

# Gulf Coast Reporters' League

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

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*VT Mobile Aerospace Engineering (VT MAE) in both Mobile and Pensacola are now called ST Engineering Aerospace as part of a rebranding by the parent company in Singapore.*



ST Engineering Aerospace's new \$46 million hangar at Pensacola International Airport is just the beginning.

GCAC photo

## Economic development

# PNS MRO campus takes off

*Pensacola is home to a new maintenance, repair and overhaul facility, but an infusion of funding promises to expand the operation and make it a major MRO hub...*

### Pensacola, Fla.

The plan is to create a large maintenance, repair and overhaul campus at Pensacola International Airport, and if all that's being promised comes to fruition, it will elevate the city's position in the aerospace/aviation industry well beyond being the "Cradle of Naval Aviation."

The proposed campus will increase the MRO footprint four-fold – giving Pensacola one of the largest MRO complex's in the

nation in a state that is No. 2 in the field. It will create more jobs than the aircraft maintenance positions that were lost in the 1990s when the Naval Aviation Depot at Naval Air Station Pensacola was closed.

"I consider this to be an incredibly important project. As an individual who is a lifelong resident of Pensacola, this is truly a transformational moment for this area," said Dan Flynn, director of Pensacola International Airport.

"It's a great visionary project that's being led by Mayor Ashton Hayward and the city of Pensacola," said Scott Luth, CEO of FloridaWest Economic Development. "We are excited to be a part of that team to bring this opportunity to Pensacola and Northwest Florida."

Luth, like Flynn, call it a “transformational project for the community” which, before the new hangar opened this summer had no MRO operations.

Last month Triumph Gulf Coast, the group that distributes recovery money resulting from the 2010 BP oil spill, gave preliminary approval for \$56 million in funding to expand the maintenance, repair and overhaul (MRO) complex at Pensacola International Airport.

The MRO campus, which had a grand opening in June 2018 for the 173,000-square-foot VT Mobile Aerospace (VT MAE) hangar - now called ST Engineering Aerospace - will add three additional hangars – two of them larger than the current hangar – under this \$335 million project.

According to information supplied by the applicant to Triumph Gulf Coast, upon completion the airport campus will be the second largest MRO complex in North America. But the source of that claim is unclear.

In addition to the \$56 million for the Pensacola project, Triumph Gulf Coast gave preliminary approval for an \$8.5 million grant for infrastructure for the Whiting Aviation Park in Milton. The plan is to eventually have a smaller MRO hangar for military and civilian aircraft at the park next to Naval Air Station Whiting Field (*story page 4*).

Triumph Chairman Don Gaetz said the investments “will directly create over 3,100 high-paying jobs” and grow Northwest Florida as a leader in aerospace.

All of this comes at a time when the MRO field is growing. According to Aviation Week’s MRO-Network, the global MRO industry expects to grow from total gross revenues of \$75.6 billion in 2017 to an estimated \$109.2 billion in 2027.<sup>1</sup>

“As the leader in this industry, ST Aerospace and its subsidiary VT MAE will likely experience a similar growth pattern in the future,” according to information supplied to Triumph Gulf Coast by the applicants.

The funds for Pensacola is contingent upon obtaining more than \$75 million now being sought from city, county, state and federal sources and \$59 million in commitments to the project by private companies.

The next step for the Pensacola and Whiting projects is agreement on a term sheet that will stipulate the obligations of all funding partners and include performance requirements and a “claw back” that would allow Triumph to reclaim its funds if jobs aren’t created and sustained, as committed by the private and public sponsors of the proposals.

### First hangar

It was seven years ago that Pensacola officials and VT MAE first started talking about opening an MRO at the airport. The company, which has had an MRO operations in Mobile since 1991, looked at South Mississippi, South Alabama and Northwest Florida for an expansion site before opting for a 19-acre site in Pensacola.<sup>2</sup>

The \$46 million MRO facility in Pensacola had its official grand opening June 8, 2018 with a ribbon-cutting on the north side of the airport. In attendance was Gov. Rick Scott. During the event, a UPS aircraft, the first customer, was in the hangar for routine maintenance and served as a backdrop.

