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Flight Standardization Board Report

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Manufacturer
Textron Aviation, Inc.

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A14SW	MU-300	Diamond I	MU-300 BE-400
A16SW	MU-300-10 400 400A 400T	Diamond II Beechjet T-1A	MU-300 BE-400

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1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	05/09/1985
1	All	12/30/2011
2	3, Appendices 1-2	03/06/2013
3	1, 2, 3, 5, 6, 7, 9, 11, Appendices 1-2	03/11/2016
4	Appendices 1-3	08/17/2016
5	All	11/24/2020

2. INTRODUCTION

Aircraft Evaluation Groups (AEG) are 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 convert to Section 508 compliance. No change bars were added as the entire report has been revised/updated.

4. BACKGROUND

The Small Aircraft AEG formed an FSB that evaluated the Textron Aviation MU-300-10, 400, 400A, and 400T as defined in FAA Type Certificate Data Sheet (TCDS) No. A16SW. The evaluation was conducted using the methods described in FAA Advisory Circular (AC) 120-53B, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

4.1 MU-300. The MU-300 pilot type rating designation was established for the Mitsubishi Model MU-300 in conjunction with FAA Type Certification on November 6, 1981 as defined in FAA TCDS No. A14SW. At that time, the FAA Flight Standards AEG did not exist so the pilot type rating designation was established in conjunction with certification. The Mitsubishi Model MU-300 was added to the FAA Pilot Certificate Aircraft Type Designations as “MU-300” pilot type rating designation.

4.2 MU-300-10. The Mitsubishi Model MU-300-10 was type certificated April 30, 1985. The MU-300 Flight Standardization Board (FSB) evaluated the Mitsubishi Model MU-300-10 from April 22 to 24, 1985. The MU-300-10 was determined to be the same pilot type rating as the Model MU-300. Based on the May 9, 1985 Flight Standardization Board Report (FSBR), the MU-300-10 was included as the same pilot type rating on the FAA Pilot Certificate Aircraft Type Designations as "MU-300" pilot type rating designation.

4.3 400. On March 7, 1986, the FAA Pilot Certificate Aircraft Type Rating List was revised to add the common pilot type rating to address a change in aircraft model designation from Mitsubishi Model MU-300-10 to Beech Aircraft Corporation Model 400. The pilot type rating designation for Mitsubishi Model MU-300, MU-300-10, and Beech Aircraft Corporation Model 400 is a common pilot type rating on the FAA Pilot Certificate Aircraft Type Rating List as "MU-300, BE-400" pilot type rating designation.

NOTE 1: Airman certificates bearing a "MU-300" pilot type rating designator need not be reissued specifically to reflect the common pilot type rating designation "MU-300, BE-400" due to nature change in model designation maintaining the same type design.

NOTE 2: As of April 1, 1986, the Beech Aircraft Corporation acquired the type certificate (TC) and production of the Mitsubishi MU-300 and MU-300-10 aircraft. The Model MU-300-10 was transferred from the A14SW TC to the A16SW TC and given the Beech Aircraft Corporation Model designation, "400." The MU-300-10 and 400 are the same except for paint and interior. All MU-300-10 aircraft were subsequently converted to 400 aircraft by Beech Service Bulletin (SB) No. 2140.

4.4 400A. The Beech Aircraft Corporation Model 400A was type certificated June 20, 1990. The pilot type rating designation for the Beech Aircraft Corporation Model 400A is the same common pilot type rating on the FAA Pilot Certificate Aircraft Type Rating List as "MU-300, BE-400" pilot type rating designation.

4.5 400T. The Beech Aircraft Corporation Model 400T was type certificated November 27, 1991. There is one designation for the 400T: the USAF T-1A. The 400 FSB evaluated the Model 400T making determination to include the Model 400T as the same common pilot type rating on the FAA Pilot Certificate Aircraft Type Rating List as "MU-300, BE-400" pilot type rating designation on September 21, 1995. This determination allows qualified military pilot in commands (PIC) in the 400T to be eligible for "MU-300, BE-400" pilot type rating designation on an FAA pilot certificate in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 61, § 61.73.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACS Airman Certification Standards
- ADC Air Data Computer
- AEG Aircraft Evaluation Group
- AFCS Autopilot Flight Control System
- AFD Adaptive Flight Display
- AFM Aircraft Flight Manual
- AHRS Attitude and Heading Reference System
- AIR Aircraft Certification Service
- ATP Airline Transport Pilot
- ATS Autothrottle System
- AV Audiovisual Presentation
- BOW Basic Operating Weight
- CCP Cursor Control Panel
- CHP Course/Heading Panel
- CPT Cockpit Procedures Trainer
- CRT Cathode Ray Tube
- DCP Display Control Panel
- DCU Data Concentration Unit
- ECL Electronic Checklist
- EFB Electronic Flight Bag
- EFC Electronic Fuel Control
- EFIS Electronic Flight Instrument System
- EIS Engine Information System
- EMI Electromagnetic Interference
- FAA Federal Aviation Administration
- FADEC Full-Authority Digital Engine Control
- FD Flight Director
- FFS Full Flight Simulator
- FGS Flight Guidance System
- FMS Flight Management System
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSIMS Flight Standards Information Management System
- FSTD Flight Simulation Training Device
- FSU File Server Unit
- FTD Flight Training Device
- GPS Global Positioning System
- HIRF High Intensity Radiated Field
- HO Handout
- IAPS Integrated Avionics Processing System

