

Gulf Coast Reporters' League

Louisiana

Mississippi

Alabama

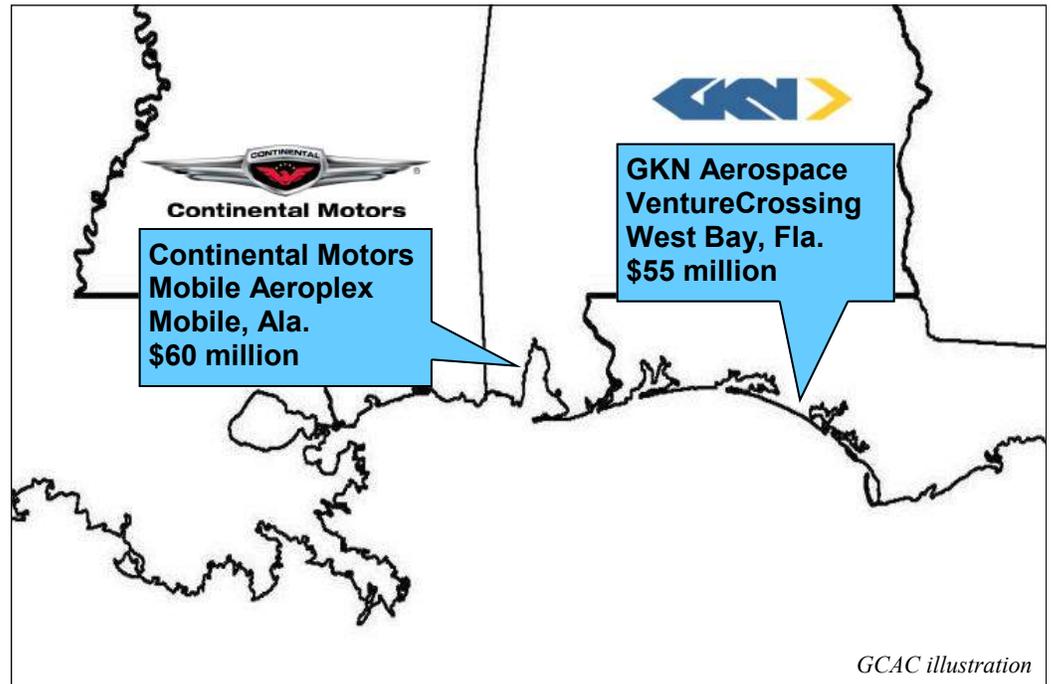
Florida



Vol. IV, Issue V

A bi-monthly update of aerospace activities in the Gulf Coast I-10 region

April 2017



Economic development

Two projects ensure growth

In separate announcements, GKN Aerospace and Continental Motors announced projects for Panama City and Mobile, and underscore the growth of the Gulf Coast aerospace...

Panama City, Fla.

The February announcement was a big win for Bay County: A major aviation supply company, GKN Aerospace, picked VentureCrossing for a multimillion-dollar manufacturing center.

Then in March, long-time aerospace tenant Continental Motors announced that after looking at other sites, it decided to remain at the Mobile Aeroplex in Alabama's port city and expand into a new facility.

The two projects represent a combined investment of more than \$115 million for the two companies. In the case of GKN, it will mean 170 brand new, high-paying jobs, while the Continental Motors expansion/consolidation project is likely to have no impact on the employment level. But it does ensure jobs remain in Mobile.

GKN Aerospace

GKN Aerospace will make a \$55 million capital investment that will create an estimated 170 new highly skilled jobs. Work is under way on the 135,000-square-foot plant at the 1,000-acre VentureCrossings Enterprise Center at West Bay, northwest of Panama City. The center is owned by the St. Joe Co.

First Sites

The GKN Aviation project was a feather in the cap of Gulf Power's Florida First Site program.

The program was created to provide Northwest Florida with a list of sites deemed ready for development. There are nine so far, and two have attracted businesses.

"We started our Florida First Sites program back in 2013 with the hopes of attracting companies just like GKN Aerospace and, ultimately, bringing jobs to the area," said Stan Connally, Gulf Power chairman, president and CEO, in a release.

Each site must complete a process developed by McCallum Sweeney, an international site selection firm. The screening process ensures that pre-work has been completed, taking much of the risk out of the site selection process.