The hangar can hold two 777s, four 757s with winglets or six A320s, according to Flynn.

The building of the first hangar for ST Engineering Aerospace was called phase one. A second hangar was in the initial layout plans, officials said. That second hangar, along with two more, will happen with phase two.

The entire campus will be 112 acres, including the acreage with the first hangar. In addition to the first hangar, it will add two 191,000-square foot and one 173,000-square-foot hangars, 100,000 square feet of warehouse and shop space, a 120,000-square-foot administrative office building and associated roadways, taxiways, as well as aprons.

The land and buildings will be leased to ST Engineering Aerospace, subject to a long-term real property lease. The entire MRO development will be city-owned assets of the airport, according to the applicants.

Phase two of the MRO Aviation Campus will create at least 1,325 jobs at an average annual salary of \$44,461 plus benefits. When combined with the 400 new jobs associated with the first hangar, total aerospace sector jobs employed directly by ST Engineering Aerospace would be 1,725. That’s more than the 1,000 workers at the 10-hangar, 900,000-square feet it has at the Mobile Aeroplex.

In addition to the direct ST Engineering Aerospace jobs, additional full time equivalent jobs directly related to the aviation and aerospace industry will be located at the airport. That includes about 77 administrative and engineering staff, 60 full time customer airline engineering jobs on site to oversee the repair and maintenance protocols associated with their aircraft, and an additional 16 vendor and auditor positions.

The project will also require some 25 non-aerospace jobs in security, maintenance and janitorial services. And, under discussion, is the opportunity for establishing about 63 North America executive and senior administrative jobs at the Pensacola MRO Campus.

What precisely that might mean is not clear. “It’s just not something we can speculate on,” said Flynn.

### Smart MRO and training

The MRO in Pensacola is part of VT Systems of Alexandria, Va., a wholly-owned subsidiary of Singapore-based ST Engineering, which has been the world’s top MRO operation for years.

The state-of-the-art facilities to be developed in the MRO Aviation campus will use “Smart MRO” technologies. The company’s engineers, technicians, and mechanics will use next generation methods at the Pensacola campus, including laser scan technology and 3D (additive manufacturing) to fabricate parts; drones for remote air-

craft inspection; composites for appropriate aircraft; and robotics. In 2017, ST Engineering acquired Pittsburgh-based Aethon.

Along with the use of cutting-edge techniques, the campus is also envisioned as a location for education and training. Plans are to establish within the MRO hangars a training center for secondary education providers to prepare students for careers in the commercial aviation maintenance. The plan is to enhance existing workforce development programs at Washington High School (Aviation Maintenance Academy), George Stone Technical Center (Airframe and Power plant Technology) and Pensacola State College.

In addition, this proposed project will assist in transitioning veteran military personnel to commercial aviation and aerospace jobs. A near-term vision is the collaboration between ST Engineering Aerospace and local education providers will create an MRO Aviation Training Academy to develop the workforce needed for the available jobs and to maintain a pipeline of trained technicians for the future.

### Investment and spinoffs

Upon completion of the campus, ST Engineering Aerospace will have invested about \$75 million of its own funds, according to the Triumph Gulf Coast document.

Provided that funding and lease terms can be successfully negotiated in the coming months, design work on the new facilities could begin this year and construction of a second hangar could begin in 2019. Design and construction of the other MRO campus facilities could conceivably be completed by the end of 2021.

As with any project of this size, the expectation is that it will result in luring suppliers to the Pensacola area. The applicants pointed out that ST Engineering Aerospace will spend some \$35 million annually in the procurement of airplane and non-airplane components from about 1,200 vendors, and said the

supply chain activity could lead to the relocation of suppliers to the region.

Such a large MRO complex would more than make up for the 2,500 maintenance, repair and overhaul jobs that were lost in the 1990s when the Naval Aviation Depot (NADEP) at Naval Air Station Pensacola was shut down as a result of the base closure and realignment process.

## Industry's return a boon for airport

You have to look back 25 years for the reason Dan Flynn is particularly excited about the MRO campus planned for Pensacola International Airport.

