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The right mix at the right time

When Airbus announced in the summer of 2012 that it would build a \$600 million A320 final assembly line in Mobile, Ala., the significance was hard to overstate. The new plant, scheduled to produce its first plane in 2016, will help Airbus cope with a huge order backlog for its single-aisle plane. Over time, it is likely to attract suppliers and perhaps other aerospace/aviation activities to the region.

But for the region as a whole, the Airbus plant had an additional impact that is likely to be felt for years to come. It helped shine a light on a 350-mile stretch of Interstate 10 formed by portions of four states. And what people are noticing is that Airbus is simply the latest, most high profile aerospace activity in a region with a long aviation history.

It's home to two NASA operations involved in building and testing the next generation of

U.S. aerospace industry	
Sales (est. 2014)	\$232.1 billion
Work force (prelim. 2013)	618,200
<i>Source: 2013 Year-End Review and Forecast from the Aerospace Industries Association</i>	

NASA spaceships, and where the new breed of private space companies builds and tests space hardware. It's also where research is conducted into high-performance materials, artificial intelligence/robotics, sensors and more. It's also a region with significant military aviation activities, including pilot training, aerial weapons development and cybersecurity.

What may be one of the biggest selling points for the I-10 aerospace corridor is that four states, each involved in aerospace, have a piece of the corridor. The Northwest Florida portion is part of the No. 2 state for aerospace, aviation

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and space establishments. Florida has more than 2,000 companies employing 82,000 plus workers, and it's continuing to grow.

"Florida has served as an epicenter of the aerospace and aviation industries for decades," said Florida Secretary of Commerce Gray Swoope, president and CEO of Enterprise Florida Inc. "Positioned in one of the largest aerospace corridors in the world, the state has seen a dramatic increase over the past three years in the number of aviation and aerospace projects announced by companies such as Northrop Grumman, Embraer, Lockheed Martin, and Pratt & Whitney."

Swoope also points out that "virtually every major defense contractor from the U.S. and abroad has significant operations in Florida from the Panhandle to the Space Coast, making our state an ideal location to leverage supply chain connectivity, infrastructure and access to an experienced talent pool. Florida's vast assets provide aerospace businesses the ability to maintain a competitive edge."

The Alabama portion of the Gulf Coast I-10 corridor is also part of a state with significant aerospace activities, notably in north Alabama's Huntsville, home of the Army's Redstone Arsenal and NASA's Marshall Space Flight Center. The state has more than 300 companies engaged in the aerospace and defense sectors, according to the Alabama Aerospace Industries Association. The supply chain includes original equipment manufacturers, technical services, maintenance, repair and overhaul, and parts, suppliers and vendors.

Alabama, Florida, Louisiana and Mississippi combined rank as the fourth largest aerospace region in the country, according to the Aerospace Alliance, a four-state group representing the aviation and aerospace interests of all four. Each has aviation clusters, including Florida's Space Coast, Huntsville and Decatur, Ala., and east central Mississippi's Golden Triangle, which includes Columbus, Starkville and Mississippi State University.

Aerospace activities at a glance

- Rocket and jet engine testing
- Rocket engine, satellite assembly
- Piston engine assembly
- Unmanned aerial system plant
- Areas approved for unmanned flights
- Jetliner final assembly line
- Multiple MRO activities
- Military pilot training
- Military electronics/cyber training
- Aviation specialties training
- National Guard aerial combat center
- National Guard helicopter repair depot
- Restricted land and water ranges
- Aerial weapons RDT&E
- Applied geospatial technologies
- Human-machine cognition research
- Advanced manufacturing research
- 43-acre manufacturing plant
- Multiple aerospace parks
- Multiple technology transfer offices
- Multiple business incubators

But the Gulf Coast I-10 aerospace corridor is the only aviation cluster in the region that involves all four states. It's a microcosm of their activities, including space, military aviation, assembly, weapons development, unmanned aerial systems and more.

Many of the I-10 region's aerospace activities put it in select "clubs." With an Airbus assembly line, it joins a small group of sites where large passenger jets are assembled, and having two NASA facilities puts it in a small group involved in spaceflight. Further, it's the only region in the country that trains pilots to fly the fifth-generation F-35 and F-22 jet fighters. Unique capabilities like those are important, if the region wants to expand its aerospace footprint, and it clearly does.

That the four states and regions within them would pursue aerospace is no surprise. Aerospace is an economic jewel, a research intensive

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\$232 billion industry that uses highly paid talent ranging from those who design aircraft and those who assemble them to those who fly or maintain them. It involves both civilian and military activities.

According to the Aerospace States Association, the demand for U.S. aerospace products is huge, with almost \$81 billion in exports and a positive trade balance of nearly \$49 billion. In aerospace parts manufacturing, over 501,000 Americans are employed in jobs that pay 50 percent higher than other manufacturing jobs at a mean annual wage greater than \$64,000 and mean hourly wage of nearly \$31.

