

# Gulf Coast Reporters' League

Louisiana

Mississippi

Alabama

Florida



2018  
Update

Vol. V, Issue VI

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

June 2018



Gulf Power



Additional support  
provided by

Trent Lott International  
Airport, Moss Point, Miss.

Copyright 2018, Tcp/GCRL

6TH EDITION UPDATE

## GULF COAST AEROSPACE CORRIDOR

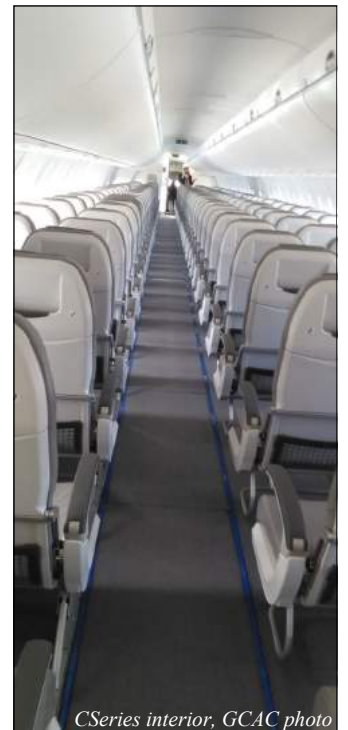
2017-2018

A second jetliner assembly line, another F-35 reprogramming lab, a new maintenance, repair and overhaul facility, additional rocket engine assembly and testing, and continued work on NASA's Space Launch System are among the aerospace activities that occurred in the year since the *Gulf Coast Aerospace Corridor 2017-2018* reference book was published.

Growth has marked nearly every aspect of the Gulf Coast region's sizeable and varied aerospace/aviation sector, along with a continued push to train the field's future workforce.

Among the highlights in the past year:

- Canada's Bombardier said it would build CSeries jetliners in Mobile, Ala., in a deal with Airbus that will close July 1, leading to a second jetliner assembly line in Mobile.
- A new \$46 million maintenance, repair and overhaul hangar that will employ 400 workers opened in June at Florida's Pensacola International Airport.
- At NASA's Stennis Space Center, Miss., Aerojet Rocketdyne assembled its first AR-22 rocket engine for Boeing's Phantom Express, a DARPA's spaceship program.
- A second F-35 reprogramming lab, this one for Australia, Canada, and the United Kingdom, is transitioning from Fort Worth, Texas, to Florida's Eglin Air Force Base.
- Relativity Space and Stratolaunch Systems, two commercial space companies, opted to test their rocket engines at Stennis Space Center.
- UTC Aerospace's expanded facility in Foley, Ala., delivered its first fully integrated "neo" engine and nacelle. Safran opened a nacelles operation in Mobile.
- NASA at Stennis Space Center launched a search for a



non-federal private partner to lead in development of a 1,100-acre technology corridor called Enterprise Park.

- In an arrangement expected to be finalized this summer, L3 Crestview Aerospace will be sold to a New York investment firm in a \$540 million deal.
- Airbus in Mobile is now building four A320 series jetliners every month, with its latest, an A321neo, being delivered to Hawaiian Airlines in June.

Economic development leaders have good reason to target aerospace, a multibillion-dollar, research intense, innovative enterprise that produces technologically advanced aircraft, space and defense systems.

It involves civilian and military activities and uses talent ranging from those who design aircraft and those who assemble them to those who fly and maintain them. Workers are highly skilled and pay is above average.

In the 2017-2018 book, Richard Aboulafia of the Teal Group put it this way: “The Gulf Coast aerospace corridor has all the right conditions for future growth, a pro-business environment, strong political support for the industry, and great working conditions all mean good things for the future.”

The I-10 region between Southeast Louisiana and Northwest Florida is where the aerospace interests of Alabama, Florida, Louisiana, and Mississippi intersect. It’s a showcase for all four, where growth in one area of the corridor can benefit all of them.

The region must continue to focus on attracting aerospace while the interest is high, and that it needs to continue to develop a highly skilled workforce.



## Chapter updates



### 3 Aerospace products: C Series jet, AR-22 engine add to mix

It was major news when Mobile, Ala., became the location for an Airbus assembly line, and now Bombardier plans to build planes here. But that’s just the high profile products in a region, which also recently built a rocket engine for a futuristic, hypersonic military spaceplane.



