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Flight Standardization Board Report

Revision: 11
Date: XX/XX/XXXX

Manufacturer Gulfstream Aerospace Corporation

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
T00015AT	GVI	Gulfstream G650	GVI
T00015AT	GVI	Gulfstream G650ER	GVI

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1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	08/29/2012
1	1.3, 1.7, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 4.1, 5.11, 5.5.1, 5.5.2, 6.2, 13.3, Appendix 1	07/16/2013
2	1.7, 5.2.4, 13.4, Appendix 6	07/16/2014
3	5.6 and 13.5	10/17/2014
4	1.1, 5.5.1, 6.2, 13.6, Appendices 1, 2, 4 thru 6	10/19/2015
5	5.2.4, 5.5.1, 5.5.2, Appendix 7	12/28/2016
6	5.3, 5.4.1, 5.4.2, 13.1, Appendices 3 and 5	01/24/2018
7	1.1, 1.7, 5.5.1, 5.5.2, 6.2, Appendices 4 thru 9	02/21/2019
8	All Sections and Appendices 2, 4, 7, 9, 10	01/24/2020
9	All	10/28/2021
10	3, 9.2.1.14, and 9.2.2.10, Appendix 5	04/06/2022
11	2, 3, 4, 5, 6, 9, 12	XX/XX/XXXX

2. INTRODUCTION

The Aircraft Evaluation Division (AED) is responsible for working with aircraft manufacturers and modifiers, during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine:

- 1) The pilot type rating,
- 2) Flightcrew member training, checking, and currency requirements, and
- 3) Operational suitability.

This report lists those determinations for use by:

- 1) FAA employees who approve training programs,
- 2) FAA employees and designees who certify airmen, and
- 3) Aircraft operators and training providers, to assist them in developing their flightcrew member training, checking, and currency.

3. HIGHLIGHTS OF CHANGE

This revision adds paragraphs 9.2.1.15 and 9.2.2.11, Flight Management System (FMS) Reset Caused by Lateral Direct-To during Cruise Climb or Cruise Descent to Special Emphasis Areas.

4. BACKGROUND

The Transport Aircraft Long Beach Aircraft Evaluation Group (AEG) formed a Flight Standardization Board (FSB) that evaluated the Gulfstream GVI (G650) as defined in FAA Type Certificate Data Sheet (TCDS) No. T00015AT. The evaluation was conducted during July 2012 using the methods described in FAA Advisory Circular (AC) 120-53B, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

The FSB conducted flight evaluations of the Head-Up Display (HUD) System. It, as well as the associated Airplane Flight Manual (AFM) change, was found to be operationally suitable. Training checking and currency requirements are listed in Appendix 4, Head-Up Display (HUD) Systems.

In October 2018, the FSB conducted flight evaluations of enhanced flight vision systems (EFVS) operations in Gulfstream GVI G650 aircraft serial number (S/N) 6001. It, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 5, Enhanced Flight Vision System (EFVS) Operations.

The FSB conducted flight evaluations of PlaneView II Avionics Software Version “Block Point I” (ASC 901). It, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 6, PlaneView II Avionics Software Version “Block Point I” (ASC 901).

The FSB conducted flight evaluations of PlaneView II Avionics Software Version “Block Point II” (ASC 902). It, as well as the associated AFM change, was found to be operationally suitable. Training checking and currency requirements are listed in Appendix 7, PlaneView II Avionics Software Version “Block Point II” (ASC 902).

In October 2018, the FSB conducted flight evaluations of Steep Approach Landing Operations (ASC 101) in Gulfstream GVI G650 aircraft S/N 6001. It, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 8, Steep Approach Landing Operations (ASC 101).

In October 2019, the FSB conducted flight evaluations of Category (CAT) II Instrument Landing System Approach Operations (ASC 109). It, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 9, CAT II Instrument Landing System Approach Operations (ASC 109).

In March 2021, the FSB conducted a flight evaluation for the installation of PlaneView II Avionics Software Version “Block 3” in Gulfstream GVI (G650/G650ER) aircraft S/N 6001. The FSB also conducted evaluations in the GVI Integrated Test Facility (ITF). It, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 10, PlaneView II Avionics Software Version “Block 3” (ASC 903).

The Transport Aircraft Long Beach AEG was designated the Corporate Aviation Branch as a part of a reorganization of the AED.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACFT Aircraft
- ACS Airman Certification Standards
- ADS-B Automatic Dependent Surveillance-Broadcast
- AED Aircraft Evaluation Division
- AEG Aircraft Evaluation Group
- AEO All-Engines-Operating
- AFM Airplane Flight Manual
- AFMS Airplane Flight Manual Supplement
- AOA Angle of Attack
- AOM Aircraft Operating Manual
- AP Autopilot
- AP TCAS Autopilot Traffic Alert and Collision Avoidance System
- ASC Aircraft Service Change
- AT Autothrottle
- ATN Aeronautical Telecommunications Network
- ATP Airline Transport Pilot
- AV Audiovisual Presentation
- CAS Crew Alerting System
- CASA Civil Aviation Safety Authority
- CAT Category
- CBT Computer-Based Training
- CPDLC Controller-Pilot Data Link Communications
- CPT Cockpit Procedures Trainer
- DA Decision Altitude
- DH Decision Height
- DME Distance Measuring Equipment
- ECL Electronic Checklist
- EFB Electronic Flight Bag
- EFVS Enhanced Flight Vision System
- EGPWS Enhanced Ground Proximity Warning System
- EICAS Engine Indicating and Crew Alerting System
- ETP Equal Time Point
- EVS Enhanced Vision System
- FAA Federal Aviation Administration
- FANS Future Air Navigation System
- FCC Flight Control Computer
- FD Flight Director