- ICA Instructions for Continued Airworthiness
- ICBI Interactive Computer-Based Instruction
- IFIS Integrated Flight Information System
- LCD Liquid Crystal Display
- LNAV Lateral Navigation
- LPV Localizer Performance with Vertical Guidance
- MDA Minimum Descent Altitude
- MDC Maintenance Diagnostic Computer
- MDR Master Differences Requirements
- METAR Aviation Routine Weather Report
- MFD Multifunction Display
- MFF Mixed Fleet Flying
- MGTOW Maximum Gross Takeoff Weight
- MSD Mode Status Display
- NAS National Airspace System
- OEI One-Engine-Inoperative
- PFD Primary Flight Display
- PI Principal Inspector
- PIC Pilot In Command
- PTT Part Task Trainer
- RTU Radio Tuning Unit
- RVDT Rotary Variable Differential Transformer
- SB Service Bulletin
- SDU Sensor Display Unit
- SID Standard Instrument Departure
- STC Supplemental Type Certificate
- SU Stand-Up Instruction
- SVS Synthetic Vision System
- TAF Terminal Area Forecast
- TAWS Terrain Awareness and Warning System
- TC Type Certificate
- TCAS Traffic Alert and Collision Avoidance System
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- V_1 Takeoff Decision Speed
- VHF Very High Frequency
- V_{MCA} Minimum Control Speed (Air)
- V_{MCG} Minimum Control Speed (Ground)
- V_{REF} Reference Landing Speed
- WAAS Wide Area Augmentation System

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 (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 AEG 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 AEG determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., 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 TCs 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 Textron Aviation MU-300, MU-300-10, 400, 400A, 400T aircraft type rating designation is MU-300, BE-400.

7.2 Common Type Ratings. In accordance with the provisions of FAA Order 8900.1, Flight Standards Information Management System (FSIMS), and AC 120-53B, the MU-300, MU-300-10, 400, 400A, and 400T are considered to have type ratings in common.

7.3 Military Equivalent Designations. Military aircraft that qualify for the MU-300, BE-400 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 MU-300-10 is related to the 400, 400A, and 400T.

8.2 Related Aircraft on Different TCDS. The MU-300 is related to the MU-300-10, 400, 400A, and 400T.

9. PILOT TRAINING

9.1 Airman Experience. Airmen receiving initial Textron Aviation MU-300, 400 training should have previous training in high altitude operations in multiengine transport turbojet aircraft, new generation avionics, and flight management system (FMS) experience. Pilots without this experience may require additional training.

NOTE Airmen receiving upgrade, transition Textron Aviation MU-300, 400 series training are assumed to have previous experience in multiengine transport turbojet aircraft, new generation avionics, high altitude operations, and FMS. Pilots without this experience may require additional training.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on, and perform the following areas during initial, recurrent, and differences ground training:

a) Primary Flight Instruments. MU-300, 400 series aircraft are equipped with mechanical individual flight instruments, primary flight displays (PFD), and multifunction displays (MFD). Various formats of altitude and airspeed are presented. Pilots need to be able to understand the multitude of information presented on these displays. Pilots transitioning from traditional instruments may require additional training and instrument scan practice to gain proficiency in manually flying by reference to the PFD. Recognition of

reversionary modes, display failures, and appropriate corrective action to be taken should be addressed.

b) Flight Control System. An operational understanding of the spoiler control system as well as an understanding of the roll trim system is critical to efficient operation of the aircraft, especially with one-engine-inoperative (OEI) procedures.

c) Flight Guidance System (FGS) Including the Autopilot and Flight Director (FD). An understanding of the various lateral and vertical modes and the ability to select and arm the modes during different phases of flight is essential.

d) Electronic Fuel Control (EFC). An operational understanding of the EFC and the engine thrust control is required.

e) Autothrottle System (ATS) (If Equipped). A thorough knowledge of speed modes and interoperability with FD during vertical phases of flight is essential.

9.2.2 Pilots must receive special emphasis on, and perform the following areas during initial, recurrent, and differences flight training:

a) Primary Flight Instruments. MU-300, 400 series aircraft are equipped with mechanical individual flight instruments, PFDs, and MFDs. Various formats of altitude and airspeed are presented. Pilots need to be able to understand the multitude of information presented on these displays. Pilots transitioning from traditional instruments may require additional training and instrument scan practice to gain proficiency in manually flying by reference to the PFD. Recognition of reversionary modes, display failures, and appropriate corrective action to be taken should be addressed.

b) Flight Control System. An operational understanding of the spoiler control system as well as an understanding of the roll trim system is critical to efficient operation of the aircraft, especially with OEI procedures.

c) FGS Including the Autopilot and FD. An understanding of the various lateral and vertical modes and the ability to select and arm the modes during different phases of flight is essential.

d) EFC. An operational understanding of the EFC and the engine thrust control is required.

e) ATS (If Equipped). A thorough knowledge of speed modes and interoperability with FD during vertical phases of flight is essential.

9.3 Special 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), as applicable. There are no specific flight characteristics.

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

- Emergency and abnormal procedures require locating circuit breakers at left and right crew seat.
- Crew coordination for manual gear extension at left and right crew seat.
- Environmental controls at right crew seat.