### 4 Space activities: Is there a spaceport in region’s future?

Stennis Space Center is still attracting commercial space activities, with several companies opting to test and assemble engines there. Louisiana’s nearby Michoud Assembly Facility is also heavily involved in the new space race. Now a county is looking into setting up a spaceport.



### 5 Military aviation: New F-35 lab, solar panels, the 815th

Military pilots get their initial training in the Gulf Coast, and experienced pilots learn how to fly the F-35 and F-22. It’s now home to a second F-35 reprogramming lab. It’s a vast schoolhouse for the military in a range of fields, including cyber.



### 6 R&D/innovation: By any name, it’s still innovation

The Air Force, Navy, NASA, universities, and private companies have centers for innovation, and there’s a push to find partners to develop technologies that can make their way to the broader public. One such organization has rebranded itself.



### 7 Education pipeline: BP money helps build aviation pipeline

The growth of the high-tech aviation industry has led to the initiation of programs in the four states designed to provide a steady stream of workers to the field that has been a big part of the region’s economy going back to the days before WWII.



### 8 Aerospace/tech parks: SSC tech park, PNS MRO campus eyed

A 1,100-acre NASA/SSC technology corridor and a \$200 million maintenance, repair and overhaul campus are the two latest visions to develop aerospace/aviation parks for the region. They would add to the already existing aviation clusters that call the region home.

### Chapter I update: Aerospace products

# C Series jet, AR-22 engine add to mix

It's stunning how quickly south Alabama has become a center for jetliner manufacturing. First there was the Airbus A320 aircraft series, making its first delivery in 2016. And in the near future Bombardier C Series jets will roll off a new assembly line.

The C Series, like the A320, is a narrow-body, single aisle jetliner. But it carries fewer passengers than the Airbus lineup. It is not a direct competitor for Airbus, but does fill a niche not covered by any Airbus model.

The C Series is currently built in Quebec, Canada, but the additional assembly line is needed to meet demand.

In addition, the region will do more nacelles work. Safran opted to produce and install aircraft engine nacelles at a facility in Mobile, the same line of work done by a newly expanded UTC Aerospace in Foley across the bay.

The C Series and nacelles are not the only new products that made headlines in the Gulf Coast region since the last *Gulf Coast Aerospace Corridor 2017-2018* was published in June 2017.

Aerojet Rocketdyne, which already has a substantial list of rocket engines it assembles and tests at Stennis Space Center, Miss., in early June finished assembly of the first of two AR-22 engines for Boeing and its Phantom

Express, a reusable hypersonic, unmanned military aircraft.

Phantom Express is being built for the U.S. Defense Advanced Research Projects Agency's (DARPA) Experimental Spaceplane.

The program is in-



C Series jets to be built in Mobile will add another aviation product. *GCRL photo*

tended to demonstrate a more routine and affordable means for quick access to space. Phantom Express, which will take off vertically and land like a plane, will be equipped with an expendable second stage capable of placing up to 3,000 pounds in low Earth orbit.

The AR-22 engine, derived from parts from previous versions of the Space Shuttle Main Engine (RS-25) that remained in Aerojet Rocketdyne's inventory, will undergo a series of tests at SSC to demonstrate its ability to support the high flight rates envisioned for Phantom Express.

In addition, more aerospace products will be tested at SSC. Seattle's Stratolaunch and California's Relativity Space have decided to use facilities at SSC to test new rocket engines.

In September 2017 Stratolaunch, funded by billionaire Paul Allen, signed an agreement to use SSC E-1 stand to test engines for its own launch vehicles

for its giant aircraft, originally designed to use by other companies.

Relativity, which aims to 3D print engines and rockets, has a 20-year deal with SSC for exclusive use of the 25-acre E-4 Test Complex. It can test 24 hours a day, and has an option to expand its site to 250 acres.

The newest products add to the growing list of aviation activities in the Gulf Coast I-10 region. The area between New Orleans and Northwest Florida produces drones, satellite propulsion systems, rocket engines, spacecraft, a small helicopter, small aircraft engines, displays and high-tech sensors that are the eyes and ears of machines big and small. It also develops, tests and manages the most advanced aerial weapon systems in the world.

