G650 and G280 Training Keeps Pace with Aircraft Deliveries

After years of careful development and testing, both the Gulfstream G280 and the Gulfstream G650 are being delivered into service worldwide.

From the beginning, FlightSafety worked closely with Gulfstream to develop training for both aircraft. This high level of coordination and teamwork resulted in comprehensive pilot and maintenance training programs and advanced training equipment.

As a result, mature and effective training programs were available when new aircraft deliveries began.

The G280 simulator and training program are operational at the Dallas/Fort Worth Learning Center, and Savannah has two G650 simulators to support its training program. Each simulator is equipped with FlightSafety’s industry-leading electric motion and control loading technology and VITAL X visual system. Comprehensive training programs feature MATRIX, FlightSafety’s exclusive integrated training system.

Maintenance technicians who service and support these aircraft benefit from TTT – Total Technical Training programs developed and delivered jointly by FlightSafety and Gulfstream.
Continually Improving Our Training Partnerships

Just as Gulfstream never stops its quest for constant improvement in its aircraft, FlightSafety and Gulfstream work tirelessly to enhance the training options for Gulfstream operators.

This year we are adding a third Gulfstream G650 simulator – this one in Long Beach. It will be the first of FlightSafety’s newest generation of simulators offering enhanced visual systems and improved modular avionics support. The simulator will support both pilot and maintenance training on the West Coast. Major classroom improvements accompany the new training.

We also continue to add new eLearning programs, including our new G550 eRecurrent course and a ground handling and servicing course.

And we’re extending our FlightSafety iPad applications, including iFlightDECK and iFlashCARDS for Gulfstream G280, GIV, GV, G450, G550 and G650 pilot training programs. Additionally, iQuizCARDS for maintenance technicians are coming soon.

This year, too, marks the full incorporation of our Safety Management System within FlightSafety. We have incorporated SMS throughout our training programs – becoming the first FAR Part 142 training center to do so. All with the goal of enhancing your safety.

Thanks for everything you do to enhance safety. We hope you will enjoy this edition of Training Matters.

LOFT: New Training Pushes Crews Out of Their Comfort Zones

Flight crews that seek the next level of performance in their ability to respond to challenging situations now can turn to a new training opportunity from Gulfstream and FlightSafety.

CRM/Human Factors Line Oriented Flight Training (LOFT)

This presents a highly integrated and challenging curriculum created to measure and help improve a flight crew’s ability to perform as a crew during a long-range international flight. During the flight, aircraft issues arise that significantly impact the passengers, requiring complex decision-making by the crew. An optimal outcome hinges on the crew’s competency in coordination, communication, monitoring skills, intervention protocols, resilience to unforeseen events and response to a startling event. The crew’s proficiency in CRM (non-technical) skills will be highlighted and selected aspects identified for subsequent discussion.

An Intense Four Hours

The CRM/Human Factors (LOFT) requires four hours in the simulator for a crew of two pilots. Prior to attendance, the crew receives a trip notice from their flight department. They then proceed to plan the trip exactly as they would in their department and brief the instructor on their planning during a one-hour pre-brief session. The crew will do everything except actually file the flight plan. Once the CRM/Human Factors (LOFT) begins, it is allowed to continue to its logical conclusion without instructor intervention.

There will normally be some time remaining for the instructor to allow practice of any technical aspects requiring revision. The extended debrief will feature a detailed and facilitated analysis with emphasis on the crew’s CRM attributes. It will focus on gaining the crew’s self-recognition of the behavioral factors affecting their human performance and of the CRM and crew communication issues that arise. Significant use of the SimVu post briefing tool will be used to “relive” the CRM/Human Factors (LOFT) as needed.

The Importance of Communication

The objective of the course is to show that no matter how competent one might be technically, weaknesses in communication and CRM skills can often lead to an unsatisfactory or unexpected outcome. This course is designed to challenge the crew and highlight strengths in their CRM skills. The crew will be trained to proficiency prior to the end of the simulator portion. The crew’s CRM/Human Factors will be discussed during the post-brief and experienced advice given collaboratively on how the crew can improve.
Dallas/Fort Worth now offers Gulfstream G280 Cabin Systems training – tailored to the Customer’s aircraft serial number. Before the course begins, Gulfstream provides specific cabin details to FlightSafety as part of the Total Technical Training partnership. This enables the instructor to customize the course to the Customer’s specific training needs and objectives.

The course includes both classroom and practical training. Following the four-hour theoretical classroom learning, Customers visit Gulfstream’s G280 Completions Center at Dallas Love Field, applying the knowledge obtained in the classroom to the actual aircraft.