- FFS Full Flight Simulator
- FMS Flight Management System
- FPA Flight Path Angle
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSTD Flight Simulation Training Device
- FTD Flight Training Device
- GPS Global Positioning Satellite
- HO Handout
- HSI Horizontal Situation Indicator
- HUD Head-Up Display
- IAP Instrument Approach Procedure
- ICBI Interactive Computer-Based Instruction
- ILS Instrument Landing System
- I-NAV Integrated Navigation Map
- ITF Integrated Test Facility
- LNAV Lateral Navigation
- LPV Localizer Performance with Vertical Guidance
- MDR Master Differences Requirements
- MEL Minimum Equipment List
- MFF Mixed Fleet Flying
- M_{MO} Maximum Operating Mach Number
- MTOW Maximum Takeoff Weight
- N₁ Rotational Speed of the Low-Pressure Compressor in a Dual-Spool Gas Turbine Engine

- NAS National Airspace System
- NIM Noise Information Manual
- NWS Nosewheel Steering
- ODR Operator Differences Requirements
- OEI One-Engine-Inoperative
- PF Pilot Flying
- PFD Primary Flight Display
- PIC Pilot in Command
- PLI Pitch Limit Indicator
- PM Pilot Monitoring
- PNR Point of No Return
- PTT Part Task Trainer
- RA Resolution Advisory
- RNAV Area Navigation
- RNP Required Navigation Performance
- RNP AR Required Navigation Performance Authorization Required
- RTO Rejected Takeoff
- S/N Serial Number
- SIC Second in Command

- SIL Service Information Letter
- SMGCS Surface Movement Guidance and Control System
- SPDS Secondary Power Distribution System
- SU Stand-Up Instruction
- TC Type Certificate
- TCAS Traffic Alert and Collision Avoidance System
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- V₁ Takeoff Decision Speed
- V₂ Takeoff Safety Speed
- VMC Visual Meteorological Conditions
- V_{MO} Maximum Operating Limit Speed
- VSD Vertical Situation Display

6. DEFINITIONS

These definitions are for the purpose of this report only.

- 6.1 Base Aircraft.** An aircraft identified for use as a reference to compare differences with another aircraft.
- 6.2 Current.** A crewmember meets all requirements to operate the aircraft under the applicable operating part.
- 6.3 Differences Tables.** Describe the differences between a pair of related aircraft, and the minimum levels operators must use to conduct differences training and checking of flightcrew members. Differences levels range from A to E.
- 6.4 Master Differences Requirements (MDR).** Specifies the minimum levels of training and checking required between a pair of related aircraft, derived from the highest level in the Differences Tables.
- 6.5 Mixed Fleet Flying (MFF).** The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.
- 6.6 Operational Evaluation.** The AED process to determine pilot type rating, minimum flightcrew member training, checking and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics, no-flap landing).
- 6.7 Operational Suitability.** The AED determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 121, 133, and 135).
- 6.8 Qualified.** A flightcrew member holds the appropriate airman certificate and ratings as required by the applicable operating part.

- 6.9 Related Aircraft.** Any two or more aircraft of the same make with either the same or different type certificates (TC) that have been demonstrated and determined by the Administrator to have commonality.
- 6.10 Seat-Dependent Tasks.** Maneuvers or procedures using controls that are accessible or operable from only one flightcrew member seat.
- 6.11 Special Emphasis Area.** A training requirement unique to the aircraft, based on a system, procedure, or maneuver, which requires additional highlighting during training. It may also require additional training time, specialized flight simulation training devices (FSTD), or training equipment.
- 6.12 Specific Flight Characteristic.** A maneuver or procedure with unique handling or performance characteristics that the FSB has determined must be checked.

7. PILOT TYPE RATING

- 7.1 Type Rating.** The Gulfstream GVI (G650/G650ER) type rating designation is GVI.
- 7.2 Common Type Ratings.** Not applicable.
- 7.3 Military Equivalent Designations.** Military aircraft that qualify for the GVI type rating can be found at www.faa.gov under “Licenses & Certificates,” “Airmen Certification,” “Online Services,” “Aircraft Type Rating Designators.” This webpage is kept up-to-date and can be found at https://www.faa.gov/licenses_certificates/airmen_certification/.

8. RELATED AIRCRAFT

- 8.1 Related Aircraft on Same TCDS.** The GVI (G650) is related to the GVI (G650ER).
- 8.2 Related Aircraft on Different TCDS.** Not applicable.

9. PILOT TRAINING

9.1 Airman Experience.

- 9.1.1 Airmen receiving initial GVI (G650/G650ER) training should have previous operational experience in multiengine turbojet aircraft, new generation avionics, high-altitude operations, electronic checklist (ECL), and flight management system (FMS) experience. Pilots without this experience may require additional training.
- 9.1.2 Airmen receiving differences, upgrade, or transition GVI (G650/G650ER) training are assumed to have previous experience in multiengine turbojet aircraft, new generation avionics, high-altitude operations, ECL, and FMS. Pilots without this experience may require additional training.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during ground training:

- 9.2.1.1 Abnormal and Emergency Procedures. Gulfstream's philosophy is to not identify any steps in the GVI (G650/G650ER) abnormal or emergency procedures as "memory items," yet Gulfstream expects pilots to perform some of the initial and critical steps without immediate reference the checklist. Gulfstream has advised that the initial, critical pilot responses for the following emergency procedures should be performed promptly without reference to a checklist: rejected takeoff (RTO), engine failure or fire after takeoff decision speed (V1), emergency descent, rapid decompression, autopilot (AP) or autothrottle (AT) uncommanded disconnect, engine exceedance, overspeed, stall protection or stall warning activation, flight control jams, total loss of braking, Enhanced Ground Proximity Warning System (EGPWS) alert, wind shear alert, and Traffic Alert and Collision Avoidance System (TCAS) alert. In addition, pilots are expected to don oxygen masks promptly when appropriate (e.g., when smoke is detected). Operators and training providers should ensure pilots are trained accordingly during initial, transition, upgrade, and recurrent training.
- 9.2.1.2 Flight Control Modes. This aircraft utilizes fly-by-wire flight controls. It is important to thoroughly understand the operation of the aircraft in each of the flight control modes. This item must be included in initial and recurrent training.
- 9.2.1.3 Flight Control Computer (FCC). Knowledge of what occurs when the FCC detects a flight control anomaly that commands a flight control surface's hydraulic actuator into damped bypass mode, expected aircraft handling, and flightcrew action. This item must be included in initial and recurrent training.
- 9.2.1.4 Fan Blade Out. This aircraft is unique in that the vibrations caused by the loss of rotational speed of the low-pressure compressor in a dual-spool gas turbine engine (N_1) fan blade increase as the aircraft slows. It is not intuitive, but the pilot will need to speed up to maximum operating Mach number or maximum operating limit speed (M_{MO}/V_{MO}) as applicable when the aircraft is vibrating severely due to a fan blade out. This item must be included in initial and recurrent training.
- 9.2.1.5 Zero Flap Landing (Including the Effects of Wing Anti-Ice). Selecting the wing anti-ice "ON" changes the flight control logic for Angle of Attack (AOA) protection, increasing the available AOA, and providing a lower approach speed. After main gear touchdown, the nose pitches up significantly and must be positively lowered. This item must be included in initial training.