- *Gulf Coast Reporters League*

For 2017 details, see [Chapter I](#)



AR-22  
*Aerojet Rocketdyne*

*Chapter II update: Space activities*

# Is there a spaceport in region's future?

Early this year in South Mississippi, the Hancock County Port and Harbor Commission began looking at the feasibility of creating a spaceport at Stennis International Airport in Kiln, outside NASA's Stennis Space Center.

No matter the results of the study, the fact that the commission is giving thought to such a venture is indicative of the allure of the space industry.

Hancock County Port and Harbor Commission CEO Bill Cork said the commercial space industry is "poised for dynamic growth, and Hancock County is uniquely positioned to benefit from this growth."

The Federal Aviation Administration has developed regulations that enable airports to host operations of reusable launch vehicles that take off and land like aircraft. Several kinds of such vehicles are under development, and Hancock County is looking to benefit, perhaps, through a spaceport.

Space is one of the key aerospace segments in the Gulf Coast region, thanks to NASA's Stennis Space Center, Michoud Assembly Facility in New Orleans and the military's phased array radar system at Eglin Air Force Base, Fla. That Eglin system has been keeping its eyes on space 40-plus years.

The new space race involves government and commercial players vying for a piece of the action. Goldman Sachs, in its *Profiles in Innovation* series, highlighted the state of the industry, calling space the "next investment frontier."

There's been a lot of space activity in the region since the *Gulf Coast Aerospace Corridor 2017-2018* was published a year ago.

Rep. Jim Bridenstine, R-Okla., was confirmed as NASA administrator. He's an advocate of the Space Launch System and NASA working with commercial space companies.

At SSC in early June Aerojet Rocketdyne completed assembly of the first



February 2018 full-duration test of RS-25 on the A-1 test stand.

*NASA photo*

AR-22 rocket engines for the Boeing Phantom Express, an experimental military spaceship program. Also at SSC, commercial space companies Relativity Space and Stratolaunch Systems opted to test rocket engines in South Mississippi (*see page 3*).

In addition, work on NASA's Space Launch System (SLS), which will send astronauts to the Moon and beyond, continued at SSC with additional testing of the RS-25 that will power SLS.

Meanwhile, at Michoud, Lockheed Martin in February began construction on the Orion crew vehicle that will return astronauts to the Moon and beyond. This capsule will be used for Exploration Mission-2 (EM-2), the first Orion flight that will have astronauts on board.

All of this is occurring at the same time NASA is looking for a non-federal private partner to lead development of a 1,100-acre technology corridor called Enterprise Park. It's de-

signed to attract companies that want to work with federal, state and private operations located at SSC (*see page 8*).

What is clear to anyone following the space industry is that it's in a state of transition with more players worldwide coming aboard. The industry requires a highly-skilled, workforce to build, launch, and utilize space assets.

With SSC and Michoud involved in both federal and commercial space activities, it bodes well for the Gulf Coast region's future.

While the federal military and NASA programs relying on the spending decisions of the administration in power, the commercial field is more open-ended and can venture into activities not on NASA's agenda, including space tourism.

*- Gulf Coast Reporters League*

For 2017 details see [Chapter II](#)

*Chapter III update: Military aviation*

# New F-35 lab, solar panels, the 815th

A second F-35 reprogramming lab, this one for Australia, Canada and the United Kingdom, has transitioned from a Lockheed Martin facility in Fort Worth, Texas, to Eglin Air Force Base, Fla. The multimillion-dollar lab will allow those allies to program the F-35 for their own needs.

Eglin has had a reprogramming lab for the F-35 since 2010. It provides the coding for the stealth aircraft that give the F-35 its battle smarts. The coding enables flight controls, radar functionality, navigation and identification, sensor fusion and more.

The United States military policy is to never share source codes for any U.S. weapons system, but a compromise was reached with the F-35, which is funded in part by partner nations. It involved establishing additional labs for the allies. The development of the new lab for Australia, Canada and the United Kingdom, allows them to customize mission data that will be loaded on their F-35s to suit their needs.

Also in Northwest Florida since the book was published last year, officials in August 2017 marked the completion of the three largest combined solar facilities on Defense Department property in a ceremonial flipping of the switch. Executives of Gulf Power, Coronal Energy, the Air Force and Navy were on hand at Naval Air Station Pensacola's Naval Outlying Landing Field Saufley for the event.