"Panama City wouldn't have been in the game if it hadn't been for this site previously being certified through Florida First Sites," said Becca Hardin, Bay Economic Development Alliance president. "Being able to offer GKN a project-ready site where they could move forward almost immediately was a huge selling point."

The first business to move into a Florida First Site location was Fabbro Marine, a manufacturer of Cape Horn offshore boats. After 20 years in the Santa Rosa Industrial Park, it had outgrown its facility. It opted last July to relocate to Santa Rosa Industrial Park East and build a 78,000-square-foot facility. The project was projected to be a \$4 million investment and with plans to hire 10 additional workers in the next three years.

There are current three Florida First Sites in Milton in Santa Rosa County; two in Panama City in Bay County; two in Marianna in Jackson County; and one each in Crestview, Okaloosa County, and DeFuniak Springs in Walton County.

□□□



The GKN project will bring 170 new jobs to Bay County, Fla. *Courtesy artist rendering*

The project was originally titled Project Gondola for more than a year while several partners worked together to help land the deal. Among the groups that worked with Bay Economic Development Alliance were Enterprise Florida, Gulf Power, University of West Florida, Florida Department of Economic Opportunity, Bay County Board of County Commissioners, CareerSource Florida, CareerSource Gulf Coast and Gulf Coast State College, according to the release.

GKN is a global engineering business that designs, manufactures and services systems and components for original equipment manufacturers. It has more than 58,000 employees in 30 countries and has aerospace, driveline and powder metallurgy divisions.

Aerospace serves military and commercial customers and has 55 manufacturing locations in 14 countries, according to the company website.

Sue Barnes of GKN Aerospace North America, said the facility with \$55 million in capital equipment should open in 2018. Recruitment will begin in the coming months, according to the *News Herald* of Panama City.

Because of customer contractual requirements, Barnes was unable to talk about what products will be made, processes used or the customers the company aims to serve from the Bay County facility, which has room to expand should the need arise.

VentureCrossing is adjacent to Northwest Florida Beaches International Airport, to the west of Tyndall Air Force Base and east and Eglin Air

Force Base. It's also the home of Excelis, which opened a 105-square-foot mine defense production facility here in 2012. Harris Corp., of Melbourne, Fla., acquired Exelis in 2015.

VentureCrossings, with 195 developable acres, is a niche business park for aviation and logistics distribution companies, Hardin said in a story that appeared in the Jan. 26 *News Herald*.

Continental

The company that has built small piston and turbine engines for 50 years decided after looking at other sites to stay put at the Mobile Aeroplex.

The operation, spread out over 11 buildings, will retain one of those buildings but consolidate all other operations in a new 225,000-square-foot plant. It's expected to be fully operational by the end of 2019.

The upgrade is not expected to have an impact on the more than 400 workers in Mobile or the 30 in Fairhope.

The company and its parent, China's AVIC International Holding Corp., will spend \$30 million preparing the site and \$40 million on equipment.

For an in-depth look at Continental Motors, see the [December 2014 Gulf Coast Aerospace Newsletter](#), page 3.

-- David Tortorano

Related news posts:

- Continental's \$60M upgrade [3/5/17](#)
- Bay OKs GKN incentives [2/22/17](#)
- How county got GKN [2/19/17](#)
- Bay County lands GKN [2/15/17](#)

Military

BRAC: Much to lose, but much to gain

Another round of base closings and realignments is on the horizon, and for the heavily militarized Gulf Coast there is a lot to lose - or potentially gain - from another BRAC round...

With military bases and their annexes spread throughout the Gulf Coast I-10 region, it's no surprise there's keen interest when talk turns to base realignments and closings. The region has a lot of potential targets.

According to the Department of Defense Base Structure Report FY 2015, a summary of the military's real property inventory, there are 45 DoD properties between New Orleans and Panama City, Fla. The large number includes bases and associated annexes, and they have a combined replacement value of nearly \$22 billion.

Of those properties, nine major bases - eight with aviation functions - are valued in excess of \$1 billion each. The most expensive is Eglin Air Force Base, with a replacement value (PRV) of \$4.9 billion. In fact, its value has continued to rise.

Eglin's place at the top of the heap is no surprise. With some 700 square miles, it's a key Air Force's research, development, test and evaluation center, home to aerial weapons development. It also has a space radar installation, trains F-35 pilot and maintainers and is home to Army Special Forces. It's notable for its vast land ranges and access to ranges in the Gulf of Mexico.

