Air Force, 65 Navy). Will peak at 157 in 2017 with eventual steady state of 145.
- Expertise: mission data programmers (engineers), lab operators, maintainers and technicians, test engineers and managers, operational analysts, IT support and intelligence specialists.

million lines of coding. For comparison, a million lines of coding is roughly 18,000 pages.

Indeed, computer coding underpins all the F-35 capabilities. It enables flight controls; radar functionality; communications, navigation and identification; electronic attack; sensor fusion; and weapons deployment. As of January 2015, more than 89 percent of the required F-35 software was flying. About 99 percent of required software had been coded, leaving 90,000 lines to be written, according to Lockheed.

What gives the F-35 battle smarts are the mission data files being created by Eglin's electronic warfare experts.

"The mission data is solely produced by the government," said Lt. Col. David Perez, commander of the 513th EWS. "Our lab here is entirely a government-owned-and-operated lab producing these files."

Traditional electronic warfare reprogramming focused on defensive systems. But in the F-35, data is required for offensive capabilities, as well.

The data packages -- the Air Force is working on 12 data files for 12 geographic regions² -- hold terrain and enemy threat information, including enemy radar, surface-to-air missiles and fighters, along with data on friendly forces, non-belligerents and commercial aircraft -- all that the pilots need for battle space awareness.

The F-35 is "capable of detecting any entity that's in the airspace it's operating, whether it be a threat, what we call a red system, a good guy, what we call a blue system, or neutral folks that we sometimes call gray systems, and also all the commercial systems, which we refer to as white," said Perez.

The F-35s will go into battle packed with more data than other fighters.

"If you take two other Air Force platforms, the F-22 and the F-15, our mission data loads that we're building are, in rough terms, about twice as big as that of an F-22 and about 10 times as big as that of an F-15," said Perez.

All that information leads to the most distinct feature of the F-35: data fusion. Massive amounts of information from an array of sensors and mission data files are fused and provided to the pilot as clear, integrated, actionable information. It's presented within a cyborg-like, custom-fitted helmet that's the epitome of what the F-35 is all about. It's where the intelligence of man and machine comes together.

When the 513th EWS was activated in April 2010 to operate the \$300 million Air Combat Command's United States Reprogramming Lab (USRL), its task was to create, modify, validate and verify mission data files for the Air Force F-35A, Marine Corps F-35B and Navy F-35C. Being the sole provider of electronic warfare capability was a considerable undertaking.

The Pentagon had to do something to relieve the heavy workload of the Eglin lab. But there was another problem to address. It was the issue of access to source codes. The Pentagon

has had a policy of never sharing source codes for any U.S. weapons system. But the F-35 is being developed by the United States, the primary funder, and partner nations who have spent millions. They wanted access to source codes to be able to modify data packages to suit their needs.

In October 2014, Lt. Gen. Chris Bogdan, executive director of the JSF Program Office, said a compromise was reached that would ease the Eglin lab workload and at the same time provide reprogramming labs for partner nations.³

As a result of that compromise, there are now two mission data reprogramming centers: Reprogramming Center -- East (RC-East) at Eglin, and Reprogramming Center -- West (RC-West) at Naval Air Station Point Mugu, Calif.

RC-West consists of the F-35 Reprogramming Laboratory (FRL), and its customers are Japan and Israel. Other nations will join that lab in the future.

RC-East, run by the 53rd Electronic Warfare Group (EWG), right now consists of the USRL run by the 513th EWS. In the near future, two more labs will be part of RC-East. In mid-2015, ground will be broken for the Australia, Canada, United Kingdom Reprogramming Lab (ACURL). Then in mid-2016, there will be a groundbreaking for the Norway, Italy Reprogramming Lab (NIRL). The labs will permit them to customize mission data that will be loaded on their planes.

"They will be manned by a combination of foreign nationals from each of those countries, as well as by U.S. government personnel and U.S. contractors," said Perez.

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¹ [Joint F-35 electronic warfare squadron stands up](#), Eglin Air Force Base, Ashley M. Wright, April 29, 2010.

