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Washington, DC

Flight Standardization Board Report

Revision: 6
Date: XX/XX/XXXX

Manufacturer
Textron Aviation, Inc.

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A22CE	560XL	Excel, XLS, XLS+, Ascend	CE-560XL

Approved by the Aircraft Evaluation Division
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TABLE OF CONTENTS

1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	Not Available
1	All	01/21/1999
2	All	09/30/2009
3	All	06/19/2015
4	All	03/12/2020
5	All	09/30/2025
6	Cover Page, 1, 3, 5, 7, Appendices 8 and 9	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

The purpose of this revision is to add Appendix 9, Ascend Model Serial No. 560-6501 and On, Required Navigation Performance Authorization Required (RNP AR) Operations, for the Required Navigation Performance Authorization Required Approach (RNP AR APCH) capability. Textron Aviation Model 560XL Ascend with the Garmin G5000 was demonstrated during the Flight Standardization Board (FSB) to operational suitability.

4. BACKGROUND

The General Aviation Branch (AFS-130), AED formed an FSB that evaluated the 560XL Series aircraft as defined in FAA Type Certificate Data Sheet (TCDS) No. A22CE. The original evaluation was conducted using the methods described in FAA Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

In January 2025, the FSB conducted flight and ground evaluations of the Garmin G5000 Integrated Flight Deck in a Textron Model 560XL airplane. The avionics upgrade removes the Honeywell Primus 1000 flight deck instrument equipment and replaces the primary flight

displays (PFD), multifunction displays (MFD), and flight management system (FMS) with the Garmin G5000 Integrated Flight Deck. It, as well as the associated Airplane Flight Manual Supplement (AFMS) change, was found to be operationally suitable. Training and checking requirements are listed in Appendix 3, Differences Tables.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACARS Aircraft Communications Addressing and Reporting System
- ACFT Aircraft
- ACS Airman Certification Standards
- ADF Automatic Direction Finder
- ADS-B Automatic Dependent Surveillance-Broadcast
- AED Aircraft Evaluation Division
- AFCS Automatic Flight Control System
- AFD Adaptive Flight Display
- AFM Airplane Flight Manual
- AFMS Airplane Flight Manual Supplement
- AOA Angle of Attack (indicator)
- AMLCD Active Matrix Liquid Crystal Display
- APU Auxiliary Power Unit
- AR Authorization Required
- AT Autothrottle
- AV Audiovisual Presentation
- CAS Crew Alert System
- CCP Cursor Control Panel
- CDU Control Display Unit
- CPDLC Controller-Pilot Data Link Communications
- CPT Cockpit Procedures Trainer
- COM Communications
- DME Distance Measurement Equipment
- ECL Electronic Checklist
- EDM Emergency Descent Mode
- EEC Electronic Engine Control
- EFB Electronic Flight Bag
- EIS Engine Indicating System
- ESIS Electronic Standby Instrument System
- FAA Federal Aviation Administration
- FADEC Full-Authority Digital Engine Control
- FFS Full Flight Simulator
- FMS Flight Management System
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report

- FSTD Flight Simulation Training Device
- FSU File Server Unit
- FTD Flight Training Device
- GDR Garmin Digital Receiver
- GDU Garmin Display Unit
- GMA Garmin Remote Audio Panel
- GMC Garmin Mode Controller
- GTC Garmin Touchscreen Controller
- HO Handout
- HSI Horizontal Situation Indicator
- ICBI Interactive Computer-Based Instruction
- IFIS Integrated Flight Information System
- IFR Instrument Flight Rules
- LBS Pounds
- LCD Liquid Crystal Display
- LH Left Hand
- MDR Master Differences Requirements
- METAR Meteorological Terminal Aerodrome Report
- MFD Multifunction Display
- N_1 Engine Low Pressure Rotational Speed
- NAS National Airspace System
- NAV Navigation
- NEXRAD Next Generation Weather Radar
- Part 91K Part 91 Subpart K
- ODR Operator Differences Requirements
- PF Pilot Flying
- PFD Primary Flight Display
- PIC Pilot in Command
- PM Pilot Monitoring
- PTT Part Task Trainer
- RH Right Hand
- ROA Runway Occupancy Awareness
- RMU Radio Management Unit
- RNP Required Navigation Performance
- RNP AR Required Navigation Performance Authorization Required
- RNP AR APCH Required Navigation Performance Authorization Required Approach
- RPM Rotations Per Minute
- SATCOM Satellite Communications
- SIC Second in Command
- STC Supplemental Type Certificate
- SU Stand-Up Instruction
- SVGS Synthetic Vision Guidance System
- SVS Synthetic Vision System
- SVT Synthetic Vision Technology

- TAF Terminal Aerodrome Forecast
- TC Type Certificate
- TCAS Traffic Alert and Collision Avoidance System
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- USP Underspeed Protection
- V1 Takeoff Decision Speed
- VFR Visual Flight Rules
- WX Weather Radar

6. DEFINITIONS

These definitions are for the purposes 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. 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 the 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 Characteristics. 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 Textron Aviation 560XL type rating designation is CE-560XL. The CE-560XL Ascend was evaluated with addition of autothrottles and Garmin G5000 Integrated Flight Deck and has the same CE-560XL type rating.

7.2 Common Type Ratings. Not applicable.

7.3 Military Equivalent Designations. Military aircraft that qualify for the CE-560XL type rating can be found at www.faa.gov under "Pilots and Airmen," "Airmen Certification," "Quick Links," "Pilot Certificate Aircraft Type Designations." This webpage is kept up-to-date and can be found at: https://registry.faa.gov/typeratings/.

8. RELATED AIRCRAFT

8.1 Related Aircraft on Same TCDS.

- Excel Serial 560-5001 thru 560-5500.
- XLS Serial 560-5501 thru 560-6000.
- XLS+ Serial 560-6001 thru 560-6500.
- Ascend Serial 560-6501 and on.

NOTE: The 560XL Series is used throughout this report and includes aircraft variations Excel, XLS, XLS+, and Ascend.

8.2 Related Aircraft on Different TCDS. Not applicable.

9. PILOT TRAINING

9.1 Airman Experience. Airmen receiving initial 560XL training should have previous training in high-altitude operations in multiengine turbojet aircraft, new generation avionics, and FMS experience. Pilots without this experience may require additional training.

NOTE: Airmen receiving differences, upgrade, or transition training are assumed to have previous experience in a variation of the 560XL Series.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during initial, recurrent, requalification, upgrade, and transition ground training (when installed):

- Autothrottles (AT) (includes, normal functions, circling approach, coupled go-around and AT emergency procedures).
- The use of G5000 avionics suite capabilities.
- Stall prevention to first indication of stall with and without autothrottle for aircraft serial numbers 560-6501 and on.
- Engine failure, after V1 and/or missed approach with and without autothrottles for aircraft serial numbers 560-6501 and on.
- Emergency Descent Mode (EDM).
- Underspeed Protection (USP), Overspeed Protection.
- Synthetic Vision System (SVS).

9.2.2 Pilots must receive special emphasis on, and perform the following areas during initial, recurrent, requalification, upgrade, and transition flight training (when installed):

- AT (includes, normal functions, circling approach, coupled go-around and AT emergency procedures) for aircraft serial numbers 560-6501 and on.
- The use of G5000 avionics suite capabilities.
- Stall prevention to first indication of stall with and without autothrottles for aircraft serial numbers 560-6501 and on.
- Engine failure, after takeoff and/or missed approach with and without autothrottle for aircraft serial numbers 560-6501 and on.
- EDM.
- Underspeed Protection (USP), Overspeed Protection (Includes coupled go-around).
- SVS.

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

9.4 Seat-Dependent Tasks. There are no seat-dependent tasks.

9.5 Regulatory Training Requirements That Are Not Applicable to the 560XL Series. Part 135 Ground Training: Propellers.

9.6 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the 560XL Series that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the 560XL series that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Pilots must receive differences training between the 560XL Series aircraft variations as applicable to their operation. The level of training is specified in Appendix 3.

9.9 Multiple Curricula Training Programs (Reduced Planned Hour Training Programs).

In accordance with FAA Order 8900.1, Volume 3, Chapter 19, Section 1, paragraph 3-1078, Multiple Curricula of a Single Category, reduced hour curriculums may be established for the CE-560XL type rating based on the following prerequisites.