Eglin is nearly 450,000 acres and has 1,059 buildings with a total of nearly 10 million square feet, by far more buildings than any other base in Florida or the rest of the Gulf Coast I-10 region.

But the PRV of properties is only one part of the equation when it comes to value of the military's presence. For



Eglin AFB: \$4.894B



NAS Pensacola: \$2.567B



Fort Rucker: \$1.895B



Keesler AFB: \$1.835B



Tyndall AFB: \$1.637B



Hurlburt Field: \$1.470B



Camp Shelby: \$1.139B

Nine bases in the region, including eight with aviation activities, each has a replacement values in excess of \$1 billion. The plant replacement value (PRV) is what it would cost to replace all buildings, structures and linear structures at a facility, using today's labor and materials costs. Area cost factors play a huge role in the equation. There are 45 bases and base annexes in the region between New Orleans and Panama City with a combined replacement value of nearly \$22 billion.

a local community, its value is also gauged through its impact on the economy through jobs and the dollars spent locally through paychecks and contracts.

In Okaloosa County alone, home of Eglin and Hurlburt Field, there are nearly 600 DoD contractors. Between 2000 and 2015, some \$9.7 billion in DoD contracts were awarded to contractors in the county, some for work

here, some for work elsewhere within DoD. That huge impact is why locals pay close attention anytime talk turns to BRAC. There's a lot to lose.

But for the military, there's simply too much capacity nationwide. In February, top brass from the Air Force and Army told Congress that another BRAC is needed to reduce the excess and redirect monies towards improving remaining bases. For the Air Force, the

Military base values (in millions)	PRV 2013	PRV 2014	PRV 2015
Eglin Air Force Base, Eglin AFB, Fla.	\$3,921.0	\$4,726.7	\$4,894.8
NAS Pensacola, Pensacola, Fla.	\$2,129.3	\$2,514.8	\$2,567.3
Fort Rucker, Fort Rucker, Ala.	\$1,560.3	\$1,871.9	\$1,895.9
Keesler Air Force Base, Biloxi, Miss.	\$2,067.3	\$1,831.4	\$1,835.8
Tyndall Air Force Base, Panama City, Fla.	\$1,459.6	\$1,556.3	\$1,637.2
Hurlburt Field, Mary Esther, Fla.	\$1,300.6	\$1,484.3	\$1,470.3
MTA Camp Shelby, Hattiesburg, Miss.	\$1,180.5	\$1,122.5	\$1,139.1
CBC Gulfport, Gulfport, Miss.	\$1,208.4	\$1,164.7	\$1,123.6
NAS JRB New Orleans, Belle Chasse, La.	\$799.6	\$769.9	\$1,069.2
Corry Station, Pensacola, Fla.	\$552.6	\$722.1	\$813.8
NAS Whiting Field, Milton, Fla.	\$618.3	\$698.0	\$708.2
NSA Panama City, Panama City, Fla.	\$488.8	\$541.4	\$552.0
Duke Field (Eglin Auxiliary 3), Crestview, Fla.	\$357.7	\$398.0	\$429.4
Saufley Field, Pensacola, Fla.	\$255.4	\$306.6	\$316.3
Cairns Basefield, Daleville, Ala.	\$216.9	\$201.7	\$194.2
Camp Rudder (Eglin Auxiliary Field 6), Holt, Fla.	\$113.3	\$127.6	\$128.7
Gulfport-Biloxi Regional Airport, Gulfport, Miss.	\$147.4	\$116.5	\$119.8
NAS JRB New Orleans, New Orleans, La.	\$129.3	\$109.2	\$111.2
NOLF Silverhill, Daphne, Ala.	\$30.1	\$29.4	\$106.7
NOLF Choctaw, Navarre, Fla.	\$82.2	\$91.7	\$95.0
NOLF Holley, Navarre, Fla.	\$29.9	\$74.4	\$77.0
Whiting Pines, Milton, Fla.	\$59.2	\$77.5	\$72.7
West Bank, New Orleans, La.	\$545.7	\$569.9	\$56.6
Lynn Haven Defense Fuel Sup, Lynn Haven, Fla.	\$40.8	\$45.3	\$46.4
NOLF Brewton, Brewton, Ala.	\$37.2	\$37.1	\$43.5
Shell Basefield, Enterprise, Ala.	\$47.1	\$45.8	\$43.1
CBC Gulfport Lakeside Housing, Pascagoula, Miss.	\$41.6	\$37.2	\$38.7
Barin Field, Foley, Ala.	\$40.5	\$40.4	\$36.0
NOLF Evergreen, Evergreen, Ala.	\$25.0	\$31.2	\$34.4
NOLF Summerdale, Summerdale, Ala.	\$30.7	\$30.7	\$33.0
NOLF Wolf, Summerdale, Ala.	\$29.3	\$28.4	\$30.5
NOLF Santa Rosa, Milton, Fla.	\$34.5	\$36.3	\$26.2
OLF Bronson, Pensacola, Fla.	\$18.9	\$22.5	\$23.3
NOLF Spencer, Pace, Fla.	\$19.2	\$22.0	\$22.8
Camp Keller (De Soto), Biloxi, Miss.	\$19.5	\$19.8	\$20.1
Toth Stagefield, Dothan, Ala.	\$15.2	\$16.4	\$17.8
Camp Shelby Assault Runway, Camp Shelby, Miss.	\$16.5	\$17.3	\$17.3
Skelly Stagefield, Kinston, Ala.	\$13.4	\$14.7	\$14.7
10C Stagefield, Fort Rucker, Ala.	\$14.0	\$14.1	\$14.1
Stinson Stagefield, New Brockton, Ala.	\$14.0	\$14.1	\$14.1
Hunt Stagefield, Ozark, Ala.	\$12.2	\$13.8	\$13.8
Cape San Blas Tracking Annex D-3, Port St. Joe, Fla.	\$12.4	\$13.1	\$13.3
Goldberg Stagefield, Ozark, Ala.	\$12.2	\$13.1	\$13.1
Destin Moreno Point, Destin, Fla.	\$11.1	\$12.5	\$12.5
Dothan Regional Airport (ANGS), Dothan, Ala.	n/a	\$10.3	\$10.7
Totals	\$19,758.7	\$21,642.6	\$21,954.2