9.5 Regulatory Training Requirements Which Are Not Applicable to the Textron Aviation MU-300 Series, 400 Series. Title 14 CFR part 135, § 135.345(b)(3): Part 135 Ground Training, Propellers.

9.6 FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the Textron Aviation MU-300, 400 series that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the Textron Aviation MU-300, 400 series that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Pilots must receive differences training between variations of the Textron Aviation MU-300, 400 series. The level of training is specified in Appendix 3, Differences Tables.

10. PILOT CHECKING

10.1 Landing from a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the Textron Aviation MU-300 series and 400 series is not extremely remote due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification or a § 61.58 proficiency check, § 91.1065 competency check, or § 135.293 competency check is required. Refer to Order 8900.1, Volume 5, Airman Certification, 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 ATP and Type Rating for Airplane ACS, as applicable. There are no specific flight characteristics.

10.3 Seat-Dependent Tasks. There are no 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 Textron Aviation MU-300, 400 series that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the Textron Aviation MU-300, 400 series that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Pilots must receive differences checking between the variations of the Textron Aviation MU-300 series and 400 series aircraft. The level of checking is specified in Appendix 3.

11. PILOT CURRENCY

There are no additional currency requirements for the Textron Aviation MU-300, 400 series other than those already specified in parts 61, 91, and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The Textron Aviation MU-300, MU-300-10, 400, 400A, and 400T are operationally suitable for operations under parts 91 and 135. The list of operating rules evaluated is on file at the Small Aircraft AEG.

13. MISCELLANEOUS

13.1 Forward Observer Seat. Textron Aviation MU-300 series and 400 series aircraft do not have a dedicated forward observer seat. No specific aircraft interior passenger seating configuration has been evaluated. A forward-facing passenger seat adjacent to the cabin entry door or side-facing passenger seat across from the cabin entry door may be acceptable for compliance with part 135, § 135.75(b).

13.2 Approach Minima Category. Refer to 14 CFR part 97, § 97.3. The Textron Aviation MU-300 series and 400 series are considered Category "B" aircraft for the purposes of determining normal "straight-in" landing weather minima. The minimum indicated airspeed is reference landing speed (V_{REF}) for the selected flap position and the actual gross weight of the aircraft, plus any additional speed additives for the conditions during the approach, until aligned with the landing runway. If operating at a speed in excess of the upper limit of the speed range for the aircraft's category, the minimums for the higher category must be used.

13.3 Normal Landing Flaps. The normal "final flap setting" per § 91.126(c) is "Flaps 30".

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 →**	**MU-300**	**MU-300-10**	**400**	**400A**	**400T**
MU-300		Not Applicable	B/A	B/A	D/D	D/D
MU-300-10		B/A	Not Applicable	(1) A/A	D/D	D/D
400		B/A	(1) A/A	Not Applicable	D/D	D/D
400A		D/D	D/D	D/D	(2)(3)(4)(5)	Not Determined
400T		D/D	D/D	D/D	Not Determined	Not Applicable

NOTES:

(1) 400 aircraft with Bendix King KFC-400/EFS-10 or Sperry SPZ-900 are C/D.
400 aircraft with Collins FCS-850/Pro Line 4 electronic flight instrument system (EFIS) is D/D.

(2) 400A aircraft modified by Supplemental Type Certificate (STC) for Pro Line 21 avionics system (400XT) is C/B.
(400XT) aircraft modified by STC for localizer performance with vertical guidance (LPV) wide area augmentation system (WAAS) to aircraft is C/B.
(400XT) aircraft modified by STC for Universal Terrain Awareness and Warning System (TAWS) is B/B.

(3) 400A aircraft modified by STC for Williams FJ44-3AP engines is C/B.

(4) 400A aircraft modified by STC ST03473CH for ATS is C/C.

(5) 400A aircraft modified by Garmin G5000 Integrated Flight Deck is D/C.

APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the model **400A (400XT) (Pro Line 21 and FJ44-3AP) to the 400A (400XT) (Pro Line 21 and FJ44-3AP) (ATS) (STC ST03473CH)** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400A (400XT) (Pro Line 21 & FJ44-3AP) **TO RELATED AIRCRAFT:** 400A (400XT) (Pro Line 21 & FJ44-3AP) (ATS) (STC ST03473CH)	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Instrument Panel Layout	Added Autothrottle Mode Status Display (MSD) on lower center of instrument panel. Added ATS Engage/Disengage push button switch to center pedestal.	No	Yes	B	B
	Throttle Quadrant and Power Levers	Added servo controlled Thrust Levers. Added right-hand Throttle Lever push button to disengage ATS. Removed Throttle Lever friction lock.	No	Yes	B	B
	Instrument Control Layout	Control functions of the ATS are activated through the Go-Around Button on the left-hand Throttle Lever or through the center pedestal mounted ATS Engage/Disengage push button switch on the center pedestal.	No	Yes	B	B