² [Air Force Develops Threat Data Base for F-35](#), DefenseTech, Kris Osborn, June 18, 2014.

³ [Foreign F-35 Partners Allow More Freedom to Customize Fighter Software](#), USNI, Dave Majumdar, November 4, 2014.

Military aviation

Keeping 'em flying remains big business

It's a far cry from the days when the Naval Aviation Depot had thousands of workers, but aircraft maintenance continues to be a multimillion-dollar business in the Pensacola metropolitan area...

Pensacola, Fla.

When discussions turn to aerospace and aviation jobs, it's the headline-grabbing newcomers that get attention: Airbus in Mobile, VT MAE in Pensacola, SpaceX in Mississippi.

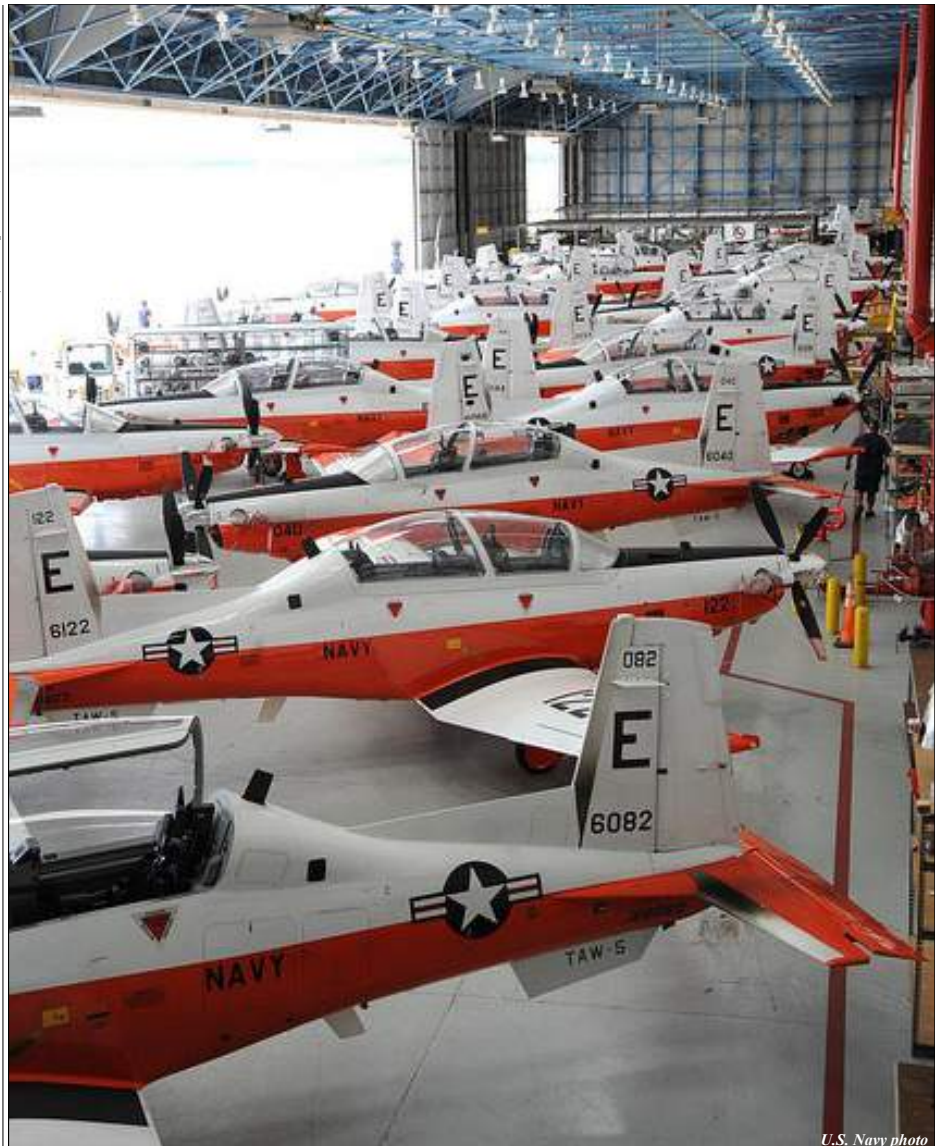
But in the Pensacola metropolitan area, the Navy remains the oldest, most consistent creator of civilian aviation jobs going back to the dawn of naval aviation itself. Today, the handful of defense contractors who maintain the Navy's large fleet of training aircraft at Naval Air Station Pensacola and Naval Air Station Whiting Field provide at least 800 jobs in the metro area.