If you fly a Gulfstream G550 aircraft. FlightSafety’s new G550 eReccurrent program gives you the flexibility to study ground school topics online, at your own place and time, and then complete the simulator training at an appropriate Learning Center.

“eReccurrent continues to demonstrate our commitment to flexible training, providing our Customers the option of training from home base, saving travel time and costs, while still providing a valued training experience,” says Andy Johnson, Savannah Learning Center Manager. “We continue to respond to our Customer requests for customized training and value our training partnerships with each Customer.”

Easy to Follow
Drawing on FlightSafety’s G550 training expertise, course designers created animated and easy-to-follow lessons, providing a general overview of aircraft systems. The 16-hour course divides content into a series of topics, presenting the pilot with test questions that provide feedback on performance level. Pilots complete a final examination at the center before beginning simulator training.

The FAA allows pilots a 60-day window, from the start of the online ground school through to the final checkride, to complete the 61.58 endorsement.

To meet FAA requirements, pilots must also complete the mandatory two-hour LiveLearning Crew Resource Management course within the same 60-day training window.

Call a Gulfstream Learning Center for more information: Savannah, Dallas, Hong Kong, Farnborough, Long Beach and Wilmington.

DFW Offers G280 Cabin Systems Training

Dallas/Fort Worth now offers Gulfstream G280 Cabin Systems training – tailored to the Customer’s aircraft serial number. Before the course begins, Gulfstream provides specific cabin details to FlightSafety as part of the Total Technical Training partnership. This enables the instructor to customize the course to the Customer’s specific training needs and objectives.

The course includes both classroom and practical training. Following the four-hour theoretical classroom learning, Customers visit Gulfstream’s G280 Completions Center at Dallas Love Field, applying the knowledge obtained in the classroom to the actual aircraft.

A Winning Combination – Customers agree that the approach works. “The training class in combination with picking up the aircraft was great,” a recent Customer says. “We received a lot of hands-on training on our own aircraft.” Says another, “The G280 class was very informative. The best part was the actual hands-on training. It is so much easier to understand the information presented in the classroom with the experience we had on the airplane.”

The DFW Learning Center, in conjunction with Gulfstream, offers G280 pilot, maintenance, cabin systems and practical training. Classrooms fully incorporate MATRIX technology, and the G280 simulator is an FAA-approved, Level D device.

For further information, please contact Robert Haggard at the DFW Learning Center: 866.486.8733 or Robert.Haggard@flightsafety.com.
These rapidly changing requirements have us all talking about when and how best to meet them.

Meanwhile, those who don’t have the necessary approvals and equipment will see mounting limitations on their operational capabilities, increased flight times, extra fuel burn and more time on our engines and airframes. And regulatory agencies admit candidly that “Best Equipped = Best Served.”

Challenges include budgeting for these expensive changes and scheduling time for installation. But delay could bring additional challenges as it may become difficult both to obtain the hardware and to get onto a shop’s installation schedule.

Focused on North Atlantic
The North Atlantic has dominated the discussion. That’s not surprising, considering that approximately 1,400 flights cross daily. Already the two core tracks mandate Required Navigation Performance (RNP-4) certification with Automatic Dependent Surveillance – Contract (ADS-C) and Controller Pilot Data Link Communication (CPDLC) on Flight Levels 360 through 390. Spacing has not yet been reduced, but eventually will reach 25-5. (25 NM Lateral and 5 Minutes in Trail).

The requirement area will expand both laterally and vertically over time. Phase 2 will be implemented in three steps starting in February 2015.

Data Link systems will be mandated to expand during Phase 2 to specified portions of the North Atlantic Minimum Navigation Performance Specifications (MNPS) airspace. We can expect all MNPS airspace to be included in the not too distant future.

A Less Costly Option
Is there a less expensive and more practical option for aircraft that cross the North Atlantic infrequently? Perhaps Automatic Dependent Surveillance-Broadcast (ADS-B) will provide that alternative.

Isvia, Iceland’s air navigation service provider, is in the process of implementing ADS-B service in the Reykjavik control area south of 70°N. Isivia plans to install 18 ADS-B receiver stations in Iceland, Greenland and the Faroe Islands. The system will create a transatlantic surveillance corridor allowing a reduction of aircraft separation. ADS-B will provide a similar level of safety as that provided by Future Air Navigation System FANS 1/A in the tracks. The system could be fully operational this year.

Additional Equipment Required
Although this ADS-B surveillance corridor will get you to Europe, we should note that the Link 2000+ mandate requires other equipment such as Very High Frequency Data Link (VDL) Mode 2 by February 2015.