- 9.2.1.6 Emergency Descent Procedure. The AP may disconnect due to AOA protection activation if the speedbrake is rapidly deployed. This item must be included in initial training.
- 9.2.1.7 Slow Engine Response. Engine response to full-power requests is slow at high altitudes and during any maneuvers with flaps less than 22°. This item must be included in initial training.
- 9.2.1.8 Aerodynamics. This item must be included in initial training.
- a) Yaw-Induced Roll. The importance of not exceeding the commanded 9° fixed pitch attitude during rotation until required to capture takeoff safety speed (V_2) with one-engine-inoperative (OEI).
 - b) High-Induced Drag. The risk of getting slow and the associated difficulty in recovering with the thrust available at or near maximum cruise altitude in level flight.
- 9.2.1.9 Triple FMS Failure. It is possible for all three FMS to fail temporarily while in the synchronous mode if an internal calculation error occurs. This item must be included in initial training.
- 9.2.1.10 HUD Systems. See Appendix 4.
- 9.2.1.11 EFVS. See Appendix 5.
- 9.2.1.12 Nosewheel Steering (NWS) Failure on Landing. NWS may fail upon touchdown as indicated by the amber “Steer by Wire Fail” engine indicating and crew alerting system (EICAS) message. The accompanying aural indication will be inhibited, so the failure may not be readily detected. Tiller steering and rudder pedal controlled NWS will be inoperative. This will require the use of rudder and differential braking to maintain directional control on the runway. This item must be included in initial and recurrent training.
- 9.2.1.13 Rudder Surface Inoperative. It is possible for both rudder actuators to become inoperative in flight, resulting in rudder failure and requiring the use of asymmetrical thrust to maintain directional control during approach and landing. This item must be included in initial and recurrent training.
- 9.2.1.14 Primary Flight Display (PFD) and/or Air Data Malfunctions. It is possible for flight crews to experience PFD and/or Air Data Malfunctions inflight. Training on the use of the PFD and/or Air Data Malfunctions checklist must be included in initial and recurrent training.
- 9.2.1.15 FMS Reset Caused by Lateral Direct-To During Cruise Climb or Cruise Descent. It is possible when in Cruise Climb or Cruise Descent mode, that the Lateral Direct-To function may not work as designed. Performing a Lateral Direct-To a waypoint down-path from a waypoint

which has an active cruise altitude constraint will be unsuccessful and drive FMS instability which results in repeated “Sync in Progress” scratch pad messages. When the “Sync in Progress” scratch pad messages are present, pilot FMS actions will be unsuccessful. Pilots should not attempt a Lateral Direct-To action in these situations unless taking the action describe below beforehand. This issue can be prevented by making the FMS recalculate the vertical profile before initiating the Lateral Direct-To action. Detailed directions are listed in the Honeywell released Service Information Letter (SIL), Publication Number D202406004397, Revision 0, on June 30, 2024, and the G650 Frequently Asked Questions. After the vertical profile is recomputed, a successful Lateral Direct-To action can be performed without FMS instability occurring. This item must be included in initial and recurrent training.

- 9.2.2 Pilots must receive special emphasis on, and perform the following areas during flight training:
- 9.2.2.1 Flight Control Modes. This aircraft utilizes fly-by-wire flight controls. It is important to thoroughly understand the operation of the aircraft in each of the flight control modes. This item must be included in initial and recurrent training.
 - 9.2.2.2 FCC. Knowledge of what occurs when the FCC detects a flight control anomaly that commands a flight control surface’s hydraulic actuator into damped bypass mode, expected aircraft handling and flightcrew action. This item must be included in initial and recurrent training.
 - 9.2.2.3 Fan Blade Out. This aircraft is unique in that the vibrations caused by the loss of an N_1 fan blade increase as the aircraft slows. It is not intuitive to speed up to V_{MO}/M_{MO} (as applicable) when the aircraft is vibrating severely. This item must be included in initial and recurrent training.
 - 9.2.2.4 Zero Flap Landing (Including the Effects of Wing Anti-Ice). Selecting the wing anti-ice “ON” changes the flight control logic for AOA protection, increasing the available AOA, and providing a lower approach speed. After main gear touchdown, the nose pitches up significantly and must be positively lowered. This item must be included in initial and recurrent training.
 - 9.2.2.5 Emergency Descent Procedure. The AP may disconnect due to AOA protection activation if the speedbrake is rapidly deployed. This item must be included in initial training.