If the pilot:	Then the pilot may enter reduced hour training curriculum for:
Holds a CE-500 type rating and has completed Initial or Transition CE-550 Bravo training within the previous 24 calendar-months.[1]	CE-560XL type rating with Honeywell Avionics.[2]
Holds a CE-500 type rating and has completed Initial or Transition CE-560 Ultra training within the previous 24 calendar-months.[1]	CE-560XL type rating with Honeywell Avionics.[2]

If the pilot:	Then the pilot may enter reduced hour training curriculum for:
Holds a CE-500 type rating and has completed Recurrent CE-550 Bravo or CE-560 Ultra training within the previous 24 calendar-months.[1]	CE-560XL type rating with Honeywell Avionics.[2]

[1] Initial, transition, or recurrent training in other than the CE-550 Bravo or CE-560 Ultra does not meet the prerequisite requirement for a reduced hour curriculum for the CE-560XL type rating.
[2] Reduced hour curriculums do not apply to training curriculums for the CE-560XLS+ with Collins ProLine 21 Avionics, or for the CE-560XL Series with Garmin G5000 Avionics.

In accordance with FAA Order 8900.1, Volume 3, Chapter 19, Section 1, paragraph 3-1078, reduced hour curriculums may be established for the CE-500 type rating based on the following prerequisites.

If the pilot:	Then the pilot may enter reduced hour training curriculum for:
Holds a CE-560XL type rating and has completed Initial or Transition CE-560XL training within the previous 24 calendar- months.[3]	CE-500 type rating.
Holds a CE-560XL type rating and has completed Initial or Transition CE-560XLS training within the previous 24 calendar- months.[3]	CE-500 type rating.
Holds a CE-560XL type rating and has completed Recurrent CE-560XL or CE-560XLS training within the previous 24 calendar-months.[3]	CE-500 type rating.

[3] Initial, transition, or recurrent training in the CE-560XLS+ with Collins ProLine 21 Avionics, or in the CE-560XL Series with Garmin G5000 and the Ascend Avionics does not meet the prerequisite requirement for a reduced hour curriculum for the CE-500 type rating.

10. PILOT CHECKING

10.1 Landing from a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the 560XL Series is not extremely remote, due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification or a 14 CFR part 61, § 61.58 proficiency check, part 91, § 91.1065 competency check, or part 135, § 135.293 competency check is required. Refer to FAA Order 8900.1, Volume 5 when the test or check is conducted in an aircraft versus a full flight simulator (FFS).

10.2 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the Airline Transport Pilot and Type Rating for Airplane ACS.

NOTE: There are no specific flight characteristics.

10.3 Seat-Dependent Tasks. There are no specific seat-dependent tasks.

10.4 Other Checking Items. Not applicable.

10.5 FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the 560XL Series that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the 560XL Series that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Pilots must receive differences checking between the 560XL Series aircraft variations as applicable to their operation. The level of checking is specified in Appendix 3.

NOTE: For operators with a 560XL Series mixed fleet, recurrent checks should alternate between variations for pilot in commands (PIC) and second in commands (SIC). The knowledge portion of initial and recurrent checks should address all variations with different avionics suites operated by the flightcrew member.

11. PILOT CURRENCY

There are no additional currency requirements for the 560XL Series other than those already specified in 14 CFR parts 61, 91, and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The 560XL Series aircraft are operationally suitable for operations under 14 CFR parts 91, 91K, and 135. The list of operating rules evaluated is on file with AFS-130, AED.

13. MISCELLANEOUS

13.1 Forward Observer Seat. The 560XL Series aircraft are not equipped with a dedicated forward observer seat, nor is one offered as an option. Due to the availability of various passenger configurations, the determination of suitability for use of a forward passenger seat for use in conducting enroute inspections or flight checks in accordance with 14 CFR part 135 will need to be determined by the FAA inspector conducting the enroute inspections or flight checks.

13.2 Aircraft Approach Category. All 560XL Series aircraft are considered Category B aircraft for the purposes of determining the appropriate instrument approach procedure category in accordance with 14 CFR § 97.3.

13.3 Normal Landing Flaps. The 560XL Series normal “final flap setting” per 14 CFR § 91.126(c) is flaps 35° or Land, as applicable to the variation.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	• Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO)	• 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	• Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU)	• Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	• 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)	• 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	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• 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	• Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT)	• 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	• Oral or written exam • Tutorial computer-based instruction (TCBI) self-test	Individual systems or related groups of systems.
C	• 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)	• Checking can only be accomplished using systems devices. • Checking objectives focus on mastering individual systems, procedures, or tasks.
D	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• 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	• 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.

Related Aircraft ↓	**Base Aircraft →**	**560XL (Excel)**	**560XL (XLS)**	**560XL (XLS+)**	**560XL (Excel and XLS with G5000)**	**560XL (Ascend)**
560XL (Excel)		Not Applicable	A/A	C/C	Not Evaluated	Not Evaluated
560XL (XLS)		A/A	Not Applicable	C/C	Not Evaluated	Not Evaluated
560XL (XLS+)		C/C	C/C	Not Applicable	Not Evaluated	Not Evaluated
560XL (Excel and XLS with G5000)		C/C	C/C	Not Evaluated	Not Applicable	Not Evaluated
560XL (Ascend)		D/D	D/D	D/D	D/D	Not Applicable

For optional equipment, training and checking is only required when installed.

APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the **560XL (Excel)** to the **560XL (Ascend)**, was validated by the FSB on January 11, 2025. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Airworthiness Limitations	See AFMS.	No	Yes	A	A
	Placards and Markings	See AFMS.	No	Yes	A	A
	Avionics	Garmin G5000 replaces Universal/ Honeywell Primus 1000. PFD/MFD displays. Four Garmin Touchscreen Controller (GTC) used for avionics functions including G5000 radio tuning, FMS navigation, flight planning, radar functions, and flight control.	No	Yes	C FTD 5	C FTD 5
	Instrument Panel Layout	Switches rearranged on new tilt panel to accommodate GTCs and reflect additional systems integration with G5000 system.	No	Yes	C	C
	Instrument Panel Layout	Altimeter setting, display format, reversion mode and dimming.	No	Yes	C	A
	Instrument Panel Layout	Annunciator panel is replaced by Crew Alert System (CAS) on the PFD.	No	Yes	C	B

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 21 Environmental Control	Primary temperature control is incorporated into the GTCs, replacing manual switches and knobs. Manual temperature control knobs have been moved to aft pedestal.	No	Yes	B	A
	ATA 21 Environmental Control	Pressurization indication is now located in EIS display on MFD. PRESS SOURCE, CABIN DUMP and PRESSURE CONTROL knobs and switches have been moved to aft pedestal.	No	Yes	B	A
	ATA 22 Autoflight	G5000 Garmin Mode Controller GMC 7200 automatic flight control system (AFCS) on glareshield. Autopilot mode annunciation moved to PFD (LH and RH).	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Four GTC-575 Replacing radio tuning units.	No	Yes	B	B
	ATA 23 Communications	Garmin Digital Receiver GDR 66 CPDLC and GSR 56 satellite communications (SATCOM) (optional).	No	Yes	C	C
	ATA 24 Electrical Power	Avionics power distribution.	No	Yes	B	A