"About 20 percent of jobs in the metro area are government jobs, and about 80 percent are tied to the military," said John Hutchinson, president of Pensacola's Community Economic Development board.

Structure engineers, aircraft mechanics, ground support equipment workers, rotary wing mechanics, sheet metal workers and more have plenty of work ensuring the Navy's ubiquitous orange and white trainers remain air-worthy. And that's no small feat.

NAS Whiting Field in Milton is the busiest air station in the world, according to the Navy. Whiting logs over 160,000 flight hours per year, representing 14 percent of USN flight hours. The more than 250 aircraft and 1,200 students are responsible for a staggering 1.5 million flight operations each year, well beyond the 970,000

By Duwayne Escobedo



U.S. Navy photo

Contractors handle maintenance of Navy training aircraft, like these T-6 Texan II aircraft at NAS Pensacola .

annual flight operations at Atlanta's Hartsfield International Airport.

The Pensacola metro area had even more of these jobs in the past, thanks to the sprawling Naval Aviation Depot (NADEP) at NAS Pensacola. It employed thousands of civil service, military and contract workers involved in aircraft maintenance and repair, not only of aircraft from this region but those that flew in from other locations.

But in 1993 the largest industrial complex with some 2,600 workers at that time was shut down as a result of base realignment and closures. The site was taken over by the Naval Air Technical Training Center, which moved from Memphis, Tenn., as a result of the same closure round.

Although NADEP is gone, the Navy still required a local workforce to keep the aircraft from the two training bases

(Continued on page 4)

flying. Now the job falls to defense contractors that compete on a regular basis for the multimillion-dollar Defense Department contracts.

The current Navy contract holders are DynCorp International, Sikorsky, L-3 Vertex and Rolls-Royce. Combined they are working contracts for the Chief of Naval Air Training valued at more than \$200 million, though not all of the work is done in this region.

Pinning down just how many workers are involved is a bit difficult, in part because of competitive pressures. But one contractor, DynCorp International, said it has 400 workers. But that's one company. The International Association of Machinists and Aerospace Workers Local Lodge 2777 would only say it represents 800 workers at Pensacola and Whiting Field.

What's unusual about the arrangement is that a technician who works for one company today might have worked for another company a few years earlier when another company held the contract. By the same token, a few years down the road they might be employed by a new contractor. That arrangement means experience is not lost even with a new contractor.

They certainly have their work cut out for them. Whiting field has over 250 aircraft, including fixed-wing T-6B Texan IIs and TH-57 Sea Ranger helicopters. NAS Pensacola has about 130 aircraft, including fixed-wing T-45C Goshawks, T-6A Texan IIs, T-39 Sabreliners; T-1A Jayhawks; F/A-18 Hornets and KC-130F Hercules. The only aircraft that is not maintained by defense contractors are the Blue Angels aircraft at NAS Pensacola's Sherman Field. That work is handled exclusively by Navy personnel.

DynCorp International in [October 2014](#) won an \$83.4 million contract to support and maintain nearly 400 aircraft primarily at NAS Corpus Christi, Texas, NAS Whiting Field and NAS Pensacola. The work in Florida is on

the single-engine T-6 Texan II aircraft. The one-year contract has up to four, one-year options with a potential value of \$443.3 million.

For DynCorp International, winning the contract greatly enhanced the company's Navy market share, which company vice president James Myles described as a "key strategic goal."

"DynCorp International has been a trusted partner to the U.S. Navy for more than 40 years, a tradition we will build on with this new work," said Myles. "We take pride in serving our Navy customers and supporting their vital training missions."