Ground was broken in 2016 for the project that spans 940 acres across three Navy and Air Force sites. Combined the three sites have about 1.5 million solar panels capable of generating up to 120 megawatts of electricity.

To the west in Mississippi, the 815th Airlift Squadron completed its quest to reach full operational capability, four years after the squadron's future was uncertain. The squadron and its C-130J Flying Jennies are again ready to de-



Upgraded C-130H at Eglin Air Force Base, Fla., for tests this year. *Air Force photo*

ploy and provide combat-ready airmen for airlift mission.

No matter how you look at it, whether it's through the value of their infrastructure, their depth of talent, the businesses awarded contracts or their critical missions, the Gulf Coast's military bases are a huge, multibillion-dollar ongoing asset for the region.

The Gulf Coast is one of the most military friendly regions in the nation, a place where the roar of a jet fighter or a distant rumble from exploded munitions are considered the sounds of freedom. Every military branch is represented in activities ranging from training to logistics. Military appreciation events are common.

According to the *Department of Defense Base Structure Report FY 2015*, there are 45 DoD properties in the corridor between New Orleans and Panama City, Fla. That includes bases and annexes with a combined replacement value of nearly \$22 billion, the vast majority of

that aviation-focused. The bases account for incoming dollars through active and retiree payrolls, as well the contracts awarded to local companies for work here and elsewhere.

The range of military activities in the region is considerable. The Navy Blue Angels flight demonstration team is headquartered at Naval Air Station Pensacola, and the Air Force trains pilots to fly the F-35 and F-22 at Eglin Air Force Base and Tyndall Air Force Base, respectively.

It's also home to the Air Force Special Operations Command at Hurlburt Field, and the busiest naval air station in the nation at Naval Air Station Whiting Field. It has one of the largest bases in the nation, Eglin Air Force Base, which boasts a huge R&D program that develops aerial weapons.

- *Gulf Coast Reporters League*

For 2017 details, see [Chapter III](#)

### Chapter IV update: R&D/innovation

# By any name, it's still innovation

One of the organizations in the Gulf Coast region that focuses on innovation was innovative itself last year when it went through a rebranding. The Doolittle Institute changed its name to DEFENSEWERX.

But the mission of the center in Fort Walton Beach, Fla., is still the same: create an environment where the military can work directly with companies and individuals to come up with solutions - while avoiding the red tape and long processes that are the norm.

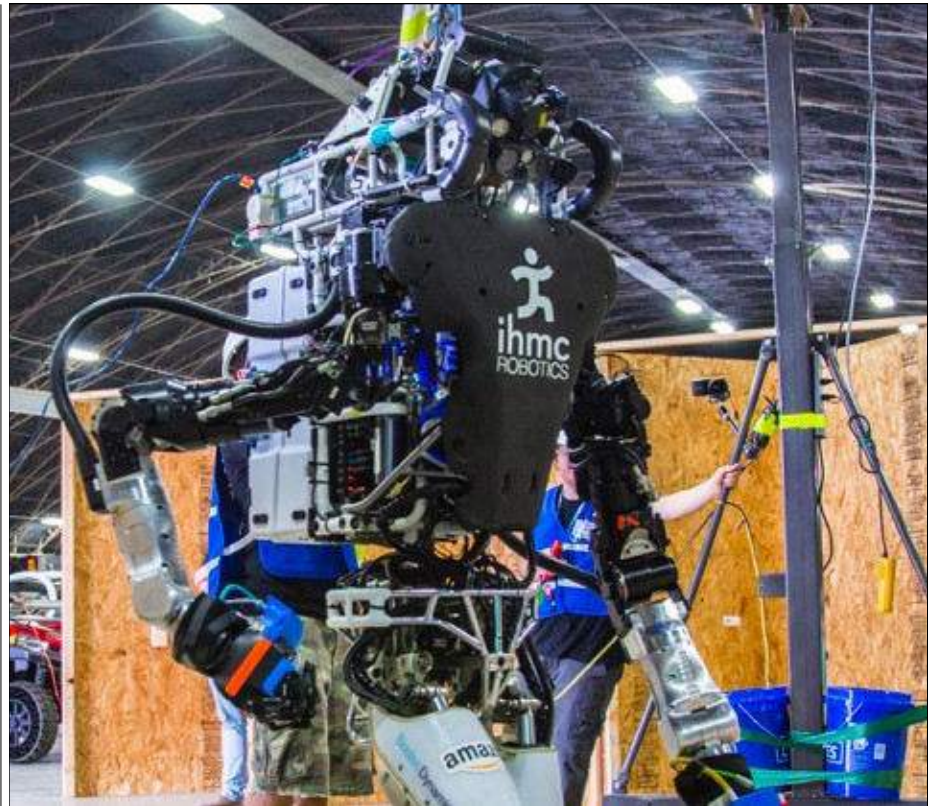
The Doolittle Institute, established in 2012, is a non-profit technology transfer operation named in honor of Jimmy Doolittle of World War II fame.