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 24 Electrical Power	Emer bus items include PFD 1, MFD and the left GTC to allow most avionics functionality during emergency/ abnormal procedures that require using the emergency bus.	No	Yes	C	C
	ATA 24 Electrical Power	GND DISPATCH switch powers the MFD and left GTC to allow preflight planning without powering all aircraft systems.	No	Yes	A	A
	ATA 24 Electrical Power	Battery temperature and Direct Current amps/volts gauges are replaced with indications on the MFD, within the synoptic pages and EIS strip, respectively.	No	Yes	A	A
	ATA 24 Electrical Power	Circuit breaker panel changes for new avionics and other changes.	No	Yes	A	A
	ATA 27 Flight Controls	Flap handle location moved aft slightly, and position indication is now on the EIS, rather than at the handle.	No	Yes	A	A
	ATA 27 Flight Controls	Elevator trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Rudder trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Aileron trim indicator moved from pedestal to EIS display	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 28 Fuel	Fuel gauges, fuel flow, fuel temp move to MFD.	No	No	B	B
	ATA 28 Fuel	Fuel boost switches and crossfeed control moved from left instrument panel to center pedestal	No	Yes	B	A
	ATA 31 Indicating/Recording Systems	Annunciator panel replaced with CAS messages; AOA to PFD; Standby Electronic Standby Instrument System (ESIS) relocated; Slip-Skid to PFD.	No	Yes	C	B
	ATA 31 Indicating/Recording Systems	Systems test incorporated into GTCs.	No	Yes	B	A
	ATA 32 Landing Gear	Moved landing gear control from RH panel to LH tilt panel.	No	Yes	A	A
	ATA 32 Landing Gear	Landing gear position indication moved to EIS display, rather than collocated with landing gear handle.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 32 Landing Gear	Emergency gear extension uplock controls have changed operation. The pull and rotate T-handle for the unlock with a knob on the same shaft for blowdown, has been replaced with a D-ring handle for unlock, in the same location as the previous control. The blowdown control is moved to the right side of the pedestal, with the same operation.	No	Yes	C	B
	ATA 32 Landing Gear	Parking brake control moved farther outboard and is now located directly under the LH outboard GTC.	No	Yes	A	A
	ATA 33 Lights	Light controls were moved from lower LH panel and center panel and consolidated to the overhead panel.	No	Yes	B	A
	ATA 34 Navigation	FMS functions are provided on GTCs instead of dedicated FMS controller.	No	Yes	C	C
	ATA 34 Navigation	Garmin PFDs/MFD replaces Honeywell PFDs/MFD. PFD/MFD Control is provided on outboard and inboard GTCs, respectively, with backup controls in the GCU 275 in the forward panel.	No	Yes	C FTD 5	C FTD 5
	ATA 34 Navigation	Standby flight display relocated to the forward panel.	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 34 Navigation	Removed standby HSI that was located below the standby flight display.	No	Yes	A	A
	ATA 35 Oxygen	Oxygen gauge on EIS replaces mechanical gauge. Oxygen Controls now located farther down on the center pedestal behind the throttle quadrant.	No	Yes	A	A
	ATA 46 Information Systems	Added SafeTaxi, (optional SurfaceWatch).	No	Yes	C	C
	ATA 49 Auxiliary Power Unit APU	APU is standard. It was standard for XLS, but not Excel.	No	Yes	C	C
	ATA 49 Auxiliary Power Unit APU	Rather than having a separate control panel on the RH sidewall, APU indications for APU RPM and APU generator amps and volts are now displayed in the EIS. The APU GEN, GEN RESET, BLEED AIR, MAX COOL and APU START controls have been moved to the aft pedestal.	No	Yes	B	B
	ATA 49 Auxiliary Power Unit APU	APU approved for unattended operations.	No	Yes	A	A
	ATA 71 Power Plant	Increased thrust to 4218 lbs.	No	Yes	C	C
	ATA 74 Ignition	Engine ignition switches replaced with controls on the GTCs.	No	Yes	B	B

FROM BASE AIRCRAFT: 560XL (Excel) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 76 Engine Controls	Throttle quadrant replaced with a new throttle quadrant that supports autothrottles.	Yes	Yes	D	D
	ATA 76 Engine Controls	Engine start switches moved from left panel to pedestal, aft of throttle quadrant.	No	Yes	C	C
	ATA 76 Engine Controls	Engine run/stop switches have been added in place of the throttle cutoff position. These switches are located in the pedestal along with the engine start switches.	No	Yes	C	C
	ATA 76 Engine Controls	Engine sync switch is removed, as engine sync is handled automatically by FADEC.	No	Yes	C	C
	ATA 77 Engine Indicating	AMLCD or mechanical tape gauges replaced with Garmin Engine Indicating System (EIS) displays.	No	Yes	B	A
	ATA 78 Engine Exhaust	Thrust reverser indications moved from fire tray to a text readout next to the N_1 display on the EIS. EIS Indications are also used to indicate ARMED, UNLOCK and DEPLOY status.	No	Yes	B	B
	ATA 78 Engine Exhaust	New throttle quadrant will use finger lift levers for thrust reversers stow/deploy, rather than the piggyback levers previously used.	No	Yes	D	D

This Maneuver Differences Table, from the **560XL (Excel)** to the **560XL Ascend** was validated by the FSB on January 11, 2025. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 560XL (Excel) **TO RELATED AIRCRAFT: 560XL (Ascend)**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Instrument Procedures	PFD/MFD display control, FMS Nav control, Autopilot mode selection, and SVS display control. USP and coupled go-around.	No	Yes	C FTD 5	C FTD 5
	Landing	Landing speeds calculated manually and entered via touchscreen controller (GTC).	No	No	A	A
	Normal Procedures	See AFMS for new or changed Normal Procedures.	No	Yes	C	C
	Abnormal Procedures	See AFMS for new or changed Abnormal Procedures.	No	Yes	C	C
	Emergency Procedures	See AFMS for new or changed Emergency Procedures. EDM is a new function on the Excel.	No	Yes	C FTD 5	C FTD 5

This Design Differences Table, from the **560XL (XLS)** to the **560XL (Ascend)**, was 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: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Airworthiness Limitations	See AFMS.	No	Yes	A	A
	Placards and Markings	See AFMS.	No	Yes	A	A
	Avionics	Garmin G5000 replaces Universal/ Honeywell Primus 1000. PFD/MFD displays. Four Garmin Touchscreen Controller (GTC) used for avionics functions including G5000 radio tuning, FMS navigation, flight planning, radar functions, and flight control.	No	Yes	C FTD 5	C FTD 5
	Instrument Panel Layout	Switches rearranged on new tilt panel to accommodate GTCs and reflect additional systems integration with G5000 system.	No	Yes	C	C
	Instrument Panel Layout	Altimeter setting, display format, reversion mode and dimming.	No	Yes	C	A
	Instrument Panel Layout	Annunciator panel is replaced by Crew Alert System (CAS) message system on the PFD.	No	Yes	C	B
	ATA 21 Environmental Control	Primary temperature control is incorporated into the GTCs, replacing manual switches and knobs. Manual temperature control knobs have been moved to aft pedestal.	No	Yes	B	A

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 21 Environmental Control	Pressurization indication is now located in EIS display on MFD. PRESS SOURCE, CABIN DUMP, and PRESSURE CONTROL knobs and switches have been moved to aft pedestal.	No	Yes	B	A
	ATA 22 Auto flight	G5000 Garmin Mode Controller GMC 7200 automatic flight control system (AFCS) on glareshield. Autopilot mode annunciation moved to a central location in the firetray.	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Four GTC 575 Replacing radio tuning units.	No	Yes	B	B
	ATA 23 Communications	Garmin Digital Receiver GDR 66 CPDLC and GSR 56 satellite communications (SATCOM) (optional).	No	Yes	C	C
	ATA 24 Electrical Power	Avionics power distribution.	No	Yes	B	A
	ATA 24 Electrical Power	Emer bus items include PFD 1, MFD and the left GTC to allow most avionics functionality during emergency/ abnormal procedures that require using the emergency bus.	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 24 Electrical Power	GND DISPATCH switch powers the MFD and left GTC to allow preflight planning without powering all aircraft systems.	No	Yes	A	A
	ATA 24 Electrical Power	Battery temperature and Direct Current amps/volts gages are replaced with indications on the MFD, within the synoptic pages and EIS strip, respectively.	No	Yes	A	A
	ATA 24 Electrical Power	Circuit breaker panel changes for new avionics and other changes.	No	Yes	A	A
	ATA 27 Flight Controls	Flap handle location moved aft slightly, and position indication is now on the EIS, rather than at the handle.	No	Yes	A	A
	ATA 27 Flight Controls	Elevator trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Rudder trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Aileron trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 28 Fuel	Fuel boost switches and crossfeed control moved from left instrument panel to center pedestal.	No	Yes	B	A
	ATA 28 Fuel	Fuel gauges, fuel flow, fuel temp move to MFD.	No	Yes	B	B