Source: DoD Base Structure Report Fiscal Year 2015 Baseline (as of Sept. 30, 2014).

redundant capacity is 25 percent of its holdings, according to published reports. The military for some time now has been wanting another BRAC, but Congress has resisted. Now that resistance may finally be ending.

The post-Cold War cost-cutting efforts have meant the closing of more than 350 military installations in five Base Realignment and Closure rounds in 1988, 1991, 1993, 1995 and 2005. For the Gulf Coast region, there have been some losses over the years, as well as some gains.

But it's the closure part of the process that gets the most attention. The 1993 BRAC led to the closure of the Naval Aviation Depot in Pensacola, Fla., and Naval Station Mobile, Ala.

The 2005 BRAC moved the Naval Aerospace Medical Research Lab from Pensacola to Ohio, closed Naval Station Pascagoula, Miss., and the Naval Support Activity in the Algiers area of New Orleans. Fort Rucker's Aviation Technical Test Center was moved to Redstone Arsenal, Huntsville, Ala.

But the wins are also notable. The site of the closed aviation depot in Pensacola eventually became the Naval Technical Training Center, and as a result of the last BRAC the 7th Special Forces Group moved from Fort Bragg, N.C., to Eglin in 2011.

That hasn't escaped lawmakers.

"BRAC should be viewed as an opportunity to attract more missions," said U.S. Rep. Matt Gaetz, R-Fla., according to the *Pensacola News Journal*.

"We should not begin that process upon the announcement of a BRAC. We should be working now on priorities to harden our mission in Northwest Florida."

The same could be said for any of the other areas along the Gulf Coast with a heavy reliance on the military as a key part of their economies. But in all cases, it will be the value of the base to the military mission that will be key to the process.

-- David Tortorano

Space

Budget means systems go for SLS, Orion

Uncertainty for two NASA facilities ended in March when the president signed a bill that ensures continuation of the Space Launch System and Orion crew vehicle programs...

Stennis Space Center, Miss.

The test late last month of the “brain” of an engine that will be used on the first flight of the new Space Launch System (SLS) was routine enough. But it was significant as the first test since the deep space program got a budget ensuring it will continue in the Trump administration.

For NASA, it’s always uncertain what will happen when a new administration comes to Washington. Programs from the Bush administration changed with Obama, and when Trump was elected president change was again anticipated.

