

STATEMENT FOR THE RECORD

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Maintenance and Manufacturing Workforce

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Chairman Larsen, Ranking Member Graves and distinguished members of the Aviation Subcommittee, thank you for the opportunity to appear before you today.

I am honored to be here representing the 17,000 women and men of Gulfstream Aerospace. The issues being addressed here are critically important, and timely. They are important to aviation companies like Gulfstream, and even more important to the individuals in this country who are missing great opportunities because their talent is left untapped.

The most valuable asset of any company is its employees, and that is particularly true at Gulfstream. With that in mind, we have evolved a workforce development strategy for the maintenance, manufacturing and other technical skills required in our business. Although this effort is very much a work in progress, Gulfstream is honored to share our experience with this Subcommittee.

1. Gulfstream Operations Overview.

As context for my remarks, it is important to understand Gulfstream's operations. We have two distinct but very interrelated lines of business. First, we design, manufacture and sell business aircraft. The second distinct area is our Gulfstream aircraft maintenance, repair and overhaul ("MRO") business, which we refer to as Customer Support.

Our current production models include the G280, G500, G550, G600, G650 and G650ER, all of which are in service with customers, plus the recently announced G700 that is moving toward Federal Aviation Administration ("FAA") Certification.

Our business is very international from both competition and sales standpoints. All of our key competitors are located outside of the United States: Bombardier in Canada, Dassault in France and Embraer in Brazil. Approximately fifty percent (50%) of our new aircraft sales are in the United States and approximately fifty percent (50%) are international. From a balance of trade perspective, it is instructive to note that the percentage of our international sales has grown over the last twenty (20) years from roughly twenty percent (20%) to approximately fifty percent (50%).

Gulfstream's corporate headquarters, largest manufacturing site and largest maintenance facilities are in Savannah, Georgia, where approximately eleven thousand (11,000) of our seventeen thousand (17,000) person workforce is based. Our operations also include the following facilities:

- Locations with both Manufacturing and Maintenance Operations
 - Long Beach, California
 - Dallas, Texas
 - Appleton, Wisconsin

- Locations with Maintenance Operations
 - Van Nuys, California
 - Cahokia, Illinois
 - Palm Beach, Florida
 - Brunswick, Georgia
 - Westfield, Massachusetts
 - Las Vegas, Nevada

2. **Gulfstream's Workforce Development Strategy.**

Over the past several years, Gulfstream has become increasingly proactive in nurturing and recruiting new talent for our technical jobs. We have done so by focusing on four areas:

- Elementary, Middle and High School Student Engagement
- Technical School Engagement and Recruiting
- Military Engagement and Recruiting
- University Engagement and Recruiting

This work also is supplemented by our post-hire internal training programs, which include initial and advanced training using our own employees and FlightSafety International.

A foundational point underpinning this strategy is that our younger generations need help understanding what great opportunities are available in technical fields and how to take advantage of those opportunities. This awareness work must include students and, likely more importantly, their parents and teachers. So, our approach is to start with young students to build awareness, build desire and, through mentoring and other resources, guide them down the path toward those goals.

We continue this same basic approach for Technical Colleges, Military and Universities, but with a more direct connection between the individual and a specific job at Gulfstream for which that person is suited.

3. **External Workforce Development Resources.**

Although we indeed do have a technical skills gap in this country, there is a good news side to this story. As evidenced by this hearing itself, there is a growing understanding of the problem and a corresponding application of resources to address it. Gulfstream's experience, in every state in which we do business, is that local, state and federal organizations are investing in new ideas and approaches for changing the paradigm.

Gulfstream's workforce development strategy relies very heavily on these external resources. Indeed, you will hear several examples as I review Gulfstream's specific activities.

4. **Elementary, Middle and High Schools.**

Gulfstream engages younger students because, in our view, building awareness and excitement early on helps guide students in their academic decisions and other life choices during those formative years. For example, a ninth grader who is excited about a career as an aviation mechanic will have a very different perspective on his or her math and science courses than a classmate with no particular career in mind.