"What I tell people when I'm talking to them is that this is bringing an industry back to Pensacola that, unfortunately, had to go away a number of years ago," said the Pensacola airport director.

What went away was the Naval Aviation Depot (NADEP) at Naval Air Station Pensacola, a huge military MRO that employed more than 2,000 people. It was closed in 1993 during a Base Closure and Realignment round. And Flynn felt the loss.

"It's a little more personal for me because my brother, my older brother, is an electrical engineer and he was working over at NADEP at that time," said Flynn. "When that was BRACd, all of those individuals and all of those skills left the area."

Some were able to return.

"My brother had to go to Warner Robins (Ga.) for a while before he was able to, fortunately, find another job with NAVAIR and be able to move back to the area, and he's been here since," Flynn said.

"But this facility, this campus, brings that industry back to the area, so it is further diversifying the economic base for the area itself," he said. "It's taken this long to come full circle to be able to attract that back. And what makes it even better, it's, not only is the indus-

try coming back it's in its own sector. It's no longer aviation trades tied to the military it's now aviation trades tied to the civilian market."

1 Oliver Wyman, Global Fleet and MRO Market Forecast Summary, page 3.

2 Duwayne Escobedo, "One that didn't get away," Gulf Coast Aerospace Corridor Newsletter, October 2014, page 1.



Flynn

But beyond the return of an industry, the MRO will diversify the airport's revenue base. The more income that can be generated from sources other than the airlines, the better the chance for keeping their rate base from landing fees and other rents low.

ST Engineering Aerospace currently add about \$260,000 a year in ground rent. Each additional hangar will increase the annual payment by about a quarter-of-a-million dollars. "That helps offset fees that we would otherwise have to charge the airlines. ... So from the pure revenue side, its just wonderful."

Flynn said the addition of the MRO can be leveraged by the airport as another feature that may interest airlines.

"So it aides us in our air service development efforts when we go to an airline and we say, 'hey you know we have these things to offer at Pensacola and by the way, we also have this maintenance facility who contracts with you and others that now has a presence on the airport,'" Flynn said.

■ ■ ■

## Economic development

# Whiting Aviation Park MRO vision

*A longtime dream is finally on track with a decision by Triumph Gulf Coast to grant \$8.5 million to develop an aviation park in Santa Rosa County's Milton...*

## Milton, Fla.

In an age when so many locations along the Gulf Coast hope to increase their aerospace footprint, having a nearly 300-acre site with access to a runway is a major plus. And if that includes a bold vision of what it can be, so much the better.

The vision for Santa Rosa County's Whiting Aviation Park in Milton is to create an aviation maintenance, repair and overhaul depot that could handle major and minor work for smaller military and civilian aircraft. To add to its appeal, the plan is to establish an education and training center as well.

The idea for the aviation park has been around since 2002, but it remained a tree-filled plot and a vision only. Then on July 18, Triumph Gulf Coast, a non-profit established to distribute recovery funds that resulted from the 2010 BP oil spill, gave preliminary approval for a grant of \$8.5 million for Whiting Aviation Park. It also approved funds for an MRO campus at Pensacola International Airport (*story page 1*).

The funding will be used to improve 40 acres of industrial park land outside the fence but adjacent to Naval Air Station Whiting Field. The improvements are intended to support helicopter maintenance, repair and overhaul operations in support of the Whiting Field military training missions.

Shannon Ogletree, director of Santa Rosa Economic Development, said he was "ecstatic" when he learned the project would be funded.

"The Triumph Board has provided us with a game-changing opportunity



Artist's drawing of Whiting Aviation Park, used in a Santa Rosa County brochure.

by allowing us to put in infrastructure for Whiting Aviation Park. We've had numerous companies inquiring over the years, inquiring as of recently."

In fact, his scheduled call to a reporter was delayed because he was on the phone with a company interested in the park. He said he would meet with the company "in a couple of weeks." He would only identify it as a known defense contractor.