Uncertainty ended for the most part March 21 when Trump signed the bipartisan NASA Transition Authorization Act of 2017, authorizing funding for NASA while setting a new goal to send humans to Mars in the 2030s. It gives the space agency \$19.5 billion in funding for fiscal year 2018. Sponsored by Sen. Ted Cruz (R-Texas), it had seven co-sponsors, including Bill Nelson, (D-Fla.) and Marco Rubio (R-Fla.)

“We are grateful for the longstanding support and trust of the American people, which enables our nation’s space, aeronautics, science, and technology development programs to thrive,” said NASA acting administrator Robert Lightfoot. “Our workforce has proven time and again that it can meet any challenge, and the continuing support for NASA ensures our nation’s space program will remain the world’s leader in pioneering new frontiers in exploration, innovation, and scientific achievement,” he said.



RS-25 controller that will be used on first SLS flight tested at SSC.

NASA photo

Importantly for the Gulf Coast region, the bill not only affirms continued funding for SLS and the Orion crew vehicle, but also continues to support the development of commercial space flight. That in itself is significant since commercial space companies use both Michoud Assembly Facility (MAF) in New Orleans and SSC.

The bill

NASA is receiving slightly more than the \$19.1 billion Trump requested in

his 2018 budget blueprint, which would have been a modest cut for the agency, which is currently operating on a budget of \$19.3 billion for the fiscal year that began Oct. 1, according to a March 21 story in *The Hill*.

The bill amends current law to add human exploration of Mars as a goal for the agency. It also supports use of the International Space Station (ISS) through at least 2024, and supports private sector companies partnering with NASA to deliver cargo and exper-

iments. It also advocates deep cut in NASA's Earth science programs, but maintains support for a robotic mission to Jupiter's moon Europa.

Trump also plans to re-launch the National Space Council to coordinate U.S. space policy. The council was authorized by law in 1988, near the end of the Reagan administration, but ceased to operate soon after Bill Clinton took office in January 1993, according to the *Chicago Tribune*.

One of the key issues that still has to be addressed is who will become the new NASA administrator. The president still has not named anyone to the key post.

Gulf Coast work

The continuation of the deep space is important to both SSC and MAF, which are involved in building some of the space hardware and testing the propulsion systems.

The core stage of the SLS, being built by Boeing, is slowly but surely materializing at the huge MAF complex. The largest component, a 133-foot liquid hydrogen fuel tank, has been completed. Also at MAF, Lockheed Martin builds the Orion crew module. The first test flight of an unmanned Orion, Exploration Flight Test 1, was in December 2014 when it was launched by a Delta IV rocket for a four-hour, two-orbit test.

The first Orion that will be launched atop the SLS arrived at Kennedy Space Center this past November for additional assembly and testing.

A tornado hit Michoud in early February and caused extensive damage, but NASA said the storm did not damage any SLS or Orion hardware.

Meanwhile, some 35 miles away at SSC, testing is underway on the SLS first stage engines, the RS-25. Four of the engines, along with a pair of solid rocket boosters, will be used to launch SLS in 2018.

The first RS-25 engine controller that will be used on the first flight of the SLS was tested March 23. The new



Aerojet Rocketdyne technicians check new RS-25 controller.

Photo courtesy NASA

controller has the electronics that operate the engine and communicate with the SLS vehicle.

Engine Controller Unit-2 (ECU-2) was installed on RS-25 development engine No. 0528 and test fired for 500 seconds on the test stand. Once test data is certified, the engine controller will be removed and installed on one of four flight engines that will help power the first integrated flight of SLS and the Orion spacecraft.

This year, two more engine controllers for the first SLS mission will be tested on this development engine and then installed on flight engines.

The fourth controller will be tested when NASA tests the entire core stage during a "green run" on the B-2 Test Stand at SSC. It will involve installing the core stage on the stand and firing its four RS-25 flight engines simultaneously, as during a mission launch.

A little more than a month before the controller test, NASA engineers at SSC conducted the first RS-25 test of 2017 on the A-1 Test Stand to collect data on the performance of the rocket engine. That test of development engine No. 0528 ran 380 seconds.

The engines for the first four SLS flights are former space shuttle main

engines, which were tested extensively at SSC and are some of the most proven engines in the world.

Engineers are conducting an ongoing series of tests this year for SLS on both development and flight engines for future flights to ensure the engine, outfitted with a new controller, can perform at the higher level under a variety of conditions and situations.

SSC is also preparing its B-2 Test Stand to test the core stage for the first SLS flight with the Orion space capsule, known as Exploration Mission-1. That testing will involve installing the flight stage on the stand and firing its four RS-25 engines simultaneously.