In addition to DynCorp International, in [September 2014](#) the Naval Air Systems Command in Maryland also awarded a \$19.1 million contract modification to Sikorsky Support Services to bridge the gap between the Sikorsky and DI contracts.

George Mitchell, Vice President, Aircraft & Support for Sikorsky's Defense Systems & Services business, said his company prides itself in its "world-class" support of CNATRA and the Naval Air Training Command during the past seven years.

"Our outstanding workforce delivered exceptional performance, meeting the Navy's stringent requirements," Mitchell said. "In fact, for the last year aircraft availability exceeded our contractual specifications."

In addition, the Naval Air Systems Command in [September 2014](#) awarded a \$12 million contract to L-3 Communications Vertex Aerospace to support and maintain the Navy's training aircraft, primarily in Pensacola.

In late [March 2015](#), Rolls-Royce was awarded a \$93.6 million contract to maintain the T-45 F405-RR-401 Ar-dour engines. Most of the work will be done in Meridian, Miss., but about 6 percent will be done at NAS Pensacola.

What is interesting for Pensacola is that while it lost an industrial complex, it got in its place a military training complex that's training the aviation

technicians who may one day return to the region to work on the same aircraft, but in a civilian capacity.

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Corporate: DynCorp International Inc.
HQ: McLean, Va., but contracts managed in Fort Worth, Texas
Established: 1946
Focus areas: flight operations support, training, international development, intelligence training and support, security, operations and maintenance of land vehicles
Local workers: air operations and transport, airfield management, communication and navigation, aerial firefighting, aviation maintenance, modifications, overhaul, repair and support training
Employment information: <http://www.dyn-intl.com/careers/overview/>



Corporate: Sikorsky Aircraft Corp., part of United Technologies
HQ: Stratford, Conn.
Established: 1925
Focus areas: helicopter design, manufacture and service and offers a diverse range of support including maintenance, logistics and technical support, kitting, vehicle and performance based logistics solutions, back shop and depot maintenance
Employment information: <http://www.utc.com/Careers/Pages/default.aspx>



Corporate: L-3 Communications Vertex Aerospace, Madison, Miss.
Established: 1997
Focus areas: L-3 is a prime contractor in aerospace systems and national security solutions. L-3 is also a leading provider of a broad range of communication and electronic systems and products used on military and commercial platforms.
Employment information: <http://www.l-3com.com/careers>

Military profile - Aviation Training Center Mobile

The mentor of Coast Guard Aviation

The Coast Guard aviation center at Mobile Regional wears many hats, and a full-motion simulator developed for the HC-144 Ocean Sentry has attracted a good deal of international attention...

Mobile, Ala.

The Airbus jetliner assembly line being built in Mobile isn't the only aviation operation grabbing international attention. Inside a 13,500 square-foot building near the regional airport is a Coast Guard flight simulator that's as close to flying as it gets without leaving the runway.

The one-of-a-kind HC-144 simulator is one of many trainers at the Aviation Training Center in Mobile, the center of the universe for all things aviation when it comes to the Coast Guard.

The activities at the 221-acre, 55-building ATC Mobile is considerable. One of the largest Coast Guard aviation bases, it's the aviation development center responsible for training pilots and aircrew and setting standards for all Coast Guard aviation activities.

Like many of the military bases in this region, this Department of Homeland Security agency is a major education center. It's where pilots transition to specific aircraft types, and where they return once a year to hone their skills and learn of new tactics and procedures for search and rescue, disaster response and national security.

This nearly 50-year-old base also is an operational air station that responds to everything from drug interdiction to saving boaters to natural disasters in the Gulf Coast region.

ATC Mobile is adjacent to Mobile Regional Airport, 13 miles west of downtown, and shares two runways

By Matt Irvin



The HC-144 full-motion simulator in Mobile has drawn the attention of CN-235 customers, who would like to use it.

with the commercial airport. It has hangars, offices, a health care center and a base exchange, plus fitness and recreation facilities and buildings housing simulators.

The base has four HC-144A, one HC-144B, seven MH-65D and four MH-60T. The HC-144 Ocean Sentry is a twin-engine fixed-wing medium-range maritime patrol aircraft. The MH-60 Jayhawk and MH-65 Dolphin helicopters are used in search and rescue.