The Triumph Board approval wasn't a given. During an interview with the same reporter in early July, Ogletree had some concerns about the request for funding because of a Catch 22 situation. In that interview, he noted that to get the funding from Triumph Gulf Coast, the county needed to have a company willing to commit to setting up shop at the site. But to get a company willing to commit, he needed a park and infrastructure in place.

But apparently, Triumph Gulf Coast saw the need to take the first step by investing in the infrastructure with the hope that it would lead to new aviation businesses opting to set up shop in the new park.

Triumph Chairman Don Gaetz in a release about the funding approval for the Pensacola and Milton projects "will directly create over 3,100 high-paying jobs." He said the investment will grow Northwest Florida as a leader in aerospace by expanding the region's aviation infrastructure.

"They took a leap in faith," Ogletree said about the Triumph Board. "We have three interested parties but they haven't made a final commitment yet. But the Triumph Board realizes that getting the park operating helps protect the base."

The next step for both projects is agreement on a term sheet that will stipulate the obligations of all funding partners and include performance requirements and a "claw back" that would allow Triumph to reclaim its funds if jobs aren't created and sustained, as committed by the private and public sponsors of the proposals. Triumph's funds will be paid over a period of years with each payment dependent upon jobs created and sustained.

It could take two or three months to agree on the term sheet, said Ogletree.

He said that physical work at the site could begin sometime in 2019.

### County in between

Santa Rosa County has for years been identified as an appealing bedroom community, and is one of the fastest growing counties in a fast-growing state. It has good schools, a low crime rate, two state parks and a wealth of water activities. It sits between Escambia and Okaloosa counties, where many of its residents work.

The county has a diverse employment base, with no industry accounting for more than 20 percent of the makeup, according to Ogletree. One of his tasks is to grow the county's employment options, so those who wish to work in the county can do so.

Ogletree particularly covets growing the county's aerospace footprint, in part because the wages are higher than other industries, in part because the region has a growing aerospace cluster with multiple options for workers. The county hosts one of the nation's key bases for training military pilots, and its neighbors also have significant aerospace assets.

What is particularly important to Ogletree is that Santa Rosa and its neighbors have a high concentration of individuals coming out of the military who are "ready and willing to go to work here." While the skills they take from the military vary, one that stands out is aviation, so it makes sense to target aviation because it's more of a match for their job skills sets.

### The cluster factor

The problem for any area is ensuring it has multiple businesses in a specific field – a cluster – so workers who are unhappy with one employer have other employers in the same field to which he or she can turn.

"If you're in a field of work, you have to have options beyond that company where you work," Ogletree said. "With aviation, we have that cluster and people can kind of move around

in this area," since there are aerospace employers in the three-county region of Escambia, Santa Rosa and Okaloosa. Indeed, looking further out the region between South Louisiana and Northwest Florida is packed with aerospace activities, ranging from space to aircraft manufacturing and more.

Santa Rosa County's best-known aviation activity is Naval Air Station Whiting Field, one of the Navy's two primary flight training bases. Established in 1943, the 12,000-acre complex provides training for Navy, Marine Corps, Coast Guard, Air Force and allied nations. It's the busiest air station in the world, accounting for nearly 1.5 million annual flight operations including primary flight training of over 1,200 students.

While military bases are traditionally a lure for businesses, the type of mission at a base plays a key role in its ability to attract supporting companies. For Okaloosa County, Eglin Air Force Base is involved in research and development, test and evaluation – and is a military contracting activity. That's appealing to aerospace and defense companies, and has been important in that county's role as an aerospace center.

Whiting Field's mission is training, and the aviation-related jobs are most strongly associated with maintenance of aircraft. Still, being between Okaloosa and Escambia counties is "a good position" because companies don't look at county lines, but rather the advantages a particular site might provide. For Ogletree, he sees a runway as a strong advantage for attracting companies that are looking at the region.

### The runway lure

A runway can be an important lure for some, but not all, aviation companies. A runway is what led to the development of Bob Sikes Airport, near Crestview, a general aviation facility that performs a variety of modification work on military aircraft.

Access to a runway was one of the factors that prompted GKN Aerospace to set up shop at Panama City's Northwest Florida Beaches International Airport. It's also what led Mobile, Ala.-based VT MAE, now called ST Engineering Aerospace, to create a new MRO at Pensacola International Airport.