This Maneuver Differences Table, from the **model 400A (400XT) (Pro Line 21 and FJ44-3AP) to the 400A (400XT) (Pro Line 21 and FJ44-3AP) (ATS) (STC ST03473CH)** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (400XT) (Pro Line 21 & FJ44-3AP)** **TO RELATED AIRCRAFT:** **400A (400XT) (Pro Line 21 & FJ44-3AP) (ATS) (STC ST03473CH)**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight	Preflight test of the ATS.	No	Yes	C FTD 4	B
	Takeoff, Landing	With ATS On.	Yes	Yes	C FTD 4	C FTD 4
	Rejected Takeoff or engine failure at takeoff decision speed (V_1)	With ATS On.	Yes	Yes	C FTD 4	C FTD 4
	Climb, Cruise, Decent	With ATS On.	Yes	Yes	C FTD 4	C FTD 4
	Multiengine Go-Around	With ATS On.	Yes	Yes	C FTD 4	C FTD 4
	Low Altitude Level Off, Decent to minimum descent altitude (MDA)	With ATS On.	Yes	Yes	C FTD 4	C FTD 4
	Emergency and Abnormal Procedures	With ATS On.	No	Yes	C FTD 4	C FTD 4

This Maneuver Differences Table, from the **400A (400XT) (Pro Line 21 and FJ44-3AP) to the 400A (400XT) (Pro Line 21 and FJ44-3AP) with FMS-6100 LPV** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew member.

FROM BASE AIRCRAFT: **400A (400XT) (Pro Line 21 & FJ44-3AP)** **TO RELATED AIRCRAFT:** **400A (400XT) (Pro Line 21 & FJ44-3AP) w/ FMS-6100 LPV**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Instrument Approaches	WAAS LPV Approaches enabled.	No	Yes	C FTD 4	B
	Normal Procedures	Procedures for flying WAAS LPV Approaches.	No	Yes	C FTD 4	B
	Abnormal Procedures	Procedures specific to FMS with LPV Capabilities.	No	Yes	B	B

This Design Differences Table, from the model **400A (400XT) (Pro Line 21 and FJ44-3AP)** to the **400A (400XT) (Pro Line 21 and FJ44-3AP) with Universal Avionics TAWS** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (400XT) (Pro Line 21 & FJ44-3AP)** **TO RELATED AIRCRAFT:** **400A (400XT) (Pro Line 21 & FJ44-3AP) with Universal Avionics TAWS**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Instrument Panel Layout	Added Glideslope Inhibit Switch, Flap Override Switch and Obstacle INOP Annunciator to Center Panel	No	Yes	A	A

This Maneuver Differences Table, from the model **400A (400XT) (Pro Line 21 and FJ44-3AP)** to the **400A (400XT) (Pro Line 21 and FJ44-3AP) with Universal Avionics TAWS** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (400XT) (Pro Line 21 & FJ44-3AP)** **TO RELATED AIRCRAFT:** **400A (400XT) (Pro Line 21 & FJ44-3AP) with Universal Avionics TAWS**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	Preflight test of TAWS.	No	Yes	B	B
	Normal Procedures	Procedures for use of TAWS A.	No	Yes	B	B
	Abnormal Procedures	Procedures specific for use of the Universal Avionics TAWS A.	No	Yes	B	B

This Design Differences Table, from the model **400A (400XT) (Pro Line 21 and JT15D)** to the **400A (400XT) (Pro Line 21 and FJ44-3AP)** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400A (400XT) (Pro Line 21 & JT15D) **TO RELATED AIRCRAFT: 400A (400XT) (Pro Line 21 & FJ44-3AP)**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Weights	Update Basic Operating Weight (BOW).	No	No	A	A
	Airworthiness Limitations	Revised Aircraft Flight Manual (AFM) Limitations.	No	No	A	B
	Placards and Markings	Revised Instrument Panel placards Engine Instrument Markings revised. Add annunciators (L&R each) (B/A Source, B/A Overpress, and TT2 Fail). Change EFC annunciators to No Dispatch.	No	No	B	B
	Engines	P&W JT15D-5 engines replaced with Williams International FJ44-3AP engines. Engine mounts and cowling replaced.	No	Yes	B	A

FROM BASE AIRCRAFT: 400A (400XT) (Pro Line 21 & JT15D) TO RELATED AIRCRAFT: 400A (400XT) (Pro Line 21 & FJ-44-3AP)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Instrument Panel Layout	Add L&R Full-Authority Digital Engine Control (FADEC) Switches and Channel A/B Indicators on lower Inst. Panel. Convert 2 EFC Switches to Idle Speed Switch & WOW/GDAL Test Switch. Remove T/R throttle paddles. Replace throttle cables with TLA sensors. Replace Engine Sync rotary know with toggle switch Remove T/R annunciators and stow.	No	Yes	B	A
	ATA 28 Fuel	Fuel Jet Pumps modified for FJ44 fuel flows.	No	No	A	A
	ATA 30 Ice/Rain Protection	Engine Anti-ice modified for FJ44.	No	No	A	A
	ATA 54 Nacelles/Pylons	Engine pylon modified for FJ44 Engine nacelles modified for FJ44	No	No	A	A
	ATA 71 Powerplant	FJ44 Powerplant Assembly, Nacelles, Cowling and engine plumbing and wiring.	No	No	A	A