The United States will require ADS-B Out by 2020 as part of the FAA’s NextGen air traffic control management system. Already Australia, Hudson Bay, Hong Kong, Vietnam and Singapore require ADS-B above FL290. Although Australia has recently provided some relief granting temporary exemptions until December 2015, and these only in areas that have adequate radar coverage, the trend is established for more airspace to adopt ADS-B requirements. Europe will require it by 2017.

An excellent reference for technical details on specific equipment requirements can be found in Business and Commercial Aviation magazine for April 2014: “Now’s the Time for ADS-B Compliance” by Fred George.

Although current United States deadlines for navigational capability may seem comfortably far off, that window is closing faster than you think – especially if you plan any international flights.
Learn ADS-B at Your Convenience with eLearning

FlightSafety’s FAA-approved eLearning ADS-B course provides pilots with the training necessary to apply for FAA authorization to conduct ADS-B Out operations outside the boundaries of U.S.-designated airspace.

The objective of this 45-minute course is to develop the pilot’s knowledge of ADS-B system operation, and both the normal and abnormal operating procedures. Pilots review flight planning considerations, MEL requirements and important human factors issues. The course also introduces two features of ADS-B operations that business jets will not use until later when a better case can be made for their necessity: ADS-B In operations and the In-Trail Procedure.

Pilots who successfully complete the course earn a certificate of training as evidence of being qualified for authorization to use the ADS-B system as required by certain routes and procedures worldwide.

FlightSafety Expands Course Offerings for the G150 Maintenance Technician

Expanded maintenance training now available at Dallas/Fort Worth for the Gulfstream G150 focuses on flap/slat malfunctions, which are among the leading causes of missed flights for this aircraft.

The five-day 1125 Astra/G100 troubleshooting course now incorporates G150 system differences. The course is designed for technicians who have experience maintaining the G150 but who wish to expand their knowledge and troubleshooting skills for this key aircraft system.

Instruction thoroughly details all aspects of the G150 flap/slat system – servicing, inspection and rigging. The training places special emphasis on using the manufacturer's approved maintenance instructions and test equipment.

Approximately half of the course consists of hands-on, practical lab exercises focused on rigging, testing and troubleshooting the system.

Upon successful course completion, the technician will be familiar with all aspects of the operation, servicing, adjustment, troubleshooting and return to service of the flap/slat system.
Fresh, New Cabin Attendant Culinary Training

Take advantage of training in the latest culinary techniques and trends, now offered at the FlightSafety Learning Centers in Teterboro and Savannah. The Corporate School of Etiquette’s dynamic, much-in-demand Culinary Arts Course builds the exemplary culinary skills needed for best-in-class corporate cabin service.

These include knife skills, plate presentation, cooking techniques, menu preparation and diverse cuisines. The flexibility of this hands-on course enables it to be tailored to meet specific flight department service standards and requirements. It fulfills needs for both departments and individual flight crews.

The Culinary Arts Course meets the NBAA SEBA Level Three for the Lead Flight Attendant Requirement. It includes advanced culinary training and focuses on the specific needs of long-range aircraft, from space constraints due to high-density aircraft to optimal food storage practices. It could be the course that turns your in-flight meal delivery from routine to revolutionary.

General Emergency Training Meets SMS Recommendation

As more flight departments develop and implement comprehensive safety management systems, FlightSafety General Emergency training helps meet important goals in most SMS recommendations.

eLearning Crew Emergency training delivers convenience while meeting IS-BAO recommendations for 12-month recurrent training.

When this online class is taken in conjunction with the General Emergency Drills class it is possible to meet most emergency procedures required for Part 135 as well as those of most international regulatory authorities. The content also meets initial and 24-month IS-BAO recommendations.

“Hands on” or “touch” operation of FAA-approved Emergency Overwing Exits is an important element of this training and FlightSafety is equipped with full Cabin Trainers as well as Overwing Exit Trainers to address all Gulfstream aircraft, from the Gulfstream GII through the Gulfstream G650.
Training Matches the Sophistication of Gulfstream’s Cabin Systems


The two longtime partners worked together through the Total Technical Training program to develop instruction designed to increase operational knowledge as well as improve the troubleshooting skills of maintenance technicians, cabin attendants and pilots who support and maintain Gulfstream aircraft cabin systems. The training features instructors who are thoroughly familiar with these new cabin technologies and also with the aircraft in which they operate.