Lt. Jonathan Hofius, a pilot stationed at the base, said the operation has a \$17.5 million annual budget for training center operations and maintenance. ATC Mobile is one of the largest non-industrial employers in Mobile County, generating nearly \$98 million in payroll for its 561 active duty and civilians.

At the heart of what it does is aviation. And when it comes to flying for the Coast Guard, all eyes turn to Mobile to set the standards. It's a unique role for the base, said Hofius.

"New aircraft manuals are written here, and syllabi for standards are developed here," said the lieutenant. "It's a great asset to have."

Coast Guard pilots who come to ATC Mobile for training already know how to fly. Some served as pilots in the military who finished tours and opted to continue flying with the Coast Guard. Others trained with fledgling naval aviators at Naval Air Station Whiting Field, Fla., across the state line. After training at Whiting, all the Coast Guard pilots except for C-130 crews are sent to Mobile to train on USCG aircraft. About 165 pilots transition each year at ATC Mobile.

After completing transition training, the new Coast Guard aviators go to one of the two dozen Coast Guard air stations in the country, including one in New Orleans. But while they may be moving on to other bases, they aren't through with Mobile.

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HC-144

The twin-turboprop HC-144, built by Airbus Military, has brought new capabilities to the USCG's maritime patrol mission. Based on the CN-235, its high-wing design allows for ramp-loading of mission-specific pallets, and the plane has an advanced, all-glass cockpit and high-tech sensors.

The HC-144, built in Spain, has taken over the mission of the now-retired HU-25 Guardian jet. With the phase-out, the HU-25 simulator at ATC Mobile will be donated to Enterprise State Community College's Alabama Aviation Center, said Bernstein. The donation will allow students to learn the technology involved with these machines.

"It's just a way of giving it to someone who can use it," said Lt. Alex Bernstein, an HC-144 instructor at ACT Mobile.

Transitioning and standardization training for the HC-144 and the two helicopters takes place at ATC Mobile. For the HC-130s, these duties are conducted at air stations in Elizabeth City, N.C., and Clearwater, Fla., but even these bases are under the "command and control" of ATC Mobile, under the leadership of Capt. Thomas MacDonald, said Hofius.

For Coast Guard aviators, their first time in Mobile ends up not being their last. Once a year, some 850 pilots return to ATC Mobile for a week of proficiency training, and another 1,200 aircrew members come to the base for training updates on Coast Guard operations and weapons.

For the pilots, it means time at the controls of simulators, a far less costly approach than actual flying. They give the pilots almost limitless opportunities to practice emergency procedures, up to and including situations that in the real world would put pilot, crew and aircraft in jeopardy.

ATC Mobile has simulators for each of its aircraft, and while they may look like amusement rides, proficiency is no laughing matter. It's possible for a pilot to be kept from flying in the wake of a poor simulator performance.

"These guys come in prepared," said Lt. Alex Bernstein, an HC-144 Ocean Sentry pilot and instructor who operates the HC-144 simulator at ATC Mobile.

That HC-144 simulator itself, built by Aero Simulation Inc., of Tampa, Fla., is a huge asset for ATC Mobile. The \$29 million machine, designed and built for the Coast Guard, is a full-motion simulator.

While the plane entered service with the Coast Guard in 2006, the simulator only went into operation last December. It required a new 13,500 square-foot building at the ATC to house it.

Since then, it's gained international notice. The HC-144 is built by Airbus Military and is based on its CN-235 military transport, flown by a number of nations. Some of those countries have inquired about procuring time in

ATC activities

- Ship-Helicopter training branch, which serves all flight-deck-equipped cutters
- Sensors Training Branch, which develops procedures and training for the C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance)
- Rescue Swimmer Standardization Team
- Gulf Strike Team at the airport is part of the National Strike Force, along with teams in the Atlantic and Pacific. It responds to threat situations, including oil and hazardous substance leaks, weapons of mass destruction and other threats to public health and safety.
- ATC officers make more than 100 visits to other bases annually.