FROM BASE AIRCRAFT: 400A (400XT) (Pro Line 21 & JT15D) TO RELATED AIRCRAFT: 400A (400XT) (Pro Line 21 & FJ-44-3AP)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 72 Turbine Engine	JT15D-5 replaced with FJ44-3AP. Sea level thrust increase to 3050 lbs.	No	Yes	B	B
	ATA 73 Engine Fuel and Control	Replace JT15D Hydro-Mechanical fuel control with FJ44 FADEC.	No	Yes	B	B
	ATA 74 Ignition	Ignition control through FADEC. Remove OFF switch position.	No	Yes	B	B
	ATA 75 Air	Bleed Air temperature control system installed in nacelle. Bleed Air auto-shutdown added.	No	Yes	B	B
	ATA 76 Engine Controls	Remove Thrust Lever Paddles. Thrust lever cables replaced with Rotary Variable Differential Transformers (RVDT). EFC replaced with FADEC.	No	Yes	B	B
	ATA 77 Engine Indicating	Engine instrument limits changed to FJ44.	No	No	A	A
	ATA 78 Engine Exhaust	Removed Thrust Reversers New FJ44 exhaust nozzles.	No	Yes	A	A
	ATA 79 Engine Oil	Engine oil specifications change for FJ44.	No	No	A	B
	ATA 80 Starting	FADEC control of engine start.	No	Yes	C FTD 4	B

This Maneuver Differences Table, from the model **400A (400XT) (Pro Line 21 and JT15D)** to **400A (400XT) (Pro Line 21 and FJ44-3AP** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (400XT) (Pro Line 21 & JT15D)** **TO RELATED AIRCRAFT:** **400A (400XT) (Pro Line 21 & FJ44-3AP)**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	JT15D-5 replaced with FJ44-3AP Exterior and Interior Preflight.	No	Yes	C FTD 4	B
	Engine Start	JT15D-5 replaced with FJ44-3AP Include FADEC.	No	Yes	B	B
	Taxi	JT15D-5 replaced with FJ44-3AP GDAL/WOW & Idle checks.	No	Yes	C FTD 4	B
	Takeoff	JT15D-5 replaced with FJ44-3AP Engine Power Setting procedure.	No	Yes	B	A
	Rejected Takeoff	JT15D-5 replaced with FJ44-3AP No Thrust Reverser.	No	Yes	B	B

FROM BASE AIRCRAFT: 400A (400XT) (Pro Line 21 & JT15D) TO RELATED AIRCRAFT: 400A (400XT) (Pro Line 21 & FJ-44-3AP)	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Climb, Cruise, Decent	JT15D-5 replaced with FJ44-3AP Power setting procedures.	No	Yes	B	A
	Landing	JT15D-5 replaced with FJ44-3AP Thrust Reversers removed.	No	Yes	A	A
	Normal Procedures	JT15D-5 replaced with FJ44-3AP FADEC BIT, FADEC checks, Ignition. No Thrust Reverser.	No	Yes	C FTD 4	B
	Abnormal Procedures	JT15D-5 replaced with FJ44-3AP affecting several Abnormal Procedures, Additional FADEC procedures.	No	Yes	B	B
	Emergency Procedures	JT15D-5 replaced with FJ44-3AP affecting Emergency Procedures.	No	Yes	B	B

This Design Differences Table, from the model **400A (JT15D and Pro Line 4)** to the **400A (400XT) (JT15D and Pro Line 21)** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (JT15D & Pro Line 4)** **TO RELATED AIRCRAFT:** **400A (400XT) (JT15D & Pro Line 21)**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	General Airplane Configuration	Pro Line 4 cathode ray tube (CRT) displays replaced with Pro Line 21 liquid crystal display (LCD) adaptive flight displays (AFD).	No	No	A	A
	Weights	Update BOW.	No	No	A	A
	Airworthiness Limitations	Revised AFM Limitations & FMS-6100 capability.	No	Yes	A	A
	Placards and Markings	Revised cockpit placards & labels Analog Engine Instrument replaced with Engine Information System (EIS) with new display marking methods.	No	No	A	A
	Engines	Engine Instruments now EIS.	No	No	A	A

FROM BASE AIRCRAFT: 400A (JT15D & Pro Line 4) TO RELATED AIRCRAFT: 400A (400XT) (JT15D & Pro Line 21)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Flight Deck	Annunciator Panel moved to overhead. No change glareshield or specific annunc. New course/heading panel (CHP). Altitude Selector moved to CHP. Radio Tuning Units (RTU) moved aft to accommodate CHP. Reversion controls now toggle switches. AFD line select keys. New Display Control Panels (DCP). New Cursor Control Panel (CCP) for MFD. New PS-835 Standby Battery Systems. Collins Traffic Alert and Collision Avoidance System (TCAS)-4000 (TCAS II) option. Install DBU-5000. Install Integrated Flight Information System (IFIS)-5000.	No	Yes	B	B

FROM BASE AIRCRAFT: 400A (JT15D & Pro Line 4) TO RELATED AIRCRAFT: 400A (400XT) (JT15D & Pro Line 21)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Instrument Panel Layout	Engine Instruments now EIS top of MFD. Fuel quantity indicators now digital on MFD. Fuel Temperature & flow digital on MFD. Sensor Display Unit (SDU) removed. Vertical Speed display to tape format.	No	No	A	A
	ATA 24 Electrical Power	Existing Standby Power : STBY Altimeter, STBY Alt. Vibrator, STBY Inst Lights, #1 Comm, #1 RTU, #1 DCP, #1 CCP. 2nd Standby Power System: Two PS-835 Standby Battery system installed to power #1 MFD, #1 Attitude and Heading Reference System (AHRS), #1 Air Data Computer (ADC), #1 File Server Unit (FSU), #1/#2 oil pressure sensor, & #1/#2 data concentration unit (DCU). WOW switch prevents 2nd STBY PWR on ground.	No	Yes	B	B