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 31 Indicating/Recording Systems	Annunciator panel replaced with CAS messages; AOA to PFD; Standby Electronic Standby Instrument System (ESIS) relocated; Slip-Skid to PFD.	No	Yes	C	B
	ATA 31 Indicating/Recording Systems	Systems test incorporated into GTCs.	No	Yes	B	A
	ATA 32 Landing Gear	Moved landing gear control from RH panel to LH tilt panel.	No	Yes	A	A
	ATA 32 Landing Gear	Landing gear position indication moved to EIS display, rather than collocated with landing gear handle.	No	Yes	A	A
	ATA 32 Landing Gear	Emergency gear extension uplock controls have changed operation. The pull and rotate T-handle for the unlock with a knob on the same shaft for blowdown, has been replaced with a D-ring handle for unlock, in the same location as the previous control. The blowdown control is moved to the right side of the pedestal, with the same operation.	No	Yes	C	B
	ATA 32 Landing Gear	Parking brake control moved farther outboard and is now located directly under the LH outboard GTC.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 33 Lights	Light controls were moved from the lower LH panel and center panel and consolidated to the eyebrow panel.	No	Yes	B	A
	ATA 34 Navigation	FMS functions are provided on GTCs instead of dedicated FMS controller.	No	Yes	C	C
	ATA 34 Navigation	Garmin PFDs/MFD replaces Honeywell PFDs/MFD. PFD/MFD Control is provided on outboard and inboard GTCs, respectively, with backup controls in the GCU 275 in the fire tray.	No	Yes	C FTD 5	C FTD 5
	ATA 34 Navigation	Standby flight display relocated to the fire tray.	No	Yes	C	C
	ATA 34 Navigation	Removed standby HSI that was located below the standby flight display.	No	Yes	A	A
	ATA 35 Oxygen	Oxygen gauge on EIS replaces mechanical gauge. Oxygen Controls now located farther down on the center pedestal behind the throttle quadrant.	No	Yes	A	A
	ATA 46 Information Systems	Added SafeTaxi, (optional SurfaceWatch).	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 49 Auxiliary Power Unit APU	Rather than having a separate control panel on the RH sidewall, APU indications for APU RPM and APU generator amps and volts are now displayed in the EIS. The APU GEN, GEN RESET, BLEED AIR, MAX COOL and APU START controls have been moved to the aft pedestal.	No	Yes	B	B
	ATA 49 Auxiliary Power Unit APU	APU approved for unattended operations.	No	Yes	A	A
	ATA 71 Power Plant	Increased thrust to 4218 lbs.	No	Yes	C	C
	ATA 74 Ignition	Engine ignition switches replaced with controls on the GTCs.	No	Yes	B	B
	ATA 76 Engine Controls	Throttle quadrant replaced with a new throttle quadrant that supports autothrottles.	Yes	Yes	D	D
	ATA 76 Engine Controls	Engine start switches moved from left panel to pedestal, aft of throttle quadrant.	No	Yes	C	C
	ATA 76 Engine Controls	Engine run/stop switches have been added in place of the throttle cutoff position. These switches are located in the pedestal along with the engine start switches.	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 76 Engine Controls	Engine sync switch is removed, as engine sync is handled automatically by FADEC.	No	Yes	C	C
	ATA 77 Engine Indicating	Garmin EIS display replaces previous standalone engine indicating displays.	No	Yes	B	A
	ATA 78 Engine Exhaust	Thrust reverser indications moved from fire tray to a text readout next to the N_1 display on the EIS. EIS Indications are also used to indicate ARMED, UNLOCK and DEPLOY status.	No	Yes	B	B
	ATA 78 Engine Exhaust	New throttle quadrant will use finger lift levers for thrust reversers stow/deploy, rather than the piggyback levers previously used.	No	Yes	D	D

This Design Differences Table, from the **560XL (XLS+)** to the **560XL (Ascend)** was 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: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Airworthiness Limitations	See AFMS.	No	Yes	A	A
	Placards and Markings	See AFMS.	No	Yes	A	A
	Avionics	Garmin G5000 replaces Collins Proline 21. PFD/MFD displays. Four Garmin Touchscreen Controller (GTC) used for avionics functions including G5000 radio tuning, FMS navigation, flight planning, radar functions, and flight control.	No	Yes	C FTD 5	C FTD 5
	Instrument Panel Layout	Switches rearranged on new tilt panel to accommodate GTCs and reflect additional systems integration with G5000 system.	No	Yes	C	C
	Instrument Panel Layout	Altimeter setting, display format, reversion mode and dimming.	No	Yes	C	A
	ATA 21 Environmental Control	Primary temperature control is incorporated into the GTCs, replacing manual switches and knobs. Manual temperature control knobs have been moved to aft pedestal.	No	Yes	B	A

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 21 Environmental Control	Pressurization indication is now located in EIS display on MFD. PRESS SOURCE, CABIN DUMP, and PRESSURE CONTROL knobs and switches have been moved to aft pedestal.	No	Yes	B	A
	ATA 22 Auto flight	G5000 Garmin Mode Controller GMC 7200 automatic flight control system (AFCS) on glareshield. Autopilot mode annunciation moved to PFD (LH and RH).	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Radio tuning through four GTC 575 replacing radio tuning units.	No	Yes	C	B
	ATA 23 Communications	Garmin Digital Receiver GDR 66 CPDLC and GSR-56 satellite communications (SATCOM) (optional).	No	Yes	C	C
	ATA 24 Electrical Power	Avionics power distribution.	No	Yes	B	A
	ATA 24 Electrical Power	Emer bus items include PFD 1, MFD and the left GTC to allow most avionics functionality during emergency/ abnormal procedures that require using the emergency bus.	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 24 Electrical Power	GND DISPATCH switch powers the MFD and left GTC to allow preflight planning without powering all aircraft systems.	No	Yes	A	A
	ATA 24 Electrical Power	Battery temperature and Direct Current amps/volts gauges are replaced with indications on the MFD, within the synoptic pages and EIS strip, respectively.	No	Yes	A	A
	ATA 24 Electrical Power	Circuit breaker panel changes for new avionics and other changes.	No	Yes	B	A
	ATA 27 Flight Controls	Flap handle location moved aft slightly, and position indication is now on the EIS, rather than at the handle.	No	Yes	B	A
	ATA 27 Flight Controls	Elevator trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Rudder trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Aileron trim indicator moved from pedestal to EIS display	No	Yes	A	A
	ATA 27 Flight Controls	Speed brake switch is removed from throttle knobs and located in pedestal aft of elevator trim wheel.	No	No	A	B
	ATA 28 Fuel	Fuel gauges, fuel flow, fuel temp move to MFD.	No	No	B	B

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 28 Fuel	Fuel boost switches and crossfeed control moved from left instrument panel to center pedestal.	No	Yes	B	A
	ATA 31 Indicating/Recording Systems	Annunciator panel replaced with CAS messages, CAS messages are displayed on the PFD, rather than the copilot MFD.	No	Yes	C	B
	ATA 31 Indicating/Recording Systems	Systems test incorporated into GTCs.	No	Yes	B	A
	ATA 32 Landing Gear	Moved landing gear control from RH panel to LH tilt panel.	No	Yes	A	A
	ATA 32 Landing Gear	Landing gear position indication moved to EIS display, rather than collocated with landing gear handle.	No	Yes	B	A
	ATA 32 Landing Gear	Moved nose gear uplock from right of pedestal to just left of the center pedestal.	No	Yes	C	B
	ATA 32 Landing Gear	Moved emergency brake handle more outboard toward the center of the LH side.	No	Yes	C	B
	ATA 32 Landing Gear	Parking brake control moved farther outboard and is now located directly under the LH outboard GTC.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 33 Lights	Light controls are relocated from AFT pedestal to eyebrow panel.	No	Yes	B	A
	ATA 34 Navigation	FMS functions are provided on GTCs instead of dedicated FMS controller.	No	Yes	C	C
	ATA 34 Navigation	Garmin PFDs/MFD replaces Honeywell PFDs/MFD. PFD/MFD Control is provided on outboard and inboard GTCs, respectively, with backup controls in the GCU 275 in the fire tray.	No	Yes	C FTD 5	C FTD 5
	ATA 34 Navigation	Standby flight display relocated to the fire tray.	No	Yes	C	C
	ATA 34 Navigation	Removed standby HSI that was located below the standby flight display.	No	Yes	A	A
	ATA 35 Oxygen	Oxygen gauge on EIS replaces mechanical gauge.	No	Yes	A	A
	ATA 46 Information Systems	Added SafeTaxi, (optional SurfaceWatch).	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 49 Auxiliary Power Unit APU	Rather than having a separate control panel on the RH sidewall, APU indications for APU RPM and APU generator amps and volts are now displayed in the EIS. The APU GEN, GEN RESET, BLEED AIR, MAX COOL and APU START controls have been moved to the aft pedestal.	No	Yes	B	B
	ATA 49 Auxiliary Power Unit APU	APU approved for unattended operations.	No	Yes	A	A
	ATA 71 Power Plant	Increased thrust to 4218 lbs.	No	Yes	C	C
	ATA 74 Ignition	Engine ignition switches replaced with controls on the GTCs.	No	Yes	B	B
	ATA 76 Engine Controls	Throttle quadrant replaced with a new throttle quadrant that supports autothrottles.	Yes	Yes	D	D
	ATA 76 Engine Controls	Engine start switches moved from left panel to pedestal, aft of throttle quadrant.	No	Yes	C	C
	ATA 76 Engine Controls	Engine run/stop switches have been added in place of the throttle cutoff position. These switches are located in the pedestal along with the engine start switches.	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (XLS+) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 76 Engine Controls	Engine sync switch is removed, as engine sync is handled automatically by FADEC.	No	Yes	C	C
	ATA 77 Engine Indicating	Garmin EIS display replaces Collins engine indicating displays.	No	Yes	B	A
	ATA 77 Engine Indicating	Standby engine display is removed.	No	Yes	B	A
	ATA 78 Engine Exhaust	Thrust reverser indications moved from fire tray to a text readout next to the N_1 display on the EIS. EIS Indications are also used to indicate ARMED, UNLOCK and DEPLOY status.	No	Yes	B	B
	ATA 78 Engine Exhaust	New throttle quadrant will use finger lift levers for thrust reversers stow/deploy, rather than the piggyback levers previously used.	No	Yes	D	D