ATC Mobile's simulator for their own pilots, Bernstein said.

While training is a primary mission of ATC Mobile, the base also serves as an operational Coast Guard air station. It's part of New Orleans-based Coast Guard District 8, which covers an area from Sabine Pass, Texas, to Apalachicola, Fla.

Last year, Hofius said, ATC Mobile conducted 180 search and rescue missions, about one every other day. Mobile-based aircrews, flying the HC-144, support a range of maritime missions, including law enforcement, response to environmental disasters and patrols of territorial waters against incursions by foreign fishing boats. These crews also support Homeland Security missions, such as ports and waterways security around critical infrastructure.

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The Coast Guard's mission is unique within the nation's military branches. While the others are prohibited from domestic law enforcement, the Coast Guard is in the thick of it. It's part military, part law enforcement agency, part regulatory agency, and the cavalry in time of need.

Established in 1790 as the United States Revenue Cutter Service, it was part of the Treasury Department until 1967, when it became part of the Department of Transportation.

It became part of the Department of Homeland Security in 2003. It can be placed in the Department of Defense during times of war.

The Coast Guard has 11 missions: ports, waterways and coastal security; drug interdiction; aids to navigation; search and rescue; living marine resources; marine safety; defense readiness; migrant interdiction; marine environmental protection; ice operations; and other law enforcement.

Economic development - Space

SSC gives SpaceX's Mars plans a boost

SSC plays a key role in a highly successful, innovative commercial space company, testing parts of the powerful engine that will one day boost the company's massive Mars Colonial Transporter...

Stennis Space Center, Miss.

To say that commercial space company SpaceX is ambitious is a huge understatement. Its space vehicles supply the International Space Station and will one day transport astronauts. It's also working on ways to get launchers to land back on Earth vertically, like in movies of old, and creating new spaceships that will take colonists to Mars.

And South Mississippi is playing a major role in development of the next-generation rocket engine that will make SpaceX Mars trips possible.

It's been a year since SpaceX cut the ribbon on its test stand at NASA's Stennis Space Center. Since then, SpaceX has been testing components for its Raptor rocket engine, specifically injectors and combustion chambers, with additional components ready for testing in the near future. In a typical week, SpaceX conducts multiple tests, spokesman John Taylor said.

Getting SpaceX to pick South Mississippi to play a role in the company's future was nothing short of monumental. Mississippi's top elected and economic development officials were on hand at the April 21, 2014, invitation-only ceremony to welcome the company to the Stennis family of tenants.

Brent Christensen, executive director of the Mississippi Development Authority, said SpaceX "strengthens the state's position as an industry leader in the global aerospace sector and

By Lisa Monti



SpaceX Falcon 9 launches with satellites from Complex 40 at Cape Canaveral Air Station, Fla., March 1, 2015

demonstrates to the world that Stennis is an ideal location for aerospace companies with sophisticated research and development needs."

The state of Mississippi and Hancock County's economic development commission assisted in improving the E-2 test stand SpaceX is using for research and development.

"With the strong cooperation of Stennis Space Center, the Mississippi Development Authority and the Hancock County Port and Harbor Commission, SpaceX was able to begin testing at its facility within months of signing its agreement with NASA and Stennis Space Center," said Taylor.

Landing a SpaceX operation at SSC earned the Port and Harbor Commission the top economic development award from the Mississippi Economic Development Council.

Ashley Edwards, HCPHC executive director, called SpaceX one of the most innovative and exciting compa-

nies in the world and just the caliber of world-class companies the county is recruiting.

"We are diligently working with SpaceX to grow their footprint in Hancock County and solidify their Stennis Space Center operation as one of their leading locations for the company's future," Edwards said.

SpaceX is developing the methane-fueled Raptor as a reusable engine for a heavy-lift launch vehicle. SpaceX's goal is to reach Mars in the next 15 or so years. It's the latest in the fast-moving history of Space Exploration Technologies Corp., founded 13 years ago by Elon Musk, co-founder of PayPal and CEO of Tesla Motors.