FROM BASE AIRCRAFT: 400A (JT15D & Pro Line 4) TO RELATED AIRCRAFT: 400A (400XT) (JT15D & Pro Line 21)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 28 Fuel	Analog Fuel Quantity Indicators replaced by EIS on top of MFD with Digital Display. Fuel Temperature digital EIS on MFD. Fuel Quantity Signal Conditioner added to convert fuel-sensing signals for DCU.	No	No	A	A
	ATA 31 Indicating/Recording	Upgrade Integrated Avionics Processing System (IAPS) to accommodate AFDs.	No	No	A	A
	ATA 34 Navigation	Collins RTA-854 radar with Turb. Detection. AHS-3000A AHRS installed. FMS now FMC-6100 card and software. Replace Global Positioning System (GPS) receivers to GPS-4000. Remove SDU & add Navigation Display capability on MFD.	No	No	B	A
	ATA 45 Central Maintenance System	Maintenance Diagnostic Computer (MDC) 4000 replaced with MDC 3110.	No	No	A	A

FROM BASE AIRCRAFT: 400A (JT15D & Pro Line 4) TO RELATED AIRCRAFT: 400A (400XT) (JT15D & Pro Line 21)	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 46 Information Systems	IFIS-5000 (1 or 2 FSU option with 2 MFD). XM graphical weather products. Enhanced Map Overlays. Jeppesen Electronic Charts (Class 3 Electronic Flight Bag (EFB)). Electronic Pilot Checklist.	No	Yes	C FTD 4	B
	ATA 53 Fuselage	New Antennas for L-band, Mode S, GPS2, XM and TCAS (optional).	No	No	A	A
	ATA 73 Engine Fuel and Control	Fuel Flow indicators digital on top MFD.	No	No	A	A
	ATA 77 Engine Indicating	Analog engine instruments replaced with EIS. EIS provides display of N1, N2, ITT, Fuel Flow, Oil Pressure, Oil Temperature. (4) DCUs installed to provide data to EIS.	No	No	B	B
	ATA 80 Starting	EIS Display powered for engine start.	No	No	C FTD 4	B

This Maneuver Differences Table, from the model **400A (JT15D and Pro Line 4)** to the **400A (400XT) (JT15D and Pro Line 21)** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: **400A (JT15D & Pro Line 4)** **TO RELATED AIRCRAFT:** **400A (400XT) (JT15D & Pro Line 21**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	Display power-up for EIS system to display Preflight Check required information.	No	Yes	B	B
	Engine Start	Display power sources and functions during Engine Start Procedures.	No	Yes	B	B
	Instrument Approaches	Flight Mode Annunciation format and information change on PFD.	No	Yes	B	A
	Normal Procedures	Pro Line 21 AFD LCD displays with EIS, IFIS, & Electronic Pilot Checklist. All Normal Procedures affected.	No	Yes	C FTD 4	B
	Abnormal Procedures	Pro Line 21 AFD LCD displays with EIS, IFIS & Electronic Pilot Checklist. Changed and New Procedures.	No	Yes	B	B

FROM BASE AIRCRAFT: 400A (JT15D & Pro Line 4) TO RELATED AIRCRAFT: 400A (400XT) (JT15D & Pro Line 21	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Emergency Procedures	Pro Line 21 AFD LCD displays with EIS, IFIS & Electronic Pilot Checklist. Changed Procedures only.	No	Yes	B	B
	In-Flight Maneuvers	Pro Line 21 AFD LCD displays. Vertical Speed indication format.	No	No	B	B

This Design Differences Table, from the model **400** to the **400A and 400T** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400 **TO RELATED AIRCRAFT: 400A/400T**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	General Airplane Configuration	Electro Mechanical Flight Instruments replaced with Pro Line 4 EFIS.	No	Yes	D FFS	D FFS
	Weights	Increased maximum weights. New maximum gross takeoff weight (MGTOW) 16,100 lb Max Landing weight 15,700 lb Max Fuel Temp increased to 50°C.	No	No	A	A
	Airworthiness Limitations	Revised AFM Limitations. minimum control speed (air) (V_{MCA}) and minimum control speed (ground) (V_{MCG}) increased. Rudder Boost required.	No	Yes	A	A
	Placards and Markings	Revised cockpit placards & labels.	No	No	A	A
	Engines	Same JT15D-5 engine with 65 lb thrust increase.	No	No	A	A
	Flight Deck	Angle of Attack (AOA) Indexer removed.	No	No	A	A
	Instrument Panel Layout	Change from 6 independent flight instruments to PFD-combined format.	No	Yes	D FFS	D FFS

FROM BASE AIRCRAFT: 400 TO RELATED AIRCRAFT: 400A/400T	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Cabin	New interior passenger configuration.	No	No	A	A
	Flight Controls	Automatic Flap delay with H STAB Ice ON. Rudder Boost added.	Yes	Yes	B	A
	Aerodynamic Controls	Yaw Damper control surface removed, Yaw Damper incorporated into rudder. Yaw Damper OFF for takeoff & landing.	No	Yes	B	B
	ATA 21 Air Conditioning	New 5°C Limitation. Refrigeration Air Conditioning operation.	No	Yes	A	B
	ATA 22 Autoflight	Dual fail passive 3-axis Autopilot Flight Control System (AFCS) and autopilot.	No	Yes	D FFS	D FFS
	ATA 23 Communications	Radio Tuning Changes.	No	Yes	A	A
	ATA 24 Electrical Power	Reduction in AC power use and distribution. Inverter procedures change. Generator normal limit increased 280 amps.	No	Yes	B	B