Our younger student engagement falls into two categories: targeted individual student engagement and awareness activities. These two sets of activities work well together by raising awareness across a large population while, through the targeted engagements, providing in-depth substance that validates the message with real-world successes.

a. **Targeted Student Engagement.**

Youth Apprenticeship Program (“YAP”).

Gulfstream’s YAP, which we operate in partnership with local High Schools, allows students to receive High School credits while earning money working part time at Gulfstream. This provides real world experience to students and hands-on mentoring by their direct supervisors and co-workers, which they use to identify and further their personal career paths.

Our 2019-20 YAP has approximately seventy-five (75) High School Juniors and Seniors in Georgia, California, Wisconsin, and Texas. They are working in approximately forty (40) different job functions, including aircraft assembly, cabinet shop, quality control, accounting, aircraft maintenance operations, engineering and our integrated test facility. Just like a potential full-time employee, students fill out applications, apply for specific jobs, and are interviewed in person by their hiring manager. Once hired as apprentices, they work fifteen (15) to twenty-five (25) hours per week, are paid ten dollars (\$10) per hour (\$13 in CA) and earn High School Credits for their work.

An important aspect of this program is its ability to correlate students’ academic study with future job prospects. An apprentice can see first-hand that math and writing skills, for example, are necessary for their future success and not simply abstract concepts.

Technical/Vocational High Schools.

The increase in High Schools with specific technical and aviation curricula is an effective tool in this area as well. By incorporating courses directed at aviation and technical careers, these schools bring technical career opportunities quite literally directly into the classroom.

Gulfstream supports a number of these schools with funding, equipment and mentors, and we encourage others to do so, too. Technical High schools with which we are involved include Woodville-Tompkins Technical and Career High School (Pilot and Aviation Manufacturing – Georgia), Groves High School (Aviation Manufacturing and Maintenance – Georgia), Westfield

Vocational School (Aviation – Massachusetts), West Michigan Aviation Academy (Aviation – Michigan) and Effingham County College and Career Academy (Engineering – Georgia).

Example: Westfield, Massachusetts.

Westfield Technical Academy recently opened a new state-of-the-art training hangar across the airport from the Gulfstream's facility at the Westfield-Barnes Airport. The school began an airframe and powerplant (A&P) program five (5) years ago, and it now graduates approximately 15 students annually who are ready to sit for the FAA A&P Exam. Gulfstream has been a major contributor to the school, which paves the way for the state to provide matching funds. Additionally, Gulfstream employees volunteer at the school speaking to students in the program.

Dual High School and Technical College Enrollment.

An example of another program with similar impact is Georgia's Dual Enrollment Program. This allows High School students with an interest in technical jobs to take courses at one of the State's Technical Colleges and simultaneously earn credits toward both High School graduation and a Technical College Degree.

Programs like this get High School students actively engaged in making career choices while also expediting their entry into the workforce and financial independence. We encourage support for programs such as this and are interested in exploring a combination of this type of program with apprenticeships.

Example: Savannah, Georgia

Gulfstream is sponsoring a dual enrollment Aviation Pathway program through the Groves High School in Savannah, Georgia. This program, which begins in ninth (9th) grade and runs through twelfth (12th) grade, is specifically tailored to build math, science and aviation-specific skills necessary for careers in aviation manufacturing and maintenance. Students must apply for and be admitted into this program, and within the program can select from several pathway options depending on their preferences.

During the first two years of this program, the students' classes are within the High School's system. For the last two years, the students remain on the High School campus but are taught by faculty from the Savannah Technical College and, through dual enrollment, receive both High School and College credits. Students graduate with one or more Technical Certificates issued by Savannah Technical College and are well positioned to move directly to jobs with Gulfstream or another aviation company.

Student Leadership Program (“SLP”).