SpaceX, of Hawthorne, Calif., designs, manufactures and launches rockets and spacecraft, and is a star of the \$52 billion industry. In 2012 it won a \$440 million agreement with NASA to

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About us

This year we celebrate our 10th anniversary. We started tracking aerospace activities in the New Orleans to Northwest Florida region in 2005. Our first brief: Europe's EADS said it was looking in the U.S. for a site to build aerial tankers.

That led to an RSS news feed and weekly column in 2008, which led to our first annual aerospace book in 2011. Next came a quarterly newsletter in 2013, which became a bi-monthly in 2014.

We're an independent team dedicated to telling the aerospace stories from this region, and look forward to our next 10 years.

David Tortorano

Editor

April 7, 2015

dtortorano@tortorano.com

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develop the Dragon spacecraft to transport humans into space. In May 2012 Dragon became the first commercial spacecraft to dock to the International Space Station, deliver cargo and return to Earth.

More recently, NASA chose SpaceX and Boeing for the combined \$6.8 billion contract to transport astronauts to the International Space Station by 2017.

Taylor said SpaceX chose Stennis Space Center based on its long resume of testing for the Apollo and Space Shuttle programs and more recently for government and private sector propulsion systems.

"Stennis is home to some of the most advanced rocket test facilities in the world and decades of experience developing new engine technologies. We are thrilled to work with this talented group to ensure a rapid and comprehensive test program," he said.

The agreement with NASA, announced in 2013, called for SpaceX to revive the dormant E-2 test stand with high-pressure methane capability. Without revealing details, Taylor said SpaceX made "significant investments" upgrading the hardware at the E complex, "investments that will remain for NASA and other private contractors to use at the conclusion of this test effort."

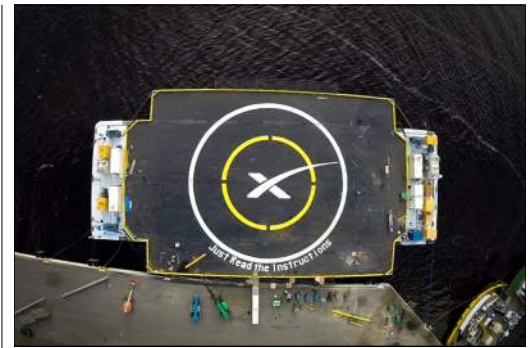
He said SpaceX has also paid for the use of the stand and of Stennis' workforce, "representing true private sector investment into the center."

The number of employees working at Stennis varies, Taylor said, depending on the testing being done. Nationwide, SpaceX employs more than 3,500 people.

"We looked to Stennis to be an R&D test center for the company and will leverage these capabilities to accelerate the Raptor development effort," Taylor said. "In SpaceX's view, Stennis has some of the best high-pressure test stands in the world."

The E complex is one of several that make Stennis the nation's largest rocket engine test complex. Established in 1961, Stennis has adapted to a succession of new programs that have brought opportunities for testing innovative engines and components.

The construction of one new test structure at SSC, however, generated national headlines and criticism about government waste.



Autonomous Spaceport Drone Ship. Photo courtesy of SpaceX

The 300-foot A-3 test stand was built to test engines in a vacuum to simulate high altitude operation up to 100,000 feet.

A-3 was also designed for tests that ran the full duration of actual flights and to gimbal or rotate the engines in the same way they would move during flight. Those capabilities would have given engineers unique opportunities to test engine performance on the ground.

But the rocket program A-3 was built to support was cancelled before construction of the stand was complete. On orders from Congress, the \$350 million-plus stand was finished and then mothballed.

For now, the future of A-3 is on hold. Valerie Buckingham, the Stennis Space Center news chief, said the stand is being maintained "until we have a test objective identified. We don't have any mission right now."

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Corporate HQs: Hawthorne, Calif.

Local operation: Stennis Space Center, Miss. 39529

Established: 2014

Focus areas: commercial space company in this region tests components of its methane-fueled Raptor rocket engine at Stennis

Types of workers: Test engineers

Employment information: <http://www.spacex.com/careers>

www.spacex.com/careers