- 9.2.2.6 Slow Engine Response. Engine response to full-power requests is slow at high altitudes, during touch-and-go landings, and during any maneuvers with flaps less than 22°. This item must be included in initial training.
- 9.2.2.7 Aerodynamics. The importance of not exceeding the commanded 9° fixed pitch attitude during rotation until required to capture V2 with OEI. The first indication of the approach to a stalling AOA is normally the activation of the stick shaker, but under some circumstances the blue “AOA Limiting” Crew Alerting System (CAS) message may appear first. This item must be included in initial training.
- 9.2.2.8 HUD Systems. See Appendix 4.
- 9.2.2.9 NWS Failure on Landing. Flight training in a full flight simulator (FFS) should include: 1) prior completion of the AFM Before Landing Checklist to inhibit the associated aural warning; and 2) the fault being induced upon nosewheel touchdown with a 15-knot (kn) crosswind. Instructors should introduce the touchdown fault using the element of surprise. NWS should be restored by following the AFM procedure with the aircraft straight ahead on the runway because improper use of differential braking to turn, while taxiing with a free castering nosewheel, could cause damage if the nosewheel travels beyond its limits. The FFS should be capable of triggering the malfunction automatically upon nosewheel touchdown and allow crews to clear the fault by following the AFM procedure. This item must be in initial and recurrent training.
- 9.2.2.10 Rudder Surface Inoperative. It is possible for both rudder actuators to become inoperative in flight, resulting in rudder failure and requiring the use of asymmetrical thrust to maintain directional control during approach and landing in crosswinds. This item, in simulated crosswinds of 10 knots, must be included in initial and recurrent training.
- 9.2.2.11 FMS Reset Caused by Lateral Direct-To During Cruise Climb or Cruise Descent. It is possible when in Cruise Climb or Cruise Descent mode, that the Lateral Direct-To function may not work as designed. Performing a Lateral Direct-To a waypoint down-path from a waypoint which has an active cruise altitude constraint will be unsuccessful and drive FMS instability which results in repeated “Sync in Progress” scratch pad messages. When the “Sync in Progress” scratch pad messages are present, pilot FMS actions will be unsuccessful. Pilots should not attempt a Lateral Direct-To action in these situations unless taking the action describe below beforehand. This issue can be prevented by making the FMS recalculate the vertical profile before initiating the Lateral Direct-To action. Detailed directions are listed in the Honeywell released Service Information Letter (SIL), Publication Number D202406004397, Revision 0, on June 30, 2024, and the G650

Frequently Asked Questions. After the vertical profile is recomputed, a successful Lateral Direct-To action can be performed without FMS instability occurring. This item must be included in initial and recurrent training.

9.3 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the Airline Transport Pilot (ATP) and Type Rating for Airplane Airman Certification Standards (ACS). There are no specific flight characteristics.

9.4 Seat-Dependent Tasks. Pilots must receive training in these seat-dependent tasks:

- a) HUD (left seat); initial, upgrade, and recurrent training.
- b) Passenger Oxygen System activation (right seat); initial training.
- c) Manual Landing Gear Extension (right seat); initial and recurrent training.
- d) NWS (left seat); initial, transition, upgrade, and recurrent training.
- e) Enhanced Vision System (EVS) (left seat); initial, upgrade, and recurrent training.

9.5 Regulatory Training Requirements Which Are Not Applicable to the GVI (G650/G650ER). None.

9.6 Flight Simulation Training Devices (FSTDs). There are no specific systems, procedures, or maneuvers that are unique to the GVI (G650/G650ER) that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the GVI (G650/G650ER) that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Pilots must receive differences training between the GVI (G650) and GVI (G650ER). The level of training is specified in Appendix 3, Differences Tables.

9.8.1 FCC Version 6.2 software is installed with ASC 037 or as part of the production configuration. There are minor procedural changes associated with the Version 6.2 software. Pilots transitioning to the FCC Version 6.2 software should be trained on the differences using Level A training, which can be accomplished through self-instruction by reviewing the changes incorporated in G650 AFM Revision 10 or G650ER AFM Revision 1, and the Gulfstream Operating Manual Supplement (G650-OMS-08) describing the operationally significant changes. There are no checking or currency requirements for this transition.

9.9 Multiple Curricula Training Programs (Reduced Planned Hour Training Programs). The FSB has determined that the GVI (G650/G650ER) shares common characteristics with the GV-SP (G550/G500) or the GIV-X (G450/G350). It may be possible, in accordance with Order 8900.1, Volume 3, Chapter 19, Section 1, paragraph 3-1078, Multiple Curricula of a Single Category, to develop reduced planned hour training programs for pilots with training and experience in the GV-SP (G550/G500) or the GIV-X (G450/G350) aircraft. Candidates for a reduced planned

hour training program in the GVI (G650/G650ER) must, at a minimum, have the following qualifications and recent experience:

- 9.9.1 Must hold an unrestricted type rating in the GV-SP (G550/G500) or the GIV-X (G450/G350) aircraft.
- 9.9.2 Must have a minimum of 150 hours pilot in command (PIC) or second in command (SIC) pilot time in the GV-SP (G550/G500) or the GIV-X (G450/G350) aircraft within the last 24 months.

10. PILOT CHECKING

10.1 Landing From a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the GVI (G650/G650ER) is not extremely remote due to system design. Therefore, demonstration of a no flap approach and landing during pilot certification is required. During a 14 CFR § 61.58 proficiency check, § 91.1065 competency check, or § 135.293 competency check, this task may be required. Refer to Order 8900.1, Volume 5, Airman Certification, when the test or check is conducted in an aircraft versus an FFS.

10.2 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the ATP and Type Rating for Airplane ACS. There are no specific flight characteristics.

10.3 Seat-Dependent Tasks. Pilots must be checked in these seat-dependent tasks:

- a) HUD (left seat); initial, upgrade, and recurrent checking.
- b) Passenger Oxygen System activation (right seat); initial checking.
- c) Manual Landing Gear Extension (right seat); initial and recurrent checking.
- d) NWS (left seat); initial, transition, upgrade, differences, and recurrent checking.
- e) EVS (left seat); initial, upgrade, and recurrent training.

10.4 Other Checking Items.

- a) Precision approach using HUD and EFVS; initial and recurrent checking.
- b) Localizer performance with vertical guidance (LPV) approach; initial checking.

10.5 Flight Simulation Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the GVI (G650/G650ER) that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the GVI (G650/G650ER) that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Not applicable.

11. PILOT CURRENCY

There are no additional currency requirements for the GVI (G650/G650ER) other than those already specified in 14 CFR parts 61, 125, and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The GVI (G650/G650ER) is operationally suitable for operations under 14 CFR parts 91, 125, and 135. The list of operating rules evaluated is on file at the Corporate Aviation Branch, AED.

13. MISCELLANEOUS

13.1 Flightcrew Sleeping Facilities (Part 135). The GVI (G650) forward sleeping facility as installed by Aircraft Project No. TC8700AT-T has been evaluated and determined to meet the requirements of 14 CFR parts 117 and 135; AC 117-1, Flightcrew Member Rest Facilities, AC 121-31, Flightcrew Sleeping Quarters and Rest Facilities; and Order 8900.1.