This Design Differences Table, from the **560XL (Excel and XLS with G5000)** to the **560XL (Ascend**), was 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: 560XL (Excel and XLS with G5000) **TO RELATED AIRCRAFT: 560XL (Ascend)**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Airworthiness Limitations	See AFMS.	No	Yes	A	A
	Placards and Markings	See AFMS.	No	Yes	A	A
	Avionics	Factory new, fully integrated Garmin G5000 avionics suite (3 GDUs and 4 GTCs) replaces STC modified Garmin G5000 avionics suite (3 GDUs and 2 GTCs with limited airframe integration).	No	Yes	C FTD 5	C FTD 5
	Instrument Panel Layout	Switches rearranged and/or removed on new tilt panel to accommodate GTCs and reflect additional systems integration with G5000 system.	No	Yes	C	C
	Instrument Panel Layout	Fire tray organization updated to be more streamlined. AFCS controller and PFD controllers are aligned. All switch lights are aligned.	No	Yes	B	A
	Instrument Panel Layout	The AOA indexer on top of glareshield is removed. AOA indications on the PFDs are retained from Excel and XLS with G5000.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 21 Environmental Control	Manual temperature control knobs have been moved to aft pedestal.	No	Yes	A	A
	ATA 21 Environmental Control	Pressurization indication is now located in EIS display on MFD. PRESS SOURCE, CABIN DUMP, and PRESSURE CONTROL knobs and switches have been moved to aft pedestal.	No	Yes	B	A
	ATA 21 Environmental Control	Manual pressurization cherry picker control removed in favor of STBY pressurization mode.	No	Yes	B	B
	ATA 23 Communications	Total of four GTCs (two center pedestal, two outboard panel) instead of only two GTCs (center pedestal).	No	Yes	B	B
	ATA 23 Communications	Emergency frequency switch relocated from aft center pedestal to just aft of the center GTCs, on the copilot side.	No	Yes	A	A
	ATA 24 Electrical Power	Avionics power distribution.	No	Yes	B	A
	ATA 24 Electrical Power	Battery temperature and Direct Current amps/volts gauges are replaced with indications on the MFD, within the synoptic pages and EIS strip, respectively.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 24 Electrical Power	Circuit breaker panel changes for new avionics and other changes.	No	Yes	A	A
	ATA 24 Electrical Power	EEC control switches are removed. FADEC controls are integrated into the GTCs.	No	Yes	A	A
	ATA 24 Electrical Power	Battery disconnect and interior switches relocated from pilot circuit breaker panel to the ELECTRICAL control group on the pilot tilt panel.	No	Yes	A	A
	ATA 24 Electrical Power	The ground dispatch switch relocated from aft center pedestal to the ELECTRICAL control group on the pilot tilt panel.	No	Yes	A	A
	ATA 27 Flight Controls	Flap handle location moved aft slightly, and position indication is now on the EIS, rather than at the handle.	No	Yes	A	A
	ATA 27 Flight Controls	Elevator trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Rudder trim indicator moved from pedestal to EIS display.	No	Yes	A	A
	ATA 27 Flight Controls	Aileron trim indicator moved from pedestal to EIS display.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 27 Flight Controls	Control yoke buttons located on one level and text labels have been updated (MASTER DISCONNECT, CWS).	No	Yes	A	A
	ATA 28 Fuel	Fuel boost switches and crossfeed control moved from left instrument panel to center pedestal	No	Yes	B	A
	ATA 30 Ice and Rain Protection	ANTI-ICE/DEICE control panel relocated from the center tilt panel to the inboard copilot tilt panel.	No	Yes	A	A
	ATA 31 Indicating/Recording Systems	CAS messages moved from MFD to PFD.	No	Yes	A	A
	ATA 31 Indicating/Recording Systems	Systems test incorporated into GTCs. Rotary system tests knob on center pedestal removed.	No	Yes	B	A
	ATA 31 Indicating/Recording Systems	APU FIRE switchlight moved from outboard copilot panel to the firetray to collocate with the ENG FIRE switchlights.	No	Yes	B	A
	ATA 31 Indicating/Recording Systems	ENG DATA SCAN button changed to EVENT MARKER and relocated from pilot lower tilt panel to center pedestal, aft of the throttles.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 31 Indicating/Recording Systems	ELT indication/switch relocated from pilot circuit breaker panel to copilot tilt panel.	No	Yes	A	A
	ATA 32 Landing Gear	Moved landing gear control from RH panel to LH tilt panel.	No	Yes	A	A
	ATA 32 Landing Gear	Landing gear position indication moved to EIS display, rather than collocated with landing gear handle.	No	Yes	A	A
	ATA 32 Landing Gear	Emergency gear extension uplock controls have changed operation. The pull and rotate T-handle for the unlock with a knob on the same shaft for blowdown, has been replaced with a D-ring handle for unlock, in the same location as the previous control. The blowdown control is moved to the right side of the pedestal, with the same operation.	No	Yes	C	B
	ATA 32 Landing Gear	Parking brake control moved farther outboard and is now located directly under the LH outboard GTC.	No	Yes	A	A
	ATA 32 Landing Gear	Gear related abnormal CAS messages replace the UNLOCK annunciator above the landing gear control handle.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 33 Lights	Light controls are gathered together from the lower pilot panel and center panel and moved to eyebrow panel.	No	Yes	B	A
	ATA 34 Navigation	The standby flight display is relocated to the firetray.	No	Yes	C	C
	ATA 35 Oxygen	Oxygen gauge on EIS replaces mechanical gauge. Oxygen mask mic control switches relocated from pilot/copilot outboard tilt panels to center pedestal, aft of the GTCs.	No	Yes	A	A
	ATA 35 Oxygen	PASS OXY switch relocated from pilot sidewall to pilot lower tilt panel.	No	Yes	A	A
	ATA 49 Auxiliary Power Unit APU	APU is standard. It was standard for XLS, but not Excel.	No	Yes	C	C
	ATA 49 Auxiliary Power Unit APU	Rather than having a separate control panel on the RH sidewall, APU indications for APU RPM and APU generator amps and volts are now displayed in the EIS. The APU GEN, GEN RESET, BLEED AIR, MAX COOL and APU START controls have been moved to the aft pedestal.	No	Yes	B	B
	ATA 49 Auxiliary Power Unit APU	APU approved for unattended operations.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 71 Power Plant	Increased thrust to 4218 lbs.	No	Yes	C	C
	ATA 74 Ignition	Engine ignition switches replaced with controls on the GTCs.	No	Yes	B	B
	ATA 76 Engine Controls	Throttle quadrant replaced with a new throttle quadrant that supports autothrottles.	Yes	Yes	D	D
	ATA 76 Engine Controls	Engine start switches moved from left panel to pedestal, aft of throttle quadrant.	No	Yes	C	C
	ATA 76 Engine Controls	Engine run/stop switches have been added in place of the throttle cutoff position. These switches are located in the pedestal along with the engine start switches.	No	Yes	C	C
	ATA 76 Engine Controls	Engine sync switch is removed, as engine sync is handled automatically by FADEC.	No	Yes	C	C
	ATA 78 Engine Exhaust	Thrust reverser indications moved from fire tray to a text readout next to the N_1 display on the EIS. EIS Indications are also used to indicate ARMED, UNLOCK and DEPLOY status.	No	Yes	B	B

FROM BASE AIRCRAFT: 560XL (Excel and XLS with G5000) TO RELATED AIRCRAFT: 560XL (Ascend)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 78 Engine Exhaust	New throttle quadrant will use finger lift levers for thrust reverser stow/deploy, rather than the piggyback levers previously used.	No	Yes	D	D