Access to a runway is also what led Northrop Grumman to establish an unmanned systems center in Moss Point, Miss., adjacent to Trent Lott International Airport. The company does final assembly of the Fire Scout unmanned helicopter, fuselage work in the Global Hawk and subassembly work on the F-35.

Santa Rosa County is making the push to develop Whiting Aviation Park through leveraging the access to a runway. Companies that opt to set up shop at the air park would have access to Whiting Naval Air Station's South Field runway.

The park would provide another option for companies doing work at NAS Whiting Field, Eglin Air Force Base, or Naval Air Station Pensacola. In addition to companies that focus on the military, it could also appeal to aviation companies that do not work with the military, he said.

The 300-acre park is on the back side of NAS Whiting Field, to the east. It is industrial zoned and tenants would have access to the 6,000-foot runway, which also has tower capabilities thanks to the military training mission. It has no structures yet, but that is bound to change thanks to the funding from Triumph Gulf Coast. The money will allow it to put in the infrastructure – electric, water, sewer, storm water retention and more, said Ogletree.

The funding would not include anything for buildings, but that's not an issue. The plan is to have companies build their own structures, though there is also the option of Santa Rosa putting in a building and leasing it to a tenant. Ogletree said that if the county puts in a building, like a hangar, it

would cost between \$3 million and \$4 million.

A hangar would not be the size of the recently-built hangar for VT MAE at Pensacola International Airport, but rather a hangar for smaller aircraft, like the Navy's T-6 fixed wing aircraft or helicopters.

The vision is to have the aviation park appeal to defense-related aviation operations as well as private companies that are not necessarily involved in military activities. A hangar would go a long way towards making that happen.

For potential tenants, moving in represents significant cost savings, according to Ogletree.

"Imagine how much it would cost to put 300 acres around a tower and a runway," Ogletree said. "How much would it cost to build a runway, how much would it cost to build a tower? To recreate that it would cost a lot of money."

In addition, Ogletree sees the park as a good location for an aerospace and aviation education and training facility. He pointed out that operations like George Stone and Pensacola State College are developing new training options, and establishing an operation at Whiting Aviation Park would be an option for them.

### Protecting the base

Ogletree said "it was the wisdom of (Santa Rosa County) Commissioner (W.D.) Don Salter" that was the driving force behind the aviation park.

"This was through his leadership that all this has been made possible. It was his brainchild to develop that property into an air industrial park," he said.

Salter, a veteran who is the most senior member of the Board of County Commissioners, said the idea for the park fits in well with the county's ongoing effort to protect the base from encroachment.

Salter has been involved in issues surrounding base closings since 1991, and he said one thing he learned is that "you better protect your fence line."

By that, he means ensuring that there are no activities encroaching on the base that would jeopardize the military mission.

"In 2002, we started to develop a joint land use study where we looked at all of the properties within a one mile radius of the base and the outlying fields throughout Santa Rosa County and that's when we developed the

buffering program, which included approximately 25,000 acres that we needed to buffer. And currently we're sitting here now with about 7,000 acres that we have buffered to prevent incompatible developments."

The county is continuing to look at more purchases around the base and outlying fields.

- David Tortorano

## 16-year passion pays off for Salter

Don Salter was excited when Triumph Gulf Coast gave a preliminary nod to the Whiting Aviation Field project. Small wonder. He spent 16 years pushing the project.

"It just goes to show what passion is all about," said Salter, a Santa Rosa County commissioner. "If you believe in something and you've got the vision and the passion and build a process to get there, most of the time eventually it will happen."

If anyone knows how this all came about, it's Salter.

"Back in 2002, after the county had acquired 267 acres along the eastern fence line of Whiting Field, the commodore, who's over all the training at Whiting Field, called me and asked me to meet with him.

"So I met with him and it was his suggestion that we try to get an aviation park along that fence line where they could just run the aircraft through the fence and make the repairs instead of sending them off to Alabama and Mississippi and in some cases St. Louis, and that would reduce the number of days their aircraft would be down because it would have to leave the base.