13.2 Forward Observer Seat. The GVI (G650/G650ER) forward observer seat as installed by T00015AT has been evaluated and determined to meet the requirements of 14 CFR §§ 125.317(b), 135.75(b), and AC 120-83, Flight Deck Observer Seat and Associated Equipment.

13.3 Aircraft Approach Category. Refer to 14 CFR part 97, § 97.3. The GVI (G650/G650ER) is considered Category C aircraft for the purposes of determining “straight-in landing weather minima.”

13.4 Normal Landing Flaps. The GVI (G650/G650ER) normal “final flap setting” per 14 CFR § 91.126(c) is Flap setting 39.

13.5 PlaneView Charts. The PlaneView charts function is FAA-certified as part of the aircraft’s type design. It is functionally equivalent to a Class 3 Electronic Flight Bag (EFB) with Type C software applications. The PlaneView enroute charts function does not contain all of the pertinent information for enroute operations (e.g., minimum enroute altitudes), so either paper charts or a Class 1 or 2 EFB that is accepted by the FAA and contains enroute charts must be readily available to the flightcrew.

13.6 Autobrakes. An automatic braking system (“autobrakes”) can be installed with an optional ASC 055 or as part of the production configuration. Pilots transitioning to a GVI (G650/G650ER) with autobrakes installed should accomplish Level E differences training. There are no checking or currency requirements for transitioning to an airplane with autobrakes installed.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	<ul style="list-style-type: none"> • Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO) 	<ul style="list-style-type: none"> • Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine). • Minor or no procedural changes required. • No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount). • Once called to attention of crew, the difference is self-evident.
B	Aided Instruction	<ul style="list-style-type: none"> • Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU) 	<ul style="list-style-type: none"> • Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	<ul style="list-style-type: none"> • Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5) 	<ul style="list-style-type: none"> • Training can only be accomplished through systems training devices. • Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations. • Training devices are required to assure attainment or retention of crew skills to accomplish more complex tasks usually related to aircraft systems.
D	Maneuvers Devices	<ul style="list-style-type: none"> • Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B) 	<ul style="list-style-type: none"> • Training can only be accomplished in flight maneuver devices in a real-time environment. • Training requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	Level C/D FFS or Aircraft	<ul style="list-style-type: none"> • Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT) 	<ul style="list-style-type: none"> • Motion, visual, control-loading, audio, and specific environmental conditions are required. • Significant full-task differences that require a high fidelity environment. • Usually correlates with significant differences in handling qualities.

Checking Differences Legend

Differences Level	Checking Method Examples	Conditions
A	None	None
B	<ul style="list-style-type: none"> • Oral or written exam • Tutorial computer-based instruction (TCBI) self-test 	Individual systems or related groups of systems.
C	<ul style="list-style-type: none"> • Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5) 	<ul style="list-style-type: none"> • Checking can only be accomplished using systems devices. • Checking objectives focus on mastering individual systems, procedures, or tasks.
D	<ul style="list-style-type: none"> • Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B) 	<ul style="list-style-type: none"> • Checking can only be accomplished in flight maneuver devices in a real-time environment. • Checking requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	<ul style="list-style-type: none"> • Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT) 	Significant full-task differences that require a high fidelity environment.

APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

These are the minimum levels of training and checking required, derived from the highest level in the Differences Tables in Appendix 3. Differences levels are arranged as training/checking.

To Related Aircraft ↓	From Base Aircraft →	GVI (G650)	GVI (G650ER)
GVI (G650)		Not applicable	A/A
GVI (G650ER)		A/A	Not applicable

APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the GVI (G650) to the GVI (650ER), was proposed by Gulfstream and validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: GVI (G650) TO RELATED AIRCRAFT: GVI (G650ER)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Weights	Maximum Ramp Weight increased from 100,000 lb to 104,000 lb.	No	No	A	A
	Weights	Maximum takeoff weight (MTOW) increased from 99,600 lb to 103,600 lb.	No	No	A	A
	Limitations	Maximum Ramp Weight increased from 100,000 lb to 104,000 lb.	No	No	A	A
	Limitations	MTOW increased from 99,600 lb to 103,600 lb.	No	No	A	A
	Limitations	Fuel quantity increased from 44,200 lb to 48,200 lb.	No	No	A	A

This Design Differences Table, from the GVI (G650ER) to the GVI 650), was proposed by Gulfstream and validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: GVI (G650ER) TO RELATED AIRCRAFT: GVI (G650)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Weights	Maximum Ramp Weight decreased from 104,000 lb to 100,000 lb.	No	No	A	A
	Weights	MTOW decreased from 103,600 lb to 99,000 lb.	No	No	A	A
	Limitations	Fuel quantity decreased from 48,200 lb to 44,200 lb.	No	No	A	A
	Limitations	MTOW decreased from 103,600 lb to 99,000 lb.	No	No	A	A

APPENDIX 4. HEAD-UP DISPLAY (HUD) SYSTEMS

Flightcrew member training must be accomplished using a Level C FFS with a daylight visual display or a Level D FFS. The FSB has determined that each PIC of an aircraft equipped with a HUD system should receive a minimum of 3 hours of ground school training followed by a minimum of 4 hours of FFS training in the left seat of a Level C FFS with a daylight visual display or a Level D FFS. A HUD-equipped aircraft may also be used for in-flight training. In-flight training should consist of a minimum of 4 hours of flying in the left seat utilizing the HUD.

The 3 hours of ground school training listed above is intended for pilots receiving stand-alone training on the HUD system. A pilot who is progressing successfully through an initial training program that has HUD training (including all three elements listed below) integrated into the curriculum, is recommended by an instructor, and successfully completes the appropriate HUD proficiency check by a person authorized by the Administrator does not need to complete the 3 standalone hours of ground school training.

The 4 hours of FFS or aircraft in-flight training listed above is intended for pilots receiving standalone training on the HUD system. A pilot who is progressing successfully through an initial training program that has HUD training (including all nine elements listed below) integrated into the curriculum, is recommended by an instructor, and successfully completes the appropriate HUD proficiency check by a person authorized by the Administrator need not complete the 4 standalone hours of FFS or aircraft in-flight training.