This Design Differences Table, from the **560XL (Excel and XLS)** to the **560XL (Excel and XLS with G5000)**, was validated by the FSB on June 19, 2019. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 560XL (Excel and XLS) TO RELATED AIRCRAFT: 560XL (Excel and XLS with G5000)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Airworthiness Limitations	See AFMS.	No	Yes	A	A
	Placards and Markings	See AFMS.	No	No	A	A
	Avionics	Garmin G5000 replaces Honeywell Primus 1000. PFD/MFD displays with softkeys. Two Garmin Touchscreen Controller (GTC) used for avionics functions including G5000 radio tuning, FMS navigation, flight planning, and flight control.	No	Yes	C	C
	Instrument Panel Layout	G5000 flight and engine instruments.	No	Yes	B	B
	Instrument Panel Layout	Altimeter setting, display format, reversion mode and dimming.	No	Yes	C	A
	Instrument Panel Layout	Annunciator panel is replaced by Crew Alert System (CAS) message system on the MFD.	No	Yes	C	B
	ATA 22 Autoflight	G5000 Garmin Mode Controller GMC 7200 automatic flight control system (AFCS) on glareshield. Autopilot mode annunciation moved to PFD (LH and RH).	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (Excel and XLS) TO RELATED AIRCRAFT: 560XL (Excel and XLS with G5000)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 23 Communications	GMA 36 remote audio processor, GTC 575 radio tuning.	No	Yes	C	C
	ATA 23 Communications	Garmin Digital Receiver GDR 66 CPDLC and GSR-56 satellite communications (SATCOM) (optional).	No	Yes	B	B
	ATA 24 Electrical Power	Avionics power distribution.	No	Yes	B	A
	ATA 28 Fuel	Fuel gauges, fuel flow, fuel temp move to Garmin Display Unit (GDU)-1450.	No	No	B	B
	ATA 31 Indicating/Recording Systems	Annunciator panel replaced with CAS messages; AOA to PFD; Standby Electronic Standby Instrument System (ESIS) relocated; Slip-Skid to PFD.	No	Yes	C	B
	ATA 34 Navigation	Nav display control now a GDU and GTC function, weather radar (WX) control, transponder Automatic Dependent Surveillance-Broadcast (ADS-B).	No	Yes	C	C
	ATA 46 Information Systems	Added FliteCharts or ChartView, SafeTaxi, (optional SurfaceWatch).	No	Yes	C	C

FROM BASE AIRCRAFT: 560XL (Excel and XLS) TO RELATED AIRCRAFT: 560XL (Excel and XLS with G5000)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 77 Engine Indicating	AMLCD or mechanical tape gauges replaced with Garmin Engine Indicating System (EIS) displays.	No	Yes	B	B

This Maneuver Differences Table, from the **560XL (Excel and XLS)** to the **560XL (Excel and XLS with G5000)**, was validated by the FSB on June 19, 2019. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 560XL (Excel and XLS) **TO RELATED AIRCRAFT: 560XL (Excel and XLS with G5000)**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Instrument Procedures	PFD/MFD display control, FMS Nav control, Autopilot mode selection, and SVS display control. USP and coupled go-around (optional).	No	Yes	C	C
	Landing	Landing speeds calculated manually and entered via GTC.	No	No	A	A
	Normal Procedures	See AFMS for new or changed Normal Procedures.	No	Yes	C	C
	Abnormal Procedures	See AFMS for new or changed Abnormal Procedures.	No	Yes	C	C
	Emergency Procedures	See AFMS for new or changed Emergency Procedures. EDM is a new function on the Excel.	No	Yes	C	C
	Emergency Procedures	EDM on XLS.	No	No	B	B

This Design Differences Table, from the **560XL (Excel)** to the **560XL (XLS)**, was 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: 560XL TO RELATED AIRCRAFT: 560XLS	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	General	More engine thrust, hyd. and brake system differences, larger cockpit displays, added body fairings, max gross weight change (20,200 lb to 20,400 lb ramp load).	No	Yes	A	A

This Design Differences Table, from the **560XLS** to the **560XL**, was 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: 560XLS TO RELATED AIRCRAFT: 560XL	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	General	Less engine thrust, hyd. and brake system differences, smaller cockpit displays, no body fairings, max gross weight change (20,400 lb to 20,200 lb ramp load).	No	Yes	A	A

This Design Differences Table, from the **560XL** to the **560XLS+** was 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: 560XL TO RELATED AIRCRAFT: 560XLS+	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Engine PW545C replaces PW545A	Full-authority digital engine control (FADEC) controlled. More engine thrust. Thrust reverser deployment emergency procedures changed.	No	Yes	B	B
	Avionics	Collins Proline 21 replaces Honeywell P-1000.	No	Yes	C FTD 5	C FTD 5
	Cockpit Structure	Full span tilt panel added. Emergency gear release controls changed.	No	Yes	A	A
	ATA 21 Air Conditioning	Relocated temperature and pressurization controllers.	No	Yes	A	A
	ATA 22 Autoflight	Collins autopilot and flight guidance control panel. Single flight guidance panel located below glareshield replaces dual flight guidance panels located above PFDs.	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Collins radios. Radio tuning through control display units (CDU) or Cursor Control Panels (CCP) instead of Radio Management Units (RMU).	No	Yes	C FTD 5	C FTD 5
	ATA 24 Electrical Power	Relocated controls and ammeters.	No	Yes	A	A

FROM BASE AIRCRAFT: 560XL TO RELATED AIRCRAFT: 560XLS+	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 31 Indicating/Recording Systems	CAS on display unit 3 replaces annunciator panel.	No	Yes	C FTD 5	C FTD 5
	ATA 32 Landing Gear	Relocated emergency gear release and blow down handles.	No	Yes	A	B
	ATA 33 Lights	Lighting controls relocated.	No	Yes	A	A
	ATA 34 Navigation	Four-tube Collins displays and controllers replace three-tube Honeywell displays and controllers. Integrated Flight Information System (IFIS)-5000 system added. Collins radios and FMS. Radio tuning through CDUs and CCPs instead of RMUs. Electronic standby horizontal situation indicator (HSI) replaces mechanical HSI.	No	Yes	C FTD 5	C FTD 5
	ATA 35 Oxygen	Relocated oxygen controls and gauge.	No	Yes	A	A
	ATA 73 Engine Fuel and Control	Dual channel FADEC engines with new throttles.	No	Yes	B	B
	ATA 77 Engine Indicating	Engine information system on display unit 2. New standby engine gauge.	No	Yes	C FTD 5	C FTD 5

This Design Differences Table, from the **560XLS** to the **560XLS+** was 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: 560XLS TO RELATED AIRCRAFT: 560XLS+	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Engine PW545C replaces PW545B	FADEC controlled.	No	Yes	B	B
	Avionics	Collins Proline 21 replaces Honeywell P-1000.	No	Yes	C FTD 5	C FTD 5
	Cockpit Structure	Full span tilt panel added. Emergency gear release controls changed.	No	Yes	A	A
	ATA 21 Air Conditioning	Relocated temperature and pressurization controllers.	No	Yes	A	A
	ATA 22 Autoflight	Collins autopilot and flight guidance control panel. Single flight guidance panel located below glareshield replaces dual flight guidance panels located above PFDs.	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Collins radios. Radio tuning through CDUs or CCPs instead of RMUs.	No	Yes	C FTD 5	C FTD 5
	ATA 24 Electrical Power	Relocated controls and ammeters.	No	Yes	A	A
	ATA 31 Indicating/Recording Systems	CAS on display unit 3 replaces annunciator panel.	No	Yes	C FTD 5	C FTD 5
	ATA 32 Landing Gear	Relocated emergency gear release and blow down handles.	No	Yes	A	B

FROM BASE AIRCRAFT: 560XLS TO RELATED AIRCRAFT: 560XLS+	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 33 Lights	Lighting controls relocated.	No	Yes	A	A
	ATA 34 Navigation	Four-tube Collins displays and controllers replace three-tube Honeywell displays and controllers. IFIS-5000 system added. Collins radios and FMS. Radio tuning through CDUs and CCPs instead of RMUs. Electronic standby HSI replaces mechanical HSI.	No	Yes	C FTD 5	C FTD 5
	ATA 35 Oxygen	Relocated oxygen controls and gauge.	No	Yes	A	A
	ATA 73 Engine Fuel and Control	Dual channel FADEC engines with new throttles.	No	Yes	B	B
	ATA 77 Engine Indicating	Engine information system on display unit 2. New standby engine gauge.	No	Yes	C FTD 5	C FTD 5

This Design Differences Table, from the **560XLS+** to the **560XL** was 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: 560XLS+ TO RELATED AIRCRAFT: 560XL	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Engine PW545A replaces PW545C	Electric Engine Control (EEC) controlled instead of FADEC controlled, and less thrust.	No	Yes	C FTD 5	C FTD 5
	Avionics	Honeywell P-1000 replaces Collins Proline 21.	No	Yes	C FTD 5	C FTD 5
	Cockpit Structure	Full span tilt panel removed. Emergency gear release controls changed.	No	Yes	A	A
	ATA 21 Air Conditioning	Relocated temperature and pressurization controllers.	No	Yes	A	A
	ATA 22 Autoflight	Honeywell autopilot and flight guidance control panel. Dual flight guidance panels located above PFDs replace single flight guidance panel located below glareshield.	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Honeywell radios. Radio tuning through RMUs instead of CDUs or CCPs.	No	Yes	C FTD 5	C FTD 5
	ATA 24 Electrical Power	Relocated controls and ammeters.	No	Yes	A	A
	ATA 31 Indicating/Recording Systems	Annunciator Panel replaces CAS on display unit 3.	No	Yes	C FTD 5	C FTD 5