"And that would make the base more efficient because it could get its aircraft back in the air probably two or three days sooner versus having to send them off."

The county initially purchased 33 acres, then used Florida Defense grant money to buy the remainder of the

267 acres, part of a broader effort to prevent encroachment from projects incompatible with the base mission.

The key to the park was to get an agreement between the county and the Navy allowing companies who set up shop at the park to have limited access to the Navy's 6,000-foot runway at the South Field. The Air Force had such arrangements, but not the Navy.

That began a long process with trips to the Pentagon and elsewhere to secure the agreement.

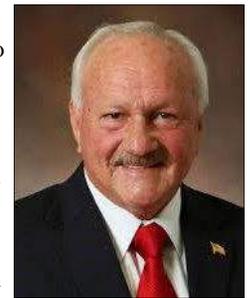
"It took six years ... before I finally got the limited access use agreement approved in 2009," Salter said.

It was grueling, but he persisted.

"I never gave up hope. I've always been one who believes in a vision and passion and I just felt like this was the right thing to do at the Whiting Aviation Park, and I had a lot of support from my fellow commissioners and the community as well, so we just had to stay focused and keep working. We actually had the legislature two different times approve \$5 million to go toward development of the project, just to have it vetoed by two different governors."

Expect them to try again.

■ ■ ■



Salter

## Corporate

# Conference touched on many topics

*There is a chance that the joint venture that will build the A220 will grow in Mobile beyond what's currently planned if the demand for the plane is there...*

## Mobile, Ala.

It was near the end of the Southeast Aerospace and Defense Conference in Mobile back in June that Rob Dewar, at the time vice president and general manager of Bombardier Aerospace, sat down to talk to *Gulf Coast Aerospace Corridor*.

A lot has happened since. Bombardier and Airbus finalized the agreement to set up a partnership with Airbus the majority partner. The plane is now called the A220, and Dewar is no longer with Bombardier. Instead, he is the head of customer services and engineering of the CSeries Aircraft Limited Partnership (CSALP), the entity that manufactures and sells the jetliner. And things will move only faster from this point.

It was Dewar who said during the conference - and first reported by the *Gulf Coast Aerospace Corridor* daily news feed - that ground would be broken this year for the assembly line to build the jetliner at the Mobile Aeroplex.

"So typically it takes about a year to do from groundbreaking to having the building completed, about 12 months. That's the experience we had in Mirabel (Quebec) when we did from groundbreaking to finishing the building it was exactly 12 months. ... We would expect a similar timeline here."

Some Airbus facilities will be used by the partnership to finish the planes.

"Of course it's going to be based on the capacity that's available but right now based on the capacity that they have, what we can do jointly at least for the next few years, we can share



The renamed CSeries was unveiled July 10 at the delivery center in Toulouse, France. *Airbus photo by F. Lancelot*

the paint shop and the delivery center can be shared," he said.

The other six stations in the assembly process will be done at the dedicated final assembly line north of the A320 assembly line at the Mobile Aeroplex. He expects the first plane to be delivered in mid-2020.

Both the CS100 and the larger CS300 will be built in Mobile because they have a common process. The only difference is that the 300 has a longer center fuselage, but the tooling is moveable.

"We'll be starting with the CS300 and then based on market demand we can build the 100 here as well," said Dewar. The plan is to build four planes each month and have 400 workers, but that could change.

"It really depends on market demand. We do see a very increasing market demand. So this site is meant primarily for the U.S. and the U.S. is about a third of the total market. So of 6,000 we see roughly 2,000 aircraft will

be required, so if we win like 60 percent of that or more than 50 (percent) you're talking 1,000 or 1,200 aircraft, so you can see there is an opportunity that we could grow further from where we are today," he said.

Have people expressed interest in working for the company?

"Absolutely. It's high-tech, it's the latest technology in commercial aviation and so for people it's a great opportunity to learn this technology, to be at the leading edge and great-paying jobs," Dewar said.

Is he concerned about finding qualified workers?