The FSB recommends special training emphasis in the following areas:

Ground Training:

- 1) Crew coordination.
- 2) Crew briefings and callouts.
- 3) Duties of pilot flying (PF) and pilot monitoring (PM).

Flight Training:

- 1) Use of caged, uncaged, and clear modes (especially in crosswind conditions).
- 2) Use of the pitch limit indicator (PLI) during wind shear escape.
- 3) Approaches to “black hole” airports using the Flight Path Angle (FPA).
- 4) Use of the acceleration cue as a potential FPA.
- 5) Relationship of the glidepath angle to the symbolic runway.
- 6) Approaches into the top of an undercast during daylight and night conditions.
- 7) Recovery from unusual attitudes.
- 8) TCAS Resolution Advisory (RA).
- 9) Takeoff using the FPA to meet a required climb gradient.

Checking requires a proficiency check conducted in a Level C FFS with a daylight visual display, in a Level D FFS, or on a HUD-equipped aircraft. The proficiency check will include at least one takeoff and departure procedure and one instrument approach and landing utilizing the HUD. Testing and checking will also include a minimum of one takeoff or missed approach and one instrument approach and landing without utilizing the HUD. This is to ensure proficiency without the use of the HUD.

APPENDIX 5. ENHANCED FLIGHT VISION SYSTEM (EFVS) OPERATIONS

Refer to 14 CFR part 61, § 61.66 and the current edition of AC 90-106, Enhanced Flight Vision Systems, for training, recent flight experience, and proficiency requirements for EFVS operations. Refer to the current edition of AC 90-106 and 14 CFR part 91, § 91.1065(g) or part 135, § 135.293(i) as applicable for EFVS task requirements during part 91 subpart K (part 91K) or part 135 competency checks. The FSB has determined the EFVS is operationally suitable for use during EFVS operations under § 91.176(a) or (b). An operational suitability determination does not constitute an operational authorization.

APPENDIX 6. PLANEVIEW II AVIONICS SOFTWARE VERSION “BLOCK POINT I” (ASC 901)

The PlaneView II Avionics Software Version “Block Point I” upgrade will be installed in all Gulfstream GVI (G650) airplanes S/Ns 6001 through 6093 via ASC 901 and as standard equipment in S/N 6094 and subsequent, and includes the following functions (in alphabetical order):

- a) Alternate flight plan performance predictions.
- b) Automatic Dependent Surveillance-Broadcast (ADS-B), transmit only (ADS-B Out).¹
- c) Automatic navigation preview of instrument landing system (ILS) approaches.
- d) Circling approaches in navigation approach database.
- e) Control of waypoint crossing time during cruise phase of flight.
- f) EGPWS Mode 5 (“glideslope”) alerting for LPV approaches.
- g) Engine-out driftdown distance and altitude depiction.
- h) Flight plan route depiction on Vertical Situation Display (VSD) (including terrain and vertical weather radar depiction with respect to the flight plan route).
- i) FMS automated speeds for all flight phases and airplane configurations.
- j) FMS crossing points: Equal Time Point (ETP), Point of No Return (PNR).
- k) FMS redundancy management modification.
- l) Future Air Navigation System (FANS) 2 – protected mode Controller-Pilot Data Link Communications (CPDLC).²
- m) Graphical make FROM waypoint.
- n) Increased flight plan waypoint capacity: 200 waypoints.
- o) Main entry door emergency switch access door on DOORS synoptic.
- p) Required Navigation Performance (RNP)³ for each leg segment of instrument approach retrieved from navigation database.
- q) Planned and optimal step climbs.
- r) Polar operations (above 89° latitude).
- s) Range and time to reserve fuel quantity remaining.
- t) Area Navigation (RNAV) RNP 0.1 navigation capability.⁴
- u) Secondary flight plan.
- v) Subsequent flight plan leg course depiction on horizontal situation indicator (HSI) during waypoint transition (“ghost pointer”).
- w) Temperature compensation for FMS flight plan altitudes.
- x) Undo direct-to flight plan waypoint.

¹ Installation is in accordance with the criteria for ADS-B Out operations outside of U.S.-designated airspace (e.g., Australian Government Civil Aviation Safety Authority (CASA) AC 21-45, Airworthiness Approval of Airborne Automatic Dependent Surveillance Broadcast Equipment) and is not sufficient for compliance with 14 CFR §§ 91.225 and 91.227.

² FANS 2/Aeronautical Telecommunications Network (ATN) B1 functionality will be an optional installation for aircraft S/N 6001 through 6093 via ASC 039.

³ RNAV Required Navigation Performance Authorization Required (RNP AR) approach capability authorization will be acquired separately.

⁴ FANS 2/ATN B1 functionality will be an optional installation for aircraft S/N 6001 through 6093 via ASC 039.

- y) “Vectors to Final” approach course intercept.
- z) Vertical direct-to waypoint altitude.

Pilots transitioning from the basic PlaneView II Avionics Software Version to the “Block Point I” upgrade installed with ASC 901 in the Gulfstream GVI (G650) should be trained on the differences using any one of the following Level C differences training media: ICBT, cockpit systems simulators, CPTs, or PTTs. There are no checking or currency requirements for the PlaneView II Avionics Software Version upgrade installed with ASC 901.