FROM BASE AIRCRAFT: 560XLS+ TO RELATED AIRCRAFT: 560XL	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 32 Landing Gear	Relocated emergency gear release and blow down handles.	No	Yes	A	A
	ATA 33 Lights	Lighting controls relocated.	No	Yes	A	B
	ATA 34 Navigation	Three-tube Honeywell displays and controllers replace four-tube Collins displays and controllers. Honeywell radios and FMS. Radio tuning through RMUs instead of CDUs and CCPs. Mechanical standby HSI replaces electrical HSI.	No	Yes	C FTD 5	C FTD 5
	ATA 35 Oxygen	Relocated oxygen controls and gauge.	No	Yes	A	A
	ATA 73 Engine Fuel and Control	Single channel EEC Engines with different throttles and AUTO/MANUAL switches.	No	Yes	C FTD 5	C FTD 5
	ATA 77 Engine Indicating	AMLCD or mechanical tape gauges. Standby engine gauge is half of AMLCD or just mechanical N_1 tapes.	No	Yes	C FTD 5	C FTD 5

This Design Differences Table, from the **560XLS+** to the **560XLS** was 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: 560XLS+ TO RELATED AIRCRAFT: 560XLS	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Engine PW545B replaces PW545C	EEC controlled instead of FADEC controlled.	No	Yes	C FTD 5	C FTD 5
	Avionics	Honeywell P-1000 replaces Collins Proline 21.	No	Yes	C FTD 5	C FTD 5
	Cockpit Structure	Full span tilt panel removed. Emergency gear release controls changed.	No	Yes	A	A
	ATA 21 Air Conditioning	Relocated temperature and pressurization controllers.	No	Yes	A	A
	ATA 22 Autoflight	Honeywell autopilot and flight guidance control panel. Dual flight guidance panels located above PFDs replace single flight guidance panel located below glareshield.	No	Yes	C FTD 5	C FTD 5
	ATA 23 Communications	Honeywell radios. Radio tuning through RMUs instead of CDUs or CCPs.	No	Yes	C FTD 5	C FTD 5
	ATA 24 Electrical Power	Relocated controls and ammeters.	No	Yes	A	A
	ATA 31 Indicating/Recording Systems	Annunciator panel replaces CAS on display unit 3.	No	Yes	C FTD 5	C FTD 5

FROM BASE AIRCRAFT: 560XLS+ TO RELATED AIRCRAFT: 560XLS	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 32 Landing Gear	Relocated emergency gear release and blow down handles.	No	Yes	A	A
	ATA 33 Lights	Lighting controls relocated.	No	Yes	A	A
	ATA 34 Navigation	Three-tube Honeywell displays and controllers replace four-tube Collins displays and controllers. Honeywell radios and FMS. Radio tuning through RMUs instead of CDUs and CCPs. Mechanical standby HSI replaces electrical HSI.	No	Yes	C FTD 5	C FTD 5
	ATA 35 Oxygen	Relocated oxygen controls and gauge.	No	Yes	A	A
	ATA 73 Engine Fuel and Control	Single channel EEC Engines with different throttles and AUTO/MANUAL switches.	No	Yes	C FTD 5	C FTD 5
	ATA 77 Engine Indicating	AMLCD or mechanical tape gauges. Standby engine gauge is half of AMLCD or just mechanical N_1 tapes.	No	Yes	C FTD 5	C FTD 5

APPENDIX 4. GARMIN G5000 INTEGRATED FLIGHT DECK DESCRIPTION

The Supplemental Type Certificate (STC) No. ST01918WI modifies a Textron Model 560XL (Excel or XLS) aircraft by replacing the Honeywell Primus 1000 Avionics with the Garmin G5000 Integrated Flight Deck.

The G5000 installation in the Model 560XL features the following:

- Instrument panel reworked to include 3 LCD displays.
  - Two 14-inch PFD and one 14-inch MFD.
  - Engine instrument display incorporated into MFD.
  - Annunciator panel lights replaced by equivalent CAS messages normally displayed in the MFD CAS window.
- Two touchscreen controllers added to center pedestal for data entry and control of the G5000 system. Among other things, the functions include communications (COM) and navigation (NAV) radio tuning, FMS flight planning, and terminal procedure selection.
- Autopilot controller installed under glareshield.
- Full suite of Garmin G5000 interfacing equipment including XM datalink, iridium phone and datalink systems, and CPDLC – FAA Datacom and Link 2000+.
- GFC 700 autopilot (roll, pitch, yaw, and pitch trim axes),
- Interfaces to existing non-Garmin systems such as Traffic Alert and Collision Avoidance System (TCAS) II, distance measuring equipment (DME), automatic direction finder (ADF), and Radio Altimeter.
- USP and Coupled go-around. (Coupled go-around is optional but is bundled with the USP option.) You cannot have USP without Coupled Go-Around, and vice versa. USP is available at any time the autopilot is engaged, regardless of the active flight director mode.
- EDM.

There are dedicated panels for barometric correction adjustment. Display format and dimming panel is installed in the center pedestal for G5000 display dimming, split screen selection, and reversionary display selection.

The existing standby indicator was relocated in the instrument panel.

Optional equipment evaluated:

- Electronic charts.
- Electronic checklist (ECL).
- CPDLC.
- SVS.

APPENDIX 5. EFB OPERATIONAL EVALUATION GARMIN G5000

1. **Purpose and Applicability.** The following is provided for the benefit of FAA principal inspectors and aircraft operators for their use in determining the acceptance of Electronic Flight Bag (EFB) applications. The Garmin G5000 was evaluated using AC 120-76D, Authorization for Use of Electronic Flight Bags, dated October 27, 2017.

2. **Suitability Determination.**

   The Garmin G5000 is operationally suitable for Type B EFB Applications, including but not limited to:

   - Electronic display of aeronautical charts.
   - Weather and aeronautical information.
   - ECLs.

   The evaluation determined chart display functions to be suitable as one source for electronic display of airport diagrams, approach plates, arrival procedures, departure procedures and visual flight rules (VFR) and instrument flight rules (IFR) enroute charts (both low- and high-altitude). Since chart information cannot be displayed in the event of certain avionics failures, a suitable secondary source is required to be available to the flightcrew.

3. **Description.** The G5000 includes “FliteCharts” and optional “ChartView” electronic charts. A specific system description for the system configuration appropriate to the installation is available in the approved Airplane Flight Manual (AFM), and applicable Garmin G5000 Integrated Avionics System Pilot’s Guide.

4. **Specifications for Training.** At a minimum, training should include use of the FMS to flight plan and use of the electronic chart functions to display the enroute charts, airport depiction charts, departure and arrival procedures, and approach charts. Pilots should master the weather functions to obtain current and forecast weather and for origin, destination, and alternate airports if datalink weather functions are enabled.

5. **Specification for Checking.** Recommended tasks include demonstrating competency in using the FMS to integrate use of the electronic chart functions to display departures, arrivals, and approaches, and utilizing the graphical weather functions if XM weather functions are enabled.

APPENDIX 6. EFB OPERATIONAL EVALUATION COLLINS PROLINE 21

1. **Purpose and Applicability.** The following is provided for the benefit of FAA principal inspectors and aircraft operators for their use in determining the acceptance of EFB applications. This evaluation was conducted using a previous revision of AC 120-76. However, the data/terminology has been updated to reflect AC 120-76D.

2. **Suitability Determination.**
   The Collins Proline 21 with IFIS-5000 is operationally suitable for Type B EFB Applications, including but not limited to:

   - Electronic display of aeronautical charts.
   - Weather and aeronautical information.

   Single or Dual File Server Unit (FSU)-5010 installations will not support EFB operational authorization as sole source of aeronautical information. Since chart information cannot be displayed while on emergency power, or in the event of certain avionics failures, a suitable secondary source is required to be available to the flightcrew.
   Collins IFIS-5000 Operator's Guide must be immediately available to the flightcrew.

   NOTE: ECLs were not evaluated by the FSB.

3. **Description.** The IFIS provides supplemental information, such as weather and electronic charts, in the cockpit via Adaptive Flight Displays (AFD). The IFIS functions are intended to provide situational awareness only and do not provide alerts or warnings. The three major functions provided by the IFIS-5000 are; support for navigational charts, enhanced map overlays, and graphical weather images. The charts function allows the viewing of selected Jeppesen aeronautical charts. The Enhanced Maps function is split into an application and a server that together provide map overlays of geopolitical, airspace, airway data and visual navigation information. The Graphical Weather function option provides various weather images, such as Next Generation Weather Radar (NEXRAD). The Graphical Weather System is operator selected as either XM or Universal.