"Of course the employees are super important, right, and in the end they're doing all the work and the quality and the standards are super important. We do believe that we can attract because it is an attractive product to work on but it is always, or course, always a challenge to hire the right skilled people," he said.

Just as Airbus brought a team of Mo-



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## Upcoming

If you're interested in education and training in the field of aviation, the next issue of our aerospace newsletter is one that will intrigue you.

Our October issue will take a close look at the aerospace/aviation education and training opportunities in Alabama, Florida, Louisiana and Mississippi.

This issue will be larger than our usual eight pages because we want to provide as much detail as we can to help anyone interested in the field.

We already have assurances from officials in the four states that they will help us distribute the newsletter widely in their state. We know of no other organization that has taken on such a chore.

Thanks for being a reader, and feel free to thank our underwriters.

*David Tortorano*  
Editor  
August 13, 2018

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bile workers to Hamburg to learn the assembly process, a team from Mobile will be brought to Mirabel, headquarters for the partnership and home of the other assembly line, "so they can start the learning curve."

Is he excited about what's happening?

"So you can see that in the body language I'm super excited. The program we started with three people back in April of 2004, so it's been a long and demanding, challenging journey and to know now that we have like a solid foundation, a great product and now we have a partner that basically can ensure the success of the program, for me is very rewarding," he said.

That initial group of three has grown to 2,400 people.

At the time of the interview, the new name for the CSeries had not yet been revealed, but he did say that the aircraft would be integrated into the Airbus family. In July the newly renamed A220 was revealed at the Airbus delivery center in Toulouse, France.

Dewar said there are many advantages for integrating it into the Airbus family. Airbus will be able to offer aircraft from 100 seat up to 600, 700 seats, which he said is "unique in the industry."

Building the plane in Mobile also promises to turn the Alabama city into the fourth largest jetliner manufacturing center in the world, and second largest in North America by 2021. That was revealed at the conference by Daryl Taylor, vice president and general manager of the Airbus U.S. Manufacturing Facility. He said the new assembly line marks a new chapter for the complex.

### Modern manufacturing

One of the key topics at the conference was the transformation of manufacturing through advanced technologies, from robots to additive manufacturing and more. Airbus shortly before the conference inaugurated a fourth A320 series production line in Hamburg, Germany. It's designed to help Airbus ramp production - from 50 to 60 per month - of the single-aisle jetliner to deal with an eight-year backlog.

The new state-of-the-art production line utilizes two seven-axis robots to work alongside human workers. The robots, named

Luise and Renate by workers, will help to drill over 2,000 holes to join the two halves of the fuselage together. They can drill 80 percent of holes on the upper side of the sections.

The robots form part of a new final assembly line where the fuselage and wings are transported by automated moving tooling platforms, rather than being lowered by cranes onto fixed jigs, and where dynamic laser tracking is used to perfectly align aircraft parts.

Klaus Roewe, head of the A320 series program, told reporters in Hamburg that around one-third of the new technologies on the new final assembly line could potentially be transferred to other lines in Hamburg, France, China, and the United States - i.e., Mobile. The Mobile assembly line now produces four A320 aircraft each month.

The assembly line was created by Nova-Tech Engineering of Lynnwood, Wash.

### OEMs vs MROs

There was also talk about the move of Original Equipment Manufacturers (OEM) into the aftermarket, a challenge to maintenance, repair and overhaul facilities.

The MRO industry is expected to continue to grow until 2028, with the value set to rise globally to \$114 billion. OEMs see the aftermarket as a revenue source, so are pushing in-service support contracts.

Larger MROs are able to go head-to-head with the OEMs because of their labor pools and capabilities. Companies such as ST Engineering Aerospace and HAECO do as much airframe maintenance work as the other top 10 global MRO providers combined, according to *Aviation Today*.

Brian Prentice, a partner of Oliver Wyman, said at the conference that airline customers will determine the outcome. Airlines want a safe, reliable and nimble service provider for their aircraft, and the aftermarket developed to be responsive to airlines.

About 115 participants from 10 countries attended the Leeham Co./Airfinance Journal conference June 25-27 at the Battle House Renaissance Mobile Hotel.

**- David Tortorano**