Gulfstream also sponsors a Student Leadership Program (“SLP”), which operates in coordination with High Schools in Georgia, Texas and Wisconsin. SLP’s curriculum includes building life skills (aka soft skills), guiding students through an exploration of career opportunities in their local area, including aviation, and helping them build and implement plans to achieve their desired career path.

Example: Appleton, Wisconsin.

SLP in Appleton partners with the Appleton Area School District to support the Fox Valley’s workforce needs in showcasing high demand manufacturing careers, including aviation manufacturing and maintenance, to High School students. The program is in all three High Schools in the Appleton Area School District and impacts 150 sophomore and junior students annually. Gulfstream lead formation of a six (6) company partnerships that provide career exploratory tours to students in the program. In addition to learning about career opportunities, students learn important work-ready skills including resume building, financial literacy and interview skills.

b. Awareness Activities.

Gulfstream, like many companies, engages in a wide range of activities to raise awareness among students, parents and teachers. Here are a few examples of our activities in this area.

Job Shadow Programs

Our Westfield, Massachusetts, and Dallas, Texas, facilities both have successful job shadow programs. In Westfield, we partner with the Westfield Vocational Technical High School, which has a robust aviation program, to bring students into our maintenance facility and shadow our aircraft maintenance technicians during their workday. This effort is part of the FAA’s “Walk In My Boots” initiative aimed at exposing students to the benefit of an aviation maintenance career.

Similarly, in Dallas, we partner with local High Schools and host students for two days of aviation job experiences. Activities include wiring the avionics for an aircraft, working with sheet metal, making a sales pitch and visiting Dallas Love Field’s control tower.

GAMA/Build A Plane Aviation Design Challenge

Gulfstream also supports the General Aviation Manufacturer’s Association (“GAMA”) Build A Plane Design Challenge, which started in 2013 as a way to introduce High School students to aviation careers. For this competition, schools receive student and teacher copies of the Fly to Learn curriculum and software powered by X-Plane. Over the course of six weeks, they learn about topics such as the four forces of flight, aspect ratio, and even advanced subjects such as supersonic flight. They then compete in a fly-off that requires them to modify a virtual airplane to fly a specific tasked mission in a simulator. GAMA takes into account the score from this flyoff, as well as a checklist of the steps they took to complete the flight, a summary of the

design changes they made to the airplane, and three videos submitted throughout the competition on what they learned.

Hayesville High School in North Carolina is the winner of the 2019 GAMA Build A Plane Aviation Design Challenge. As the prize, four students, one teacher, and one chaperone traveled to Glasair Aviation in Arlington, Washington, to build a Glasair Sportsman aircraft. For the winning team, the hands-on experience working side-by-side with experts as they build a real airplane is phenomenal.

STARBASE

Gulfstream partners with the U.S. Department of Defense to sponsor week-long camps for fifth-grade students at Hunter Army Airfield in Savannah, Georgia. The program offers “hands-on, mind-on” activities meant to spark student interest in STEM programs. Students interact with military personnel by working on computers, flying aircraft simulators and participating in other hands-on activities.

5. Technical Colleges.

In Gulfstream’s business, Technical Colleges are a critical pipeline for developing trades and craftspeople for work in our manufacturing and maintenance operations. Although these schools’ existing, standard programs provide a solid skills development base, our most valuable work with them has been in situations where we have helped develop the curricula.

This joint development includes Gulfstream co-developing and even co-teaching Technical School courses. Several examples from Gulfstream’s experience, we believe, provide insight.

Example: A&P School.

FAA regulations require that aircraft maintenance technicians have an FAA-issued Airframe and Powerplant license (an “A&P License”). Given our need for qualified A&P technicians, we partnered with the A&P School of the Savannah Technical College to ensure that its courses aligned with our needs.

The school appointed our experts to the Advisory Board. Gulfstream has donated funds (*e.g.*, to purchase avionics training equipment) and items to the school to provide the students with real-world equipment, including a complete Gulfstream aircraft – a model G100 that had reached the end of its useful life. By being an active participant in the A&P School’s curriculum development, and ongoing class work, we are able to help the faculty stay aligned with the latest industry techniques and get to know the students.