4. **FSB Specifications for Training.** At a minimum, training should include use of the FMS to flight plan and the EFB electronic chart functions to access the airport depiction charts, departure and arrival procedures, and approach charts. Pilots should master the graphical weather depiction functions, if enabled, to obtain Meteorological Terminal Aerodrome Reports (METAR) and Terminal Aerodrome Forecasts (TAF) for origin, destination, and alternate airports.

5. **FSB Specification for Checking.** Recommended tasks include demonstrating competency in using the FMS to integrate use of the electronic chart functions to display departures, arrivals, and approaches, and utilizing the graphical weather functions if enabled.

APPENDIX 7. EFB OPERATIONAL EVALUATION HONEYWELL PRIMUS 1000

1. **Purpose and Applicability.** The following is provided for the benefit of FAA principal inspectors and aircraft operators for their use in determining the acceptance of EFB applications. This evaluation was conducted using a previous revision of AC 120-76. However, the data/terminology has been updated to reflect AC 120-76D.

2. **Suitability Determination.**
   The Honeywell Primus 1000 Charts and/or MFD Uplink Graphical Weather are operationally suitable for Type B EFB Applications, including but not limited to:

   - Electronic display of aeronautical charts.
   - Weather and aeronautical information.

   The EFB evaluation determined chart display functions to be suitable as one source for electronic display of airport diagrams, approach plates, arrival procedures, and departure procedures. Since chart information cannot be displayed in the event of certain avionics failures, a suitable secondary source is required to be available to the flightcrew.

   AFM limitations must be complied with regarding the use of Honeywell Charts and/or MFD Uplink Graphical Weather as an EFB.

3. **Description.** A specific system description for the system configuration appropriate to the installation is available in the approved AFM and the Honeywell Primus 1000 Control Display System for the Citation XLS Pilot's Manual.

4. **FSB Specifications for Training.** At a minimum, training should include use of the FMS to flight plan and the EFB electronic chart functions to access the airport depiction charts, departure and arrival procedures, and approach charts. Pilots should master the graphical weather depiction functions, if enabled, to obtain METARS and TAF's for origin, destination, and alternate airports.

5. **FSB Specification for Checking.** Recommended tasks include demonstrating competency in using the FMS to integrate use of the electronic chart functions to display departures, arrivals, and approaches, and utilizing the graphical weather functions if enabled.

APPENDIX 8. ASCEND MODEL SERIAL NO. 560-6501 AND ON, GARMIN 5000 FLIGHT DECK DESCRIPTION

Textron Aviation Inc. designed the Ascend Model 560-6501 and on, with factory direct Garmin G5000. This factory direct installation differs from the Garmin G5000 Supplement Type Certificate (STC) No. ST01918WI.

The features of the G5000 STC No. ST01918WI are listed above in appendix 4.

The Ascend G5000 factory installation in the Model 560XL features the following:

- Instrument panel reworked to include 3 LCD displays.
  - Two 14-inch PFD and one 14-inch MFD without soft keys.
  - Engine instrument display incorporated into MFD.
  - Annunciator panel lights replaced by equivalent CAS messages normally displayed in the PFD CAS window.
- Four touchscreen controllers. The first two controllers are directly below the MFD. The third controller is on the pilot's left side adjacent to the electrical switches. The fourth controller is on the copilot's right side. The touchscreen controllers are for data entry and control of the G5000 system. The functions include communications (COM) and navigation (NAV) radio tuning, FMS flight planning, and terminal procedure selection.
- Autopilot controller installed under glareshield.
- Thrust Reverser Emergency Stow Switches are now push buttons and located on the glareshield directly above the autopilot controller.
- Standby Flight Instrument is now located above the pilot side PFD.
- Full suite of Garmin G5000 interfacing equipment including XM datalink, iridium phone and datalink systems, and CPDLC – FAA Datacom and Link 2000+ and FANS 1/A+ CPDLC and ACARS.
- GFC 700 autopilot (roll, pitch, yaw, and pitch trim axes).
- Required Navigation Performance (RNP), Equipment, Operational, and Navigation Procedures requirements if equipped and approved.
- Garmin GTS 8000 TCAS II system.
- Special procedures, Category II, Synthetic Vision Guidance System (SVGS), RNP AR APCH system, optional dual Honeywell LASEREF VI Micro inertial reference system, and optional AR navigation database available.
- USP and Coupled go-around. You cannot have USP without Coupled Go-Around, and vice-versa. USP is available at any time the autopilot is engaged, regardless of the active flight director mode.
- Runway Occupancy Awareness (ROA), Synthetic Vision Technology (SVT), SafeTaxi.
- Overspeed protection with the Autothrottle (AT).
- EDM.
- GWX 8000 StormOptix Weather radar, (Hail and lightening detection as well as predictive windshear warning system).

There are dedicated panels for barometric correction adjustment. Display format and dimming panel is installed in the center pedestal for G5000 display dimming, split screen selection, and reversionary display selection.

Optional equipment evaluated:

- Electronic charts.
- Electronic checklist (ECL).
- CPDLC.

APPENDIX 9. ASCEND MODEL SERIAL NO. 560-6501 AND ON, RNP AR OPERATIONS

1. **Background.** In September 2025, an FSB convened in Wichita, KS at FlightSafety International to evaluate the Textron Aviation Model 560XL Ascend ground and FFS training on Required Navigation Performance Authorization Required (RNP AR) operations. The FSB conducted flights to make an operational suitability determination in a CE-560XL Ascend aircraft. Numerous RNP AR APCHs to RNP 0.14 minima were flown at Rick Husband Amarillo International Airport, Amarillo, TX, which included low approaches and go-around/missed approaches with and without autopilot and simulated single engine. The RNP AR training described in this appendix does not replace the requirements or considerations in the current edition of FAA AC 90-101, Approval Guidance for RNP Procedures with AR. This report's requirements and recommendations are in addition to AC 90-101.

2. **Pilot Type Rating.** Not applicable.

3. **Related Aircraft.** Not applicable.

4. **Pilot Training.** The FSB has determined that the minimum training is Level D. In conducting RNP AR APCHs, specific duties and procedures are assigned to both the pilot flying (PF) and pilot monitoring (PM). Therefore, the requirements for initial, transition, upgrade, and recurrent training as defined below are applicable to both the PIC and SIC.

   4.1 Experience/Prerequisite. The pilots must be:

   a) Qualified and current on the CE-560XL aircraft; or
   b) In training in an initial, transition, upgrade, or recurrent course.

   4.2 Special Emphasis Areas. The following items are recommendations noted by the FSB to enhance pilot training and understanding of RNP AR APCH operations in the CE-560XL Ascend.

   4.2.1 Ground and flight training to include go-around procedure when above the missed approach altitude, including FMS sequencing.

   4.2.2 Ground and flight training to include go-around procedure when radius to fix legs are after the Final Approach Point, including speed constraints, speed management, and FMS sequencing.

   4.3 Ground Training.

   4.3.1 Initial ground training programs must fully comply with the requirements of the current edition of AC 90-101.

   4.3.2 Recurrent ground training must fully comply with the requirements of the current edition of AC 90-101. Additionally, the FSB recommends a review of "Pilot Procedures" and "Abnormals/Failures" as defined in AC 90-101.

4.4 Flight Training.

4.4.1 Initial flight training programs must fully comply with the requirements of the current edition of AC 90-101.

4.4.2 Recurrent flight training programs must fully comply with the requirements of the current edition of AC 90-101.

5. Pilot Checking. The FSB has determined that the minimum checking is Level D. Credit for completion will be given once the applicant satisfactorily demonstrates to the instructor adequate knowledge and practical application of RNP AR operations. Title 14 CFR parts 91K and 135 operators may be subject to additional checking per their FAA-approved training program. Due to the unique nature of these approaches, the FSB encourages operators to include RNP AR APCHs in all applicable checking evaluations.

6. Pilot Currency. To maintain currency in RNP AR operations, a PIC must have accomplished at least one RNP AR APCH to either a missed approach or landing within the preceding 6 months. Additionally, the PM used in meeting this currency requirement must be RNP AR current and qualified as described in this appendix. The RNP AR APCH must have been accomplished in either an appropriately qualified FSTD or CE-560XL Ascend aircraft. Any checking under 14 CFR part 61, 91, or 135 that requires a demonstration of RNP AR APCH competency that was accomplished within the preceding 6 months satisfies this currency requirement. If RNP AR APCH currency is lost, currency may be reestablished by completing the RNP AR recurrent training elements defined in this appendix.

7. Operational Suitability. The FSB determined that RNP AR APCHs are operationally suitable. An operational suitability determination does not constitute an operational authorization.