APPENDIX 7. PLANEVIEW II AVIONICS SOFTWARE VERSION “BLOCK POINT II” (ASC 902)

The PlaneView II Avionics Software Version “Block Point II” upgrade will be installed in all Gulfstream GVI (G650/G650ER) airplanes S/Ns 6001 through 6249 via ASC 902 and as standard equipment in S/N 6250 and subsequent, and includes the following operationally significant changes:

- a) Advisory CAS message text changed from “Rudder Steering Off” to “Pedal Steering Off.”
- b) AP disengage indication on primary flight display (PFD) changed to red for commanded disengagement.
- c) Caution CAS message “Landing Gear Maint Req’d” logic changed to include tire overspeed.
- d) Caution CAS message text changed from “Rudder Steering Fail” to “Pedal Steering Fail.”
- e) Corrections to FMS TOLD.
- f) Datalink weather coverage expanded to worldwide.
- g) Distance measuring equipment (DME) hold available with FMS as navigation source.
- h) Flight controls 2/3 synoptic retains last selected format.
- i) Flight director (FD) “FLCH” vertical mode reverts to “PIT” when AP disengaged.
- j) FMS TOLD landing performance using autobrakes.
- k) Forward and Aft emergency batteries voltages displayed on DC power synoptic.
- l) Hydraulic auxiliary pump auto-activation with brake application (when Secondary Power Distribution System (SPDS) Build 10 (ASC 051) is also installed).
- m) Integrated Navigation Map (I-NAV) VSD reverts to track mode when AP disengaged and FMS lateral navigation (LNAV) active.
- n) Incremental terminal charts database loading.

Pilots transitioning to the PlaneView II Avionics Software “Block Point II” upgrade installed with ASC 902 in the Gulfstream GVI (G650/G650ER) should be trained on the differences using Level A training, which can be accomplished through self-instruction by reviewing the changes incorporated in G650 AFM Revision 12 or G650ER AFM Revision 3, and the Gulfstream Operating Manual Supplement, G650-OMS-08, describing the operationally significant changes. There are no checking or currency requirements for the PlaneView II Avionics Software Version “Block Point II.”

APPENDIX 8. STEEP APPROACH LANDING OPERATIONS (ASC 101)

1. BACKGROUND

In October 2018, an FSB was convened to determine operational suitability and evaluate training, checking, and currency requirements for conducting steep approach landing operations in the GVI (G650/G650ER) aircraft.

The steep approach landing capability for approaches having a glidepath equal to or greater than 4.5° and up to and including 6.0° will be available as an optional installation for all Gulfstream GVI (G650/G650ER) airplanes S/Ns 6001 and subsequent via ASC 101. An Aircraft Flight Manual Supplement (AFMS) (G650 2017 01 or G650ER 2017 10, as appropriate) will accompany the ASC 101 installation.

The FSB evaluation included numerous steep approach operations in the actual aircraft using a specially modified RNAV (Global Positioning Satellite (GPS)) instrument approach procedure (IAP) to LPV minima. All-engines-operating (AEO) and OEI steep approach operations were flown, terminating in a landing, execution of a missed approach, and/or balked landing procedure. Although steep approach operations in the GVI (G650/G650ER) aircraft must be conducted with AEO, the FSB evaluated piloting skills required to perform an OEI go-around in the event an engine fails prior to the decision to land, and an OEI landing if an engine fails after the decision to land.

2. PILOT TYPE RATING

Not applicable.

3. RELATED AIRCRAFT

Not applicable.

4. PILOT TRAINING

4.1 Experience/Prerequisite. The PF must be qualified and current on the GVI (G650/G650ER) aircraft. The PM must be:

- a) A qualified and current GVI (G650/G650ER) aircraft pilot; or
- b) An SIC who has been properly qualified in the GVI (G650/G650ER) under 14 CFR § 61.55, part 91K, or part 135.

NOTE 1: Steep approach operations training may be delivered as an integral part of the initial or recurrent GVI (G650/G650ER) aircraft training curriculum. However, steep approach operations training certificate of completion must be issued only upon successful completion of the initial or recurrent training.

NOTE 2: Steep approach operations training is generally conducted as a crew. However, a pilot training alone may attend the course with another pilot acting as PM current and qualified in steep approach procedures.

4.2 Special Emphasis Areas. Ground and flight training:

- a) Steep approach landing speeds and performance calculations.
- b) AP coupled go-around in gusting wind conditions and/or turbulence may result in the AP disconnecting.

4.3 Ground Training. Ground training must consist of training in the following areas and is appropriate to both pilot positions:

- a) AFMS review to include steep approach mode operating description, limitations, normal and abnormal procedures, and landing performance.
- b) Takeoff operations at London City Airport (EGLC), as described in the Gulfstream Noise Information Manual (NIM).
- c) Stages of the steep approach to include stabilized approach concept (e.g., early configuration including proper airspeed, flap settings, and landing gear), glidepath capture, and flare altitude.
- d) Comparison of the steep approach sight picture to that of 3° (normal) approach.
- e) Pilot techniques to include early configuration, avoidance of abrupt control inputs, and discussion of the following illusions: runway dimension on height perception and ground rush illusion.

4.4 Flight Training.

4.4.1 Flight training must be conducted in an FFS Level D or the aircraft.

NOTE 1: If steep approach flight training is desired, it is possible to program the GVI (G650/G650ER) FMS to fly a steep approach to any runway in the navigation database for which a visual approach is available. Unless the airport has a designated steep approach in the FMS database, EGPWS alerts (e.g., “SINK RATE,” “PULL-UP”) may be heard in the final phase of the approach and landing. Steep approach flight training conducted in this manner should only be conducted in visual meteorological conditions (VMC). Before each approach, the flight instructor should brief the pilot on the EGPWS alerts that will be activated during the final phase of the approach and landing. The flight instructor should emphasize that, for the purpose of flight training only, the pilot should not react to these alerts.

NOTE 2: In that some airports with steep approaches require steep approach experience prior to conducting a steep approach at that airport, practicing approaches may be accomplished by the method described in NOTE 1 above.

4.4.2 Flight training must contain the following tasks as PF while executing a 5.5° or 6.0° glidepath:

- a) One approach to landing and full stop using normal procedures.
- b) One approach to go-around using normal procedures.
- c) One approach with an engine failure during approach to a single-engine go-around using abnormal procedures.
- d) One approach with an engine failure below 200 ft to a landing.
- e) One approach in nighttime conditions to a full stop using normal procedures.

5. PILOT CHECKING

There is no checking requirement for GVI (G650/G650ER) steep approach operation qualification. Documented satisfactory completion of steep approach operation training is sufficient.

6. PILOT CURRENCY

If no steep approach operations have been conducted in the previous 6 calendar-months, the pilot will conduct a self-review of the steep approach applicable information in the AFMS and any other operator-identified material.