SSC, in addition to its work for NASA, also works with commercial companies, such as SpaceX, to test the engines and components they will need in order to achieve their own space missions.

-- David Tortorano

Related news posts:

- Controller tested for SLS [3/23/17](#)
- SSC conducts RS-25 test [2/22/17](#)
- AR1 sets U.S. record [2/22/17](#)
- SpaceX aces launch landing [2/19/17](#)

Analysis

Opportunities abound for innovators

If you're a small business owner, you've probably thought about looking for venture capital. You may have already gone that route.

But there's another partner you might look at who will not want to have any control over your company. It's the federal government, specifically the Department of Defense.

The Doolittle Institute in Fort Walton Beach held a SBIR/STTR Technology Workshop earlier this month. About 60 participants showed up for the two-day event, where day two was for one-on-one meetings.

The meeting focused on the Air Force Research Lab's Munitions Directorate at Eglin Air Force Base, which develops convention, air-launched munitions technologies for the U.S. military. Eglin is a major research, development test and evaluation center for the Air Force, spending as much each year on R&D as some of the major research universities in the country.

For tech-focused small businesses, there are ample opportunities to develop technologies and partner with DoD via the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. The idea behind both programs is to take technologies developed initially for the military and turn them into commercial products.

One of the ways to start getting involved is to get in touch with the Doolittle Institute. It serves as a conduit between the Air Force and small businesses. You get a lot more information on DI by taking a look at a feature story we had in our [August 2016](#) newsletter, "DI: Putting innovation on the fast track." It starts on page 5.

You can reach them at 850-226-4383. You can also read more at the institute's [website](#).

Eglin Air Force Base is just one of the hot spots for innovation where a

small business can find an interesting partner. Over at Stennis Space Center, Miss., there are also ample opportunities to get involved in the SBIR/STTR programs. In our [February 2017](#) issue we had a story about a redesigned section of the Stennis Space Center site designed to make it easier to find the technologies that can be developed. "The technology goldmine in our midst" starts on page 3.



David Tortorano

Island drones

Since we're on the subject of high tech and innovation, it's hard to think of anything more innovative than drones. They're ubiquitous, and now they're coming to the airport on Dauphin Island in Alabama.

Mississippi State University's Raspert Flight Research Laboratory in Starkville and Alabama's Mobile County Commission [signed](#) a memorandum of understanding that will allow drones to use the airport for a project involving littoral surveys.

MSU is working with the Naval Meteorological and Oceanographic Command at Stennis Space Center, Miss., on the demonstration project that will use an Outlaw SeaHunter equipped with LIDAR (Light Detection and Ranging) system to measure water depth in coastal areas too shallow for survey vessels. The demonstration will be held from mid-May to early June.

Manned aircraft equipped with LIDAR are currently used to survey coastal areas. The Joint Airborne Lidar Bathymetry Technical Center of Expertise at Stennis International Airport in Kiln, Miss., performs operations, research and development in airborne

lidar bathymetry in support of coastal mapping and charting requirements for the Army Corps of Engineers, the Naval Meteorological and Oceanography Command and the National Oceanic and Atmospheric Administration.

So why use drones? Let's face it, there's a major push to use unmanned system in every realm now handled by manned systems.

The Gulf Coast region has its share of work in the field. Anyone who follows aerospace in our region knows work on the Global Hawk and Fire Scout unmanned aerial systems is done in Moss Point, Miss., and the military bases in the region also use them in a wide variety of ways.

If you're interested in the field of robotics, you're in luck. The Florida Institute for Human and Machine Cognition in Pensacola, Fla., is a leading research organization in the field of artificial intelligence and robotics. Its co-founder and CEO, Ken Ford, will be inducted into the Florida Inventors Hall of Fame in September.

IHMC's new research facility was dedicated last fall. It features a second floor observation corridor that allows visitors to see the robotics work being done on the first floor. You can learn a lot more at the IHMC [website](#)

Mississippi out, Alabama in

OK, this one isn't a Gulf Coast I-10 region aerospace story, but it does illustrate how fortunes can change, and how one state's misfortune can be another state's win.

Well, that is if the Air Force picks one particular company for a big project. And the folks in Mobile know how that can go. Just ask them about the Air Force tanker project.