It worked with the Air Force Research Laboratory Munitions Directorate at Eglin Air Force Base, Fla., to come up with innovative solutions to issues facing the military. It has a second operation, SOFWERX, in Tampa that works with the U.S. Special Operations Command at MacDill Air Force Base.

DEFENSEWERX is just one of the research and applied technology operations spread across the Gulf Coast Interstate 10 region. Government, university and businesses are involved in research in a host of fields, including aerospace-related fields that include engineering/design, artificial intelligence, warhead technologies, guidance systems, rocket propulsion, unmanned vehicles, remote sensing and more.

Science and engineering are essential pathways to prosperity, according to the National Science Foundation. Research and development leads to new products and businesses, and the United States remains a world leader.

Along the Gulf Coast there are multiple hot spots for federal, university, and corporate research, development, test and evaluation. The two biggest are NASA's Stennis Space Center in Mississippi and Eglin in Northwest



IHMC's robotics work is one of the high-profile R&D activities here. *IHMC photo*

Florida. Both actively seek partnerships with private companies, including startups, and have ongoing SBIR/STTR programs for small businesses.

The region's universities are also heavily involved in R&D and technology transfer. The University of Southern Mississippi has a reputation for advanced materials research, while the University of West Florida has made a name for itself in cybersecurity.

One of the high-profile research operations in the region is the Institute for Human and Machine Cognition in Pensacola, which focuses on robotics, artificial intelligence and improving machine-human interaction.

IHMC has made a big splash on the international scene, where its work in robotics has won awards during competition against some of the best robotics institutions in the world.

Scientists associated with IHMC, most recently Peter Pirolli, have been chosen as National Academy of Inventors Fellows.

Entrepreneurs also play a big role in innovation, and there are strong indications their numbers in this region are increasing.

Both Pensacola and New Orleans hold annual conferences that focus on entrepreneurs and linking them up with businesses. The New Orleans Entrepreneur Week, or NOEW, is held every year, with the most recent one held in March. Pensacola for several years now has hosted EntreCon, a two-day event. The next one is scheduled for November 2018.

*- Gulf Coast Reporters League*

For details, see [Chapter IV](#)

## Chapter V update: Education pipeline

# BP money helps build aviation pipeline

Ask anyone involved in the aerospace industry to cite the most critical issue they face and it's likely they'll say a trained workforce.

Indeed, Space Florida CEO Frank DiBello has said the need for a highly-trained workforce is so important, failure to be responsive to the need will become the "aerospace Achilles heel."

The need is something heard loud and clear across the Gulf Coast region and in all four of the states involved in the Aerospace Alliance.

The topic managed to work its way into the first Aerospace Alliance Summit in 2011 in Destin, Fla. Aerospace representatives called workforce training the key to the growth of the region's aviation footprint.

Educators are responding.

In Northwest Florida, workforce training in a variety of fields, including aerospace, got a boost thanks to money resulting from the 2010 BP oil spill in the Gulf of Mexico.

Triumph Gulf Coast, the organization charged with overseeing the distribution of the money, in April approved nearly \$19 million in grants for counties in Northwest Florida. It includes \$3 million in funding for Escambia County School District and Pensacola State College for workforce development, allowing both to expand pipelines for training in certifying students for careers in information technology, cybersecurity, advanced manufacturing and aviation/aerospace.

The money will allow the district to build a new aviation maintenance training hangar for adult students at George Stone Technical Center and to provide aviation maintenance education at Booker T. Washington High School.

In Mobile, the new aviation experience center will be named "Flight Works Alabama," to reflect the different aspects of the center's mission.