That's not lost on Alabama, Florida, Louisiana and Mississippi, whose leaders are pursuing more aerospace activities, notably foreign investments. And that's important at a time when Pentagon belt-tightening brings uncertainty to the military, historically a pillar of the economy of all four of the states.

While each of the states and local communities have economic development groups that pursue aerospace, the Gulf Coast aerospace

corridor between New Orleans and Northwest Florida does not have an organization acting as its champion. True, there are multiple economic development groups that sometimes work together, but there's no single go-to group with a broad understanding of the four-state cluster's capabilities. The truth is, while many in the region talk about "regionalism," there's little understanding of the capabilities of the four-state I-10 region taken as a whole.

The samples of the lack of understanding are numerous. A January 2014 white paper by the Mississippi Gulf Coast Business Council about South Mississippi's scientific and military assets admitted that "many of us were surprised to learn that the Mississippi Gulf Coast already has an impressive and economically significant mix of military and aerospace installations, and related technology-based enterprises employing high-skilled, high-wage professionals." That these key business leaders were surprised by what's in their own backyard makes it clear they would be hard pressed to describe the broader region, let alone leverage the assets.

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During the 2011 Aerospace Alliance symposium in Sandestin, Fla., a representative from an aerospace company with an operation at NASA's Stennis Space Center told others at his table that he was surprised to learn unmanned aerial vehicles were built in Moss Point, Miss., about 60 miles to the east of SSC.

The need for a comprehensive explanation of this region's aerospace capabilities, and how that capability fits in with the capabilities of the four states, is what prompted the authors to compile this book.

Here are the key findings of this study:

- The region is heavily involved in a range of aerospace and aerospace-related activities, including aircraft manufacturing, space flight, propulsion systems, military aviation, unmanned aerial vehicles, robotics, aerial weapons, high-performance materials, advanced manufacturing and RDT&E.
- Aerospace is a target industry for Alabama, Mississippi and Florida, and Louisiana has targeted advanced manufacturing. Multiple local economic development groups have also targeted aerospace, and state and local leaders have joined in a mix of regional alliances to pursue the aerospace industry.
- While the I-10 corridor has the variety of aerospace activities that could attract major federal projects, there is no single "go-to" organization that represents the entire corridor or promotes it as a location.
- The decision of Airbus to establish an aircraft assembly plant at Alabama's Mobile Aeroplex will, over time, lead to suppliers and vendors moving to the region. Some will want to be in close proximity to the plant, others will want to be further away to keep from competing for workers.
- The additional aerospace activities directly or indirectly caused by the Airbus plant will take many years to develop. Potential newcomers will keep an eye on progress of the plant before making what could be an expensive investment in the region.
- Airbus in Mobile and the F-35 training center at Eglin Air Force Base, Fla., are both showcases for the Gulf Coast Interstate 10 region on the global stage. But there are others, including the region's airports, science and technology learning centers, manufacturing and research operations that should be promoted on the world stage.
- The region is served by commercial and non-commercial, long-runway airports. Many of them include military aviation activities and have land and buildings available for new tenants.
- Fuselage work on the Global Hawk and final assembly of the Fire Scout unmanned aerial systems is done in Moss Point, Miss., by Northrop Grumman. The company has room to expand at that location.
- The close proximity of Mobile Aeroplex in Mobile, Ala., and the Jackson County Aviation Technology Park in Moss Point, Miss., forms a hub of aircraft manufacturing in the central portion of the corridor.
- The United States is a low-cost leader among developed nations when it comes to manufacturing, and reshoring is a growing trend. That bodes well for the region as it seeks more foreign investments and promotes its manufacturing capabilities.
- Stennis Space Center, Miss., and Michoud Assembly Facility, New Orleans, each plays a role in federal and commercial space ventures. Each has under-utilized equipment, expertise to share and some 4,700 acres of land available for development.
- The Department of Defense lists 45 sites totaling more than 718,000 acres in the I-10 region with a combined plant replacement value of \$19.7 billion. Three of the bases, all with aviation activities, are among the most valuable in the nation.
- The I-10 military activities include the Navy Department of Defense Supercomputing Resource Center at Stennis Space Center,

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Miss. In 2012 it more than tripled its computing power. It's among the world's Top 500 most powerful.