Gulfstream cabin systems experts help reinforce classroom training with practical, on-equipment experience. Interactive, practical training features FlightSafety-developed DeskTop Simulators, aircraft-specific touch-screen Emulators and Gulfstream’s Cabin Control mobile device application.

As an essential element of the training, Satcom Direct provides demonstrations on the Rosen Blu-ray player, the multifunction printer and phone calls using the iPhone handsets.

COURSES AND LOCATIONS

Savannah
- G650 Cabin Attendant Transition
- G650 Cabin Systems
- G450/G550 Elite Cabin Systems
- G280 Cabin Attendant Transition
- G280 Cabin Systems

Dallas
- G280 Cabin Systems

In addition, Gulfstream cabin systems training may be conducted on your aircraft at your location. Contact your Learning Center for details.

Cabin Systems Training for Flight Attendants

Training for corporate flight attendants provides familiarization with the features and operation of Gulfstream cabin systems through both interactive learning and hands-on training. The course blends system descriptions with operational understanding.

Systems Covered
- Gulfstream Cabin Management System – Galley Touchscreen and PCU operation to control cabin systems.
- Water and Waste – Cabin systems set-up, line draining, purging and cold weather operations.
- Seats, Divan, Tables and Doors – Operation and familiarization.
- Galley Equipment – Galley features, oven, microwave, coffee maker, operation and familiarization.
- Communications – In-flight telephone communication and internet use.
Pilots operating the Gulfstream G550 aircraft now can take advantage of the enhanced instructional experience offered by FlightSafety’s exclusive Operational Day Flow training curriculum.

Long the leader in scenario-based simulation training, FlightSafety now brings the same scenario-based training to the ground school classroom. Operational Day Flow training is structured on aircraft systems performance and range, with scenarios that immerse pilots in real-world, day-to-day operations organized by phase of flight.

The result is an enhanced, interactive, hands-on learning experience with multiple benefits:
- Superior knowledge retention
- Rapid comprehension of learning materials
- Greater systems understanding in less time
- Enhanced classroom participation
- Improved flight simulator performance
- Increased situational awareness in the cockpit
- A more enjoyable training experience

Operational Day Flow training currently is available for the Gulfstream G450 and Gulfstream G550 aircraft and will be available soon for other Gulfstream models.

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New Course Helps Familiarize Crew and Staff With Your Gulfstream G650

Hit the ramp running with your new aircraft with the help of the FlightSafety Gulfstream G650 Series Familiarization Course. The course provides an in-depth introduction that’s appropriate for everyone from maintenance managers and maintenance coordinators to support staff and certifying staff.

The 30-hour course includes general familiarization with the aircraft as well as systems descriptions and limited operation. The course also provides an overview of the manufacturer’s approved maintenance programs and the master minimum equipment list along with their structure and requirements.

The course draws on the FlightSafety Familiarization Training Manual – available on the iPad – and Gulfstream publications to deliver upper-level technical data.

For more information please contact Liz Robinson at the FlightSafety International Savannah Maintenance Learning Center, 912.790.6828 or liz.robinson@flightsafety.com.
Flying blue-data approaches is incredibly easy when the automation behaves exactly as the flight crew expects. But when it doesn’t, the unexpected can add angst to this already challenging phase of flight. So, let’s talk about the angst and how to keep it out of your cockpit.

Look at the accompanying chart, the RNAV (RNP) Yankee Runway 31 approach procedure at Friedman Memorial Airport serving Sun Valley, Idaho, and imagine you’re over the lake north of waypoint PRESN at 11,500 feet MSL, heading 180. Don’t be distracted by the fact that this is an RNP AR approach, as plenty of RNAV (GPS) approaches cause the same problem. This particular approach was chosen because it clearly illustrates the issue.

The controller says, “Golf Alpha, proceed direct PRESN, maintain 11,500 until established, cleared for the RNAV Yankee Runway 31 approach.” And you respond with, “Roger, cleared for the approach.” Up on the flight guidance panel, you push the LNAV button and then the approach button. Standby for some angst because it’s headed your way.

So, what’s the issue?
The VNAV button has not been selected, the altitude window still displays 11,500 and you wonder why the aircraft hasn’t descended. After all, you think, pushing the approach button arms the VGP so it will capture the glide path and VGP doesn’t respect the altitude window.

That’s incorrect in this situation, as pushing the approach button will arm VGP so it will capture the P path, and after it has done so it will not respect the altitude window.

Unfortunately, the P path will not be displayed prior to, at or even immediately after passing PRESN; in fact, it won’t be displayed until the aircraft passes waypoint HEVAG. Without a P path to capture, and without VNAV selected, and without a lower altitude set on the flight guidance panel, the aircraft will stay at 11,500 feet MSL on its way to WTSOX, while the flight crew comes up with Plan B to meet the altitude constraints. Plan B is where angst enters your cockpit.