As a minimum, regardless of the number of steep approaches completed, a review of all ground training items must be accomplished annually and documented in a manner acceptable to the Administrator.

7. OPERATIONAL SUITABILITY

7.1 The FSB has determined that the conduct of steep approaches requires no higher piloting skill level than that of normal (3°) approaches. Although the sight picture at flare is definitely steeper, a pilot is able to easily adapt to the slight increase in flare rate as the aircraft approaches the ground and provides flare guidance. The FSB determined that the use of the HUD is advantageous in executing steep approaches, but not mandatory.

7.2 Any PIC/SIC who has been properly qualified in the GVI (G650/G650ER) aircraft under 14 CFR parts 61, 91K, or 135 may conduct steep approach operations provided the requirements of this appendix have been satisfactorily accomplished.

NOTE 1: An operational suitability determination does not constitute an operational authorization.

NOTE 2: Be advised, it is common that individual airport authorities have training and documentation requirements specific to their airfields with regards to steep approach requirement.

APPENDIX 9. CAT II INSTRUMENT LANDING SYSTEM APPROACH OPERATIONS (ASC 109)

1. BACKGROUND

In October 2019, the FSB conducted flight evaluations of CAT II operations in a GVI Level D FFS and GVI aircraft. The CAT II operations were conducted to CAT II minimums.

2. PILOT TYPE RATING

Not applicable.

3. RELATED AIRCRAFT

- GVI (G650).
- GVI (G650ER).

4. PILOT TRAINING

Refer to 14 CFR § 61.67 for CAT II pilot authorization requirements, and refer to the current edition of AC 120-118, Criteria for Approval/Authorization of All Weather Operations (AWO) for Takeoff, Landing, and Rollout.

4.1 Training Differences Level D. The PIC must be qualified and current in the GVI (G650/G650ER) aircraft. The SIC must be qualified and current in the GVI (G650/G650ER) aircraft.

4.2 Special Emphasis Areas. In conducting low visibility CAT II approaches and operations, specified duties and procedures are assigned to both the PF and PM. Therefore, the requirement for initial and recurrent training as defined below is applicable to both PIC and SIC.

4.2.1 Ground Training. The initial, transition, upgrade, and recurrent ground training should include a thorough understanding of low visibility CAT II operations.

4.2.1.1 Pilots must receive special emphasis on the following areas during ground training:

- a) Decision height (DH), decision altitude (DA).
- b) Minimum equipment list (MEL) requirements for CAT II.
- c) Runway field length requirements.
- d) Surface Movement Guidance and Control Systems (SMGCS).
- e) Visual reference requirements.
- f) AFMS, CAT II Instrument Landing Systems (ILS) Approach Operations (ASC 109).

4.2.2 Flight Training. The initial, transition, upgrade, and recurrent flight training should include a thorough understanding of low visibility CAT II operations. Training may be conducted in a Level C or D FFS.

4.2.2.1 Pilots must receive special emphasis on and perform in the following areas during flight training:

- a) DH and DA recognition and response.
- b) SMGCS visual reference requirements and indications.

5. PILOT CHECKING

Checking Differences Level C.

6. PILOT CURRENCY

There are no additional currency requirements for the GVI (G650) or GVI (G650ER) other than those already specified in 14 CFR parts 61, 121, or 125.

7. OPERATIONAL SUITABILITY

CAT II operations were found to be operationally suitable when ASC 109 is installed and all required equipment is operational in G650 and G650ER aircraft.

APPENDIX 10. PLANEVIEW II AVIONICS SOFTWARE VERSION “BLOCK 3” (ASC 903)

1. BACKGROUND

In March 2021, an FSB was convened to determine operational suitability and evaluate training, checking, and currency requirements for the installation of PlaneView II Avionics Software Version “Block 3” (ASC 903) and associated optional ASCs in the GVI (G650/G650ER) aircraft. The PlaneView II avionics software version “Block 3 Baseline” upgrade will be installed in all Gulfstream GVI (G650/G650ER) airplanes S/N 6001 through subsequent via ASC 903 and as standard equipment in S/N 6001 and subsequent. In addition to the Block 3 Baseline, the following menu of ASCs allows for additional optional capabilities to be added:

- ASC 005B/C, RAAS.
- ASC 008B, XM Weather.
- ASC 120, Predictive Weather Hazards.
- ASC 121, Situational Awareness.
- ASC 125, HUD II Software Update.
- ASC 127, ROAAS.
- ASC 128, AP TCAS.

A complete and detailed description of the respective ASCs may be found in the GVI (G650/650ER) Aircraft Operating Manual (AOM) and the Gulfstream GVI (G650/G650ER) Block 3 Flightcrew Training Bulletin.

2. PILOT TYPE RATING

Not applicable.

3. RELATED AIRCRAFT

Not applicable.

4. PILOT TRAINING

4.1 Experience/Prerequisite. The PF must be qualified and current on the GVI (G650/G650ER) aircraft. The PM must be:

- a) A qualified and current GVI (G650/G650ER) aircraft pilot; or
- b) An SIC who has been properly qualified in the GVI (G650/G650ER) under 14 CFR part 61, § 61.55, part 91K, or part 135.

4.2 Special Emphasis Areas. Not applicable.

4.3 Ground Training. Pilots transitioning to the PlaneView II avionics software “Block 3 Basic” (ASC 903) upgrade installed and any combination of the following ASCs in the Gulfstream GVI (G650/G650ER) should be trained on the differences using Level B training.

- ASC 005B/C, RAAS.
- ASC 008B, XM Weather.
- ASC 120, Predictive Weather Hazards.
- ASC 121, Situational Awareness.
- ASC 125, HUD II Software Update.
- ASC 127, ROAAS.
- ASC 128, AP TCAS.-

4.4 Flight Training. Not applicable.

5. PILOT CHECKING

Not applicable.

6. PILOT CURRENCY

Not applicable.

7. OPERATIONAL SUITABILITY

The FSB has determined that ASC 903 “Block 3” and any combination of the associated optional ASCs are suitable for operation in the GVI (G650/G650ER) aircraft.

NOTE: An operational suitability determination does not constitute an operational authorization.