Flight Works Alabama will pique interest in the aerospace field. *Airbus illustration*

In May 2017 Gov. Kay Ivey announced the intent to build the hands-on instructional facility, with the goal to bolster Alabama's workforce development efforts and inspire young people to pursue careers in aerospace.

The 19,000-square-foot center will house an interactive exhibition area, classrooms, a collaboration room, a workshop and more. It will be just off the campus of Airbus' aircraft manufacturing facility at Mobile Aeroplex and serve as a gateway for public tours of the A320 assembly line. It will open in 2019.

Gulf Coast institutions have bought into troubling national statistics showing that if measures are not taken to enhance America's math and science education, the country's ability to compete would continue to diminish.

Shannon Ogletree, director of the Santa Rosa County Economic Development Office in Milton, Fla., said a well-trained workforce and top-notch educational opportunities is the No. 1 "want" by the businesses he recruits.

At last year's Aerospace Alliance Summit in New Orleans, education and training was the topic of a workshop held during the gathering.

A skills gap exists, but workforce specialists are determined to get the pieces in place to make Gulf Coast I-10 Corridor a world-class aerospace training area.

The tools are there. The states tied together by Interstate 10 boast world-class research institutions and university programs, and the I-10 region itself has vocational training centers, public and private schools, museums and education centers dedicated to improving the knowledge of STEM from elementary-aged to college-aged youth.

- *Gulf Coast Reporters League*

---

For 2017 details, see [Chapter V](#)

---

## Chapter VI update: Aerospace/tech parks

# SSC tech park, PNS MRO campus eyed

A 1,100-acre technology corridor in South Mississippi and a \$200 million maintenance, repair and overhaul campus in Pensacola are two of the latest visions to develop aerospace/aviation parks in the region. They would add to the already existing aviation clusters that dot the I-10 corridor.

NASA in December 2017 opened a search for a non-federal partner to lead in development of the park designed for companies that want to work with NASA or other Stennis Space Center (SSC) tenants but don't want to be far away and don't want to go through security measures required within SSC. Enterprise Park would be on the north edge of SSC and would include property within and outside the SSC security perimeter.

Randy Galloway, deputy director of the NASA rocket engine test facility, said he thought it would be dynamic and a good source of long-term jobs.

Further to the east in Pensacola, Fla., the new \$46 million VT Mobile Aerospace Engineering maintenance, repair and overhaul hangar that will employ 400 workers opened in June at Pensacola International Airport. In addition, PSA Airlines, a subsidiary of American Airlines, plans to open a maintenance shop at the airport.

Now the city of Pensacola is requesting \$130 million from Triumph Gulf Coast - in charge of distributing recovery money in Northwest Florida from the 2010 BP oil spill, according to the *Pensacola News Journal*. The money would be used for an expansion of the Pensacola airport through creation of additional hangars at a proposed \$200 million MRO campus. It is believed the expansion could bring as many as 4,000 additional jobs to the airport.

Meanwhile, a nacelles cluster is taking shape in the Mobile-Baldwin region in Alabama. Safran in August 2017 said it would open a manufacturing opera-



VT MAE hangar in Pensacola could be the start of a new cluster. *GCAC photo*

tion at the Mobile Aeroplex to produce and install aircraft engine nacelles.

UTC Aerospace already operates a nacelles plant in Foley, Ala., and opened a new 80,000-square-foot nacelles assembly facility at its campus last year that will specialize in nacelles for A320 series jetliners that opt for the new engine option (neo). UTC delivered its first fully integrated neo propulsion system to Mobile's Airbus in February.

Also since the last book, change is coming to one of the tenants at Okaloosa Industrial Air Park at Bob Sikes Airport in Crestview.

In a deal expected to be finalized this summer, L3 Crestview Aerospace will be sold to a New York investment firm in a \$540 million deal. L3 Crestview

Aerospace has 500 workers at the park.

The I-10 region is dotted with industrial parks that specialize or cater to aerospace and aviation activities. Some are long-established pillars of their communities, like the Fort Walton Beach Commerce and Industrial Park, which opened in 1964. Others are more recent developments.

Alabama, Mississippi and Northwest Florida all have site certification programs designed to make it easier to companies to set up operations at "shovel-ready" locations across the region.

- *Gulf Coast Reporters League*

For 2017 details, see [Chapter VI](#)