Here's what I'm talking about. Last year Mississippi was happy indeed that it had been chosen by Raytheon and partner Leonardo to build training air-

craft if the team won the T-X competition. The plan was to build them in Meridian, at the airport. They knew that it would only happen if the Leonardo-Raytheon bid won.

But it fell apart even before that when the Leonardo-Raytheon partnership went kaput.

Now Leonardo is back in the competition with its T-100 trainer, and should the company win the aircraft will be [built](#) in Tuskegee, Ala. Upward of \$200 million will be spent on construction including buildings, infrastructure and equipment, according to a joint news release from the governor's office and Leonardo.

This trainer is based on the Alenia Aermacchi M-346, currently operated by the air forces of Italy, Israel, Singapore and Poland. Alenia Aermacchi became part of Finmeccanica in 2016, a major company that was rebranded Leonardo in 2017.

The Alabama plant will perform structural sub-assembly, integration, final assembly and conduct research and testing at the site, according to the release. Leonardo would lease a new facility built by a public-private partnership; the total investment in buildings, infrastructure and equipment would exceed \$200 million. Plans call for creating 750 jobs over 10 years.

But don't forget the if. It still has to win the competition to replace the Air Force's T-38 Talon.

T-45 problems

The Navy brass is tackling the issue raised by a lot of its T-45C instructors, vowing to get to the bottom of the safety issue.

Pilots at three training bases, Naval Air Station Pensacola, Fla., Naval Air Station Meridian, Miss., and Naval Air Station Kingsville, Texas, have complained about physiological episodes, believed to be caused by problems with the oxygen system.

Late last month about 40 percent of training flights at the three bases were

anceled because of the concern. The pilots, in fact, are expected to raise issues like this.

The Navy currently has 197 of the two-seat, single-engine, carrier-capable Goshawks based at the three bases.

This all made me think about the [hypoxia-like symptoms](#) a dozen Air Force F-22 pilots experienced back in 2012. The Air Force made two changes, one to the pressure garment that was inflating at times when it was not supposed to. The other change was removing a canister filter from the oxygen delivery system.

The Air Force trains F-22 pilots at Tyndall Air Force Base, Fla., and also has an operation squadron there.

Not your average globe

The Department of Defense's newest weather [training aid](#) is called Science on a Sphere, a 48-inch carbon fiber globe suspended from the ceiling of a room at the 335th Training Squadron's Weather Training Complex at Keesler Air Force Base, Miss.

It uses computers with high-end graphic cards and video projectors to display data onto the globe. Developed by the National Oceanic and Atmospheric Administration as an education tool, it helps illustrate earth weather science through animations of atmospheric storms, climate change and ocean temperatures. The globe doesn't move, but gives that illusion.

Instructors for Weather Initial Skills and Weather Officer Courses use the system as a tool to help students gain an enhanced understanding of fundamental atmospheric and oceanographic processes.

Laser-armed AC-130

I had the great privilege of being aboard an AC-130 gunship for a training flight many years ago, and among other things got to witness the absolutely awesome firepower of this unique weapon system of Air Force Special Operations. How can you not

be impressed by a flying 105mm howitzer?

The AC-130 I was in also had Gatling guns that can fire thousands of rounds a minute as the aircraft circles its target, and Bofors cannon. Armament has changed from model to model, including giving it stand-off capability. Throughout the years, troops on the ground have been quite happy when an AC-130 joins a fight.

Now the Special Operations Command at Hurlburt Field, Fla., plans to [install and test](#) lasers on its AC-130 gunships within a year. That's according to Lt. Gen. Brad Webb, head of AFSOC.

General Atomics and other companies have been spending their own research and development money on the capability. Webb said AFSOC hasn't decided where the laser would go. The tests will help determine that, as well as which mix of weapons is best.

Whatever they come up with, this workhorse will continue to be one of the most lethal weapons in the U.S. arsenal. Of that I'm certain.

Training center opens

The CAE Dothan Training Center has officially [opened](#) at Dothan Regional Airport in Alabama. It's designed to provide fixed-wing flight training to the Army, Air Force and other customers.

CAE is responsible for providing all the training required for experienced rotary-wing aviators transitioning to fly the services fleet of more than 350 fixed-wing aircraft. More than 600 Army and Air Force pilots will be trained annually. The center is 10 miles from Fort Rucker.

□□□



To keep up with aerospace news from the Gulf Coast I-10 region, [sign up](#) for the free daily news feed, delivered to you inbox.