Example: Advanced Cabinet Maker Course.

As an excellent example of the in-depth approach, a number of years ago Gulfstream was having difficulty finding skilled cabinet makers to build furniture for our aircraft interiors. To address

this issue, Gulfstream partnered with Savannah Technical College. In doing so, we learned that other area businesses in the boat and home construction industries were having similar issues.

Gulfstream paired our cabinet shop master craftspeople with the school to develop a course. We also provided a master craftsperson to co-teach the course with the school's faculty. This provided the double-benefit of ensuring that instruction matched our requirements and it allowed our instructor to identify the top students for recruitment to Gulfstream.

Example: Manufacturing Technology Transition Training.

Gulfstream's G650, which first entered customer service in 2012, is built using significantly different manufacturing techniques than aircraft produced previously. Consequently, ramp up of that production line necessitated transition training for our existing employees moving from other aircraft to the G650.

To assist, we enlisted the help of Georgia's Quick Start Program. Quick Start, which is part of the Technical College System of Georgia, offers tailored employee training services to qualified companies. Quick Start instructors paired with our team to develop transition training programs for specific, proprietary manufacturing techniques used for the G650. Because the program's mandate allows it to enter into Proprietary Information Agreements with its customers, Gulfstream was able to use this resource without jeopardizing our valuable trade secrets.

6. Military.

Recruiting U.S. Military Veterans is a vital part of Gulfstream's strategy for finding employees with the necessary technical skills. As direct evidence of that fact, approximately twenty-five percent (25%) of Gulfstream's domestic employees are U.S. Military Veterans. In our Flight Operations group, approximately ninety percent (90%) of our test pilots are Veterans and approximately seventy five percent (75%) of our other pilots are Veterans. These high percentages are a testament to the quality of training within our Armed Services, and to the cultural fit between them and Gulfstream.

Gulfstream recruits veterans heavily because of the combination of technical skills, disciplined work ethic and leadership skills that they so consistently demonstrate. Aircraft maintenance and avionics technicians, for example, come to Gulfstream with skills and experience that enable them to quickly integrate into our operations.

To recruit Veterans, we use a proactive, comprehensive approach that includes extensive in-person outreach to military bases – including participation in Transition Assistance Program Classes at those bases – customized Veteran recruitment advertising, and active participation in a number of Veterans organizations.

7. Engineering Universities.

Our engagement with Universities relies heavily on our intern and co-op programs with those schools. Also, in keeping with the High Demand Career Initiative concepts discussed above, we

are becoming increasingly active in providing input on specific skills-needs and engaging students in for-credit research projects that complement their skills development and our research needs.

Like many companies, we have intern and full co-op programs in our engineering department. Interns and co-ops are hired through a competitive selection process. While working, they are paid a competitive hourly wage and receive 401k and life insurance benefits. Gulfstream also provides housing for students who do not live in the local area. In 2019, we had one hundred fifty-eight (158) interns and one hundred fifty-nine (159) co-ops.

Interns typically work during their summer breaks. Co-ops alternate between a semester of school and a semester at Gulfstream and must complete three (3) semesters at Gulfstream.

These programs provide an excellent resource for hiring students with the right skills, and as importantly the right cultural fit, for Gulfstream. Students work alongside our full-time engineers in our various programs. They also rotate between departments within engineering, so that they and we can find the best fit.

The success of these programs is demonstrated by the hiring. Over ninety percent (90%) of Gulfstream's entry-level engineering positions are filled through our intern and co-op programs.

In conjunction with these programs, we have developed and continue to mature our partnership agreements with Universities. These agreements include both formal and informal arrangements for research projects, mini-sabbatical opportunities for faculty to work at Gulfstream and Gulfstream employee memberships on Advisory Boards.

Mr. Chairman, Members of the Subcommittee, I thank you for the opportunity to share Gulfstream's experience in this critically important issue of ensuring a highly skilled aviation workforce well into the future.