- Military activities bring billions into the region through payroll, contracting and other activities. Between 2000 and 2013, 4,664 companies in 19 I-10 counties/parishes were awarded 71,935 DoD contracts valued at more than \$76.7 billion.
 - Military aviation activities in the region includes pilot and flight officer training, weapons developments, search and rescue, unmanned aerial systems, logistics and a variety of combat missions.
 - The military's huge complex in this region is a vast schoolhouse that trains tens of thousands of students each year who earn wings, hone combat skills or learn technical fields, including cybersecurity.
 - The U.S. Coast Guard has port activities throughout the region, as well as the Aviation Training Center in Mobile, Ala., where all Coast Guard aviators train after initial training with the Navy.
 - Major U.S. aerospace and defense companies have operations in the Gulf Coast region, including many with multiple sites. Foreign aerospace and defense companies and non-aerospace companies also have a sizeable footprint in the region.
 - There are 16 universities, several with "very high" research activity, that operate or have interests in the I-10 region. One community college is among the top associate degree producers in science, technology, engineering and math in the United States.
 - There are multiple technology transfer offices and incubators in the region, along with a patent association formed in 2010 to focus on intellectual property issues.
 - R&D activities in the region involve federal, state and corporate players. Eglin Air Force Base, Fla., spends more in R&D each year than many prestigious universities.
 - Aerospace activities are in growth sectors, including unmanned aerial systems, advanced materials and geospatial technologies. In addition to unmanned aerial systems, three federal operations are involved in some aspect of unmanned underwater vehicles. Okaloosa County, Fla., is also developing an indoor unmanned systems center that will include air, land and maritime.
 - Unmanned systems are flown at Eglin Air Force Base, Fla., in military air space, and at Camp Shelby, Miss.
 - Aerospace and technology parks have been established or are developing across the region, including a 3,900-acre park at Stennis Space Center, Miss. In addition, NASA hopes to turn more than 800 acres around New Orleans' Michoud Assembly Facility into an advanced manufacturing park. Michoud is home to the National Center for Advanced Manufacturing.
 - States and local areas have workforce programs to train blue and white collar workers for the aerospace and related industries. Many of the programs are company specific. Alabama, Louisiana, Mississippi and Florida are right-to-work states.
 - According the U.S. Department of Labor's Bureau of Labor Statistics, the Crestview-Fort Walton Beach-Destin MSA in Florida has the nation's 10th highest concentration of aerospace engineers. In Florida, only the Palm Bay-Melbourne-Titusville MSA has a higher concentration.
 - High schools in the region have programs targeting aerospace, advanced materials and geospatial career fields. A career academy in Northwest Florida lets students engage in real-world projects in science and math to achieve high school and college credit and industry-recognized certification.
- The authors of this study hope it will provide the public, development officials and politicians with a better understanding of the capabilities of this region in a range of science, technology,

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engineering and math and medical fields. The Gulf Coast Reporters' League believes there's a lack of appreciation of the level of capabilities found in the region. Understanding what's here and working together can benefit the broader Gulf Coast region.

During the first regional aerospace summit in 2011 in Sandestin, Fla., Richard Aboulafia, vice president of analysis at the Teal Group, said the region is one of the most varied aerospace clus-

ters he's seen, and he said a regional approach is "absolutely essential."

He saw it then, and it's clear the need remains. It's time for a regional champion to step up to the plate.

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Samples of aerospace jobs in I-10 region					
Aerospace engineers					
Metropolitan area	jobs	Hourly mean wage	Annual mean wage	Hourly median wage	Annual median wage
Crestview-Fort Walton Beach-Destin	210	\$43.26	\$89,980	\$41.97	\$87,300
Southeast Alabama nonmetropolitan area	70	\$48.89	\$101,680	\$50.11	\$104,220
New Orleans-Metairie-Kenner	NA	\$54.47	\$113,290	\$53.92	\$112,160
Aircraft mechanics and service technicians					
Pensacola-Ferry Pass-Brent	550	\$25.56	\$53,160	\$26.09	\$54,280
New Orleans-Metairie-Kenner	430	\$26.35	\$54,810	\$27.32	\$56,820
Gulfport-Biloxi	320	\$26.57	\$55,260	\$27.17	\$56,520
Panama City-Lynn Haven-Panama City Beach	240	\$25.04	\$52,070	\$25.78	\$53,630
Crestview-Fort Walton Beach-Destin	180	\$27.35	\$56,890	\$27.61	\$57,420
Southeast Mississippi nonmetropolitan area	170	\$33.70	\$70,090	\$37.15	\$77,260
Tallahassee	50	\$26.43	\$54,980	\$24.97	\$51,940
Baton Rouge	NA	\$26.34	\$54,800	\$26.05	\$54,170
Southwest Alabama nonmetropolitan area	NA	\$23.71	\$49,320	\$22.45	\$46,700
Avionics technicians					
Southeast Alabama nonmetropolitan area	240	NA	NA	NA	NA
Southwest Alabama nonmetropolitan area	200	\$22.01	\$45,790	\$21.65	\$45,020
Pensacola-Ferry Pass-Brent	80	\$24.43	\$50,820	\$24.74	\$51,460
Gulfport-Biloxi	40	\$28.27	\$58,800	\$28.26	\$58,770
Crestview-Fort Walton Beach-Destin	30	\$24.84	\$51,670	\$25.45	\$52,940

Source: U.S. Department of Labor, Bureau of Labor Statistics. Compiled May 16, 2014