FROM BASE AIRCRAFT: 400 TO RELATED AIRCRAFT: 400A/400T	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 25 Equipment/Furnishings	Optional Lav moved to rear of cabin. Pax Seating configuration changes.	No	No	A	A
	ATA 27 Flight Controls	Delayed Flap extension with H Stab Anti-Ice ON.	No	No	A	A
	ATA 28 Fuel	Add 2nd Fuel Transfer Pump. Add Fuel Feed indicator light. Fuel capacity increase to 4,912 lb. Wing fuel decrease, Fuselage fuel increase. More Fuselage Tanks, 2 Transfer Pumps. Fuselage Fill System option removed.	No	No	A	A
	ATA 30 Ice and Rain Protection	Horizontal Stabilizer Anti-ice/Deice changes.	No	Yes	B	B
	ATA 31 Instruments	Several new & changed Annunciators.	No	Yes	B	B
	ATA 33 Lights	Automatic retraction of Landing Lights with Landing Gear Retraction.	No	Yes	A	A

FROM BASE AIRCRAFT: 400 TO RELATED AIRCRAFT: 400A/400T	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 34 Navigation	Pro Line 4 PFD format for Flight Instruments. Pro Line 4 MFD format for Nav/WX/TCAS. Add Multi-Sensor FMS TAWS added.	No	Yes	D FFS	D FFS
	ATA 35 Oxygen	Remove Oxygen Generators Pass Oxygen on 77 cubic ft oxygen bottle.	No	Yes	B	B
	ATA 72 Turbine Engine	Engine thrust increase to 2,965 lb.	No	No	A	A
	ATA 77 Engine Indicating	N1 and N2 add digital display.	No	No	A	A
	ATA 78 Engine Exhaust	Model 400T had no Thrust Reversers.	No	Yes	A	A
	ATA 80 Starting	Ignition ON with Thrust Lever during start.	No	Yes	B	B

This Maneuver Differences Table, from the model **400A** to the **400A/400T** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400 **TO RELATED AIRCRAFT: 400A/400T**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	Preflight Check items changed & added.	No	Yes	B	B
	Engine Start	Ignition control sequence.	No	Yes	B	B
	Taxi	Rudder Boost Check. Change Horizontal Stab check.	No	Yes	B	B
	Takeoff	Operation of Yaw Damper.	No	Yes	A	A
	Instrument Approaches	FMS approach selection and Modes.	No	Yes	B	A
	Landing	Yaw Damper OFF.	No	Yes	A	A
	Normal Procedures	Normal Procedures revised.	No	Yes	C FTD 4	B
	Abnormal Procedures	Abnormal Procedures changed & added.	No	Yes	B	B
	Emergency Procedures	Emergency Procedures changed & added.	No	Yes	B	B
	In-Flight Maneuvers	Operation of Anti-Ice systems.	No	Yes	B	B

This Design Differences Table, from the model **Mitsubishi Model MU-300** to the **MU-300-10 and 400** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: MU-300 **TO RELATED AIRCRAFT: MU-300-10 and 400**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Weights	MGTOW increase to 15,780 lb.	No	No	A	A
	Airworthiness Limitations	New Operating Weights & speeds.	No	No	A	A
	Placards and Markings	Engine limitations changed.	No	No	A	A
	Engines	Engine change to JT-15D-5 with 2,900 lb of thrust. Add EFC for engine fuel control.	No	Yes	B	A
	Flight Deck	Add EFC switches on center pedestal. Annunciator panel moved from overhead panel to center instrument panel.	No	Yes	B	A
	Instrument Panel Layout	Generator ammeters and Voltmeter moved to overhead. Fuel gauges relocated.	No	No	A	A
	Cabin	New Cabin configuration.	No	No	A	A
	ATA 21 Air Conditioning	Single Zone Temperature Control System not available.	No	No	A	A
	ATA 23 Communications	Remove Comm 1 Plt Phone.	No	Yes	B	A
	ATA 24 Electrical Power	Standard 8 buss secondary power distribution system.	No	No	A	A

FROM BASE AIRCRAFT: MU-300 TO RELATED AIRCRAFT: MU-300-10 and 400	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 25 Equipment/Furnishings	New aircraft interior and seat configuration.	No	No	A	A
	ATA 28 Fuel	Optional fuselage fuel tank increases fuel capacity to 4,904 lb and fuselage fuel transfer system (standard @ RJ-34 & after).	No	Yes	A	A
	ATA 31 Instruments	Annunciator Panel relocated from overhead panel to center instrument panel. Add annunciators for EFC system.	No	Yes	A	A
	ATA 33 Lights	Automatic landing light retract with landing gear retraction.	No	Yes	A	A
	ATA 72 Turbine Engine	Replaced JT15D-4 with JT15D-5, increase thrust from 2,500 lb to 2,900 lb.	No	No	A	A
	ATA 73 Engine Fuel and Control	New EFC for fuel control.	No	Yes	B	A
	ATA 77 Engine Indicating	New Limits on Engine Instruments.	No	No	A	A
	ATA 78 Engine Exhaust	Optional Thrust Reversers.	No	Yes	B	A
	ATA 80 Starting	New Procedures to check EFC during engine start.	No	Yes	B	A