Two essential things to know
1. An approach procedure only has one P path, and it terminates at the missed approach point. In other words, the P path is the final segment’s glide path. It is not displayed on the primary flight display until the aircraft is very near the final segment, but it is always displayed when the final approach fix becomes the “to” waypoint.
2. VGP will not capture V path – only a P path.

When these two items and VGP’s behavior are applied to the situation at Sun Valley, you can begin to see why the aircraft does not descend as it passes PRESN.

How to avoid the issue
The remedy? When cleared for the approach, set the aircraft up for a VNAV descent to the FAF altitude and push the approach button later, when the aircraft tells you to. The corollary to this remedy is: Don’t push the approach button just because the controller says, “Cleared for the approach.”

In the Sun Valley situation, after hearing the words “cleared for the approach” you should select LNAV, then VNAV, and then set the FAF altitude in the Altitude Pre-Select window. Passing PRESN, the V path will be captured and the altitude constraints at WTSOX will be met. Passing WTSOX, the next V path will be captured and the constraint at HEVAG will be met. Passing HEVAG, the P path will be displayed and so too will the “ARM APR” icon, right above the Vertical Deviation Indicator. The icon is the aircraft’s way of telling you to push the approach button. After VGP captures the P path, transitioning from armed to active, set the missed approach altitude.

The worst kind of angst in your cockpit is the kind you can prevent. Knowing what your automation is trying to do is big step toward prevention. Finally, have a strategy and a tactical plan that works with the automation, not against it.

The Strategy: VNAV to the FAF
Here’s a tactical plan for keeping angst out of the cockpit when flying blue-data approaches like the Sun Valley one:

1. Cleared for the approach.
2. Active lateral mode is FMS.
3. Setup for VNAV to the FAF altitude.
4. After the ARM APR icon is displayed, push the approach button (arms VGP).
5. After VGP turns green, set the missed approach altitude.
COLUMBUS
G200 Pilot Training Highlights
• Qualified Part 135/ Part 91/ Part 121 instructors.
• Graphical Flight-deck Simulator with Honeywell FMS.
• MATRIX-based courseware with Desktop Simulation.
• Fully integrated Graphical Flight-deck Simulator.
• Instructors specialized in individualized scenario-based training.
• In-simulator JeppView allowing real-time aeronautical decision-making.
• VNAV-intensive instruction.

DALLAS/FORT WORTH
• Pilot and maintenance training for all mid-cabin Gulfstream aircraft (G100, G200, G150, G280) and select large-cabin (GII, GIII, GIV, G450/G550) pilot and maintenance training.
• Cabin management training for Gulfstream G150 and G280 aircraft.
• Robert Haggard has been named Maintenance Sales Manager for Dallas. Contact him at 972.534.3210.
• Andrew Steyn has been named Aircraft Sales Manager for Dallas. Contact him at 972.534.3200.

LONDON FARNBOROUGH
Farnborough's Gulfstream G550 EASA/FAA Level D-qualified simulator will be upgraded this year to include CPDLC capability and FlightSafety's technologically advanced VITAL 1100 visual system. The program is now led by Stewart Stevenson, former British Airways long-haul captain, ATPL, UK TRI/SFI, TRE/SFE, CRMI and Fellow of the Royal Aeronautical Society, with total multiengine time in excess of 16,000 hours.

LONG BEACH
New G550 Program Manager
Dennis Simon has previous experience as an airline captain, corporate and charter pilot – along with flying experience in the law enforcement field. With experience in the air plus four years at FlightSafety as an instructor and examiner, Simon brings 30 years of experience and nearly 11,000 hours to the G550 training program. He has experience in Learjet, Challenger, Citation and Gulfstream aircraft.

• FlightSafety's third Gulfstream G650 simulator is scheduled to arrive in spring with training commencing in early summer.
• The convertible G550/G450 simulator now offers CPDLC.
• The Cabin Safety Training program recently installed a BBJ door and is ready for training.
• Training includes both Synthetic Vision Enhanced Situational Awareness and Enhanced Navigation Training.

WILMINGTON
• The new Operational Day Flow ground school for Gulfstream G550 Pilot Recurrent will be available starting in fall 2014.
• Wilmington offers Gulfstream GIV pilot training to EASA customers.
• Frontier Airlines now provides service to the New Castle County Airport, making the Wilmington Learning Center even more convenient and accessible.