This Maneuver Differences Table, from the model **Mitsubishi Model MU-300** to the **MU-300-10 and 400** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: MU-300 **TO RELATED AIRCRAFT: MU-300-10 and 400**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	Minor changes to exterior preflight items. New preflight action for EFC.	No	Yes	B	A
	Engine Start	EFC annunciator checks.	No	Yes	B	A
	Taxi	Add EFC check.	No	Yes	B	A
	Takeoff	Additional thrust affects acceleration at lower takeoff weights. ECS OFF takeoff procedure option. No zero flap takeoff data or procedures.	No	Yes	B	A
	Rejected Takeoff or Engine Failure at V_1	Change in V speeds and weights.	No	No	A	A
	Climb Cruise Decent	Increase rate of climb.	No	No	A	A
	Normal Procedures	New procedures for EFC and ECS OFF Takeoff.	No	Yes	B	A
	Abnormal Procedures	Minor changes and additions.	No	Yes	B	A
	Emergency Procedures	Minor changes and additions.	No	Yes	B	A

This Design Differences Table, from the model **400A (MDR Note (5) equipment only)** to the **400A with G5000** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) **TO RELATED AIRCRAFT: 400A with G5000**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Airworthiness Limitations	AFMS changes.	No	Yes	A	A
	Placards and Markings	AFMS changes.	No	No	A	A
	Servicing	G5000/GFC 700 System maintenance.	No	Yes	B	B
	Flight Deck	Remove Collins Pro Line 4 Install Garmin G5000.	No	Yes	D	C

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) TO RELATED AIRCRAFT: 400A with G5000	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Instrument Panel Layout	Changed to accommodate G5000: • Removed Collins PFDs and MFDs. Replaced with two Garmin PFDs and a single MFD. • SDUs and standby flight instruments replaced with single MD302 Standby Attitude Module. • Engine Gauges replaced to MFD. • Flap indication replaced to MFD. • GMC 7250 autopilot controller beneath glareshield in center instrument panel. • Two GCU 275 standby PFD controllers installed beneath glareshield in center instrument panel. • Replaced audio panels. Control integrated into G5000 system components. • Two GTC 570 touch-screen MFD controllers installed in center pedestal.	No	Yes	D	C

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) TO RELATED AIRCRAFT: 400A with G5000	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 22 Autoflight	Collins APS-850 autopilot replaced by Garmin GFC 700 autopilot with GMC 7250 mode controller. Garmin USP System software.	Yes	Yes	D	C
	ATA 23 Communications	Dual Garmin GIA 63W Communication Transceivers installed. Removed Audio Control Panels. Replaced with dual Garmin GMA 36 audio processors, with controls integrated into G5000 system.	No	Yes	C FTD 4	C FTD 4
	ATA 24 Electrical Power	Individual Circuits & Circuit Breakers change with new labels and locations.	No	No	A	A
	ATA 25 Equipment/Furnishings	Several new avionics racks behind instrument panel, in the nose avionics bay and underneath center pedestal.	No	No	A	A
	ATA 28 Fuel	Fuel quantity indicators relocated below MFD. Fuel used counter removed and function integrated within G5000.	No	Yes	C	C

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) TO RELATED AIRCRAFT: 400A with G5000	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 31 Instruments	Added AFMS procedure to direct pilot to overhead panel to determine failed pitot or static heat element with a PITOT HT OFF caution.	No	Yes	B	B
	ATA 33 Lights	Pilot and Co-pilot display format and dimming control panel added to center pedestal for G5000 system	No	Yes	B	C
	ATA 34 Navigation	Install dual Garmin GIA 63W GPS/very high frequency (VHF) Navigation receivers Collins transponders replaced with Garmin GTX 3000. Controls integrated into G5000 system Synthetic Vision System (SVS) Display on PFDs.	No	Yes	D	C

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) TO RELATED AIRCRAFT: 400A with G5000	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 46 Information Systems	Optional datalink equipment available that provides SiriusXM and Garmin Connext Weather services. Also provided are the abilities to send and receive telephone calls and SMS text messaging. Class III, Type B EFB with Electronic Charts. Safetaxi Airport Diagrams. Garmin SurfaceWatch surface monitoring system.	No	Yes	C	C
	ATA 53	Added (2) GPS antennae, (2) GTP 59 temperature probes, and (2) WiFi/Iridium antennae.	No	No	A	A

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) TO RELATED AIRCRAFT: 400A with G5000	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 77 Engine Indicating	Analog Engine Indicators replaced by digital engine indications on G5000 MFD. Engine Start, Sync and Ignition indications repeated on MFD. Engine Vib Meter removed, replaced and integrated within G5000.	No	Yes	C FTD 4	C FTD 4
	ATA 80 Starting	Analog Engine Indicators replaced by digital engine indications on G5000 MFD – ITT gauge changes scale after start sequence.	No	Yes	C FTD 4	C FTD 4

This Maneuver Differences Table, from the model **400A (MDR Note (5) equipment only)** to the **400A with G5000** lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: 400A (MDR Note (5) Equipment Only) **TO RELATED AIRCRAFT: 400A with G5000**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Procedures	Avionics Preflight.	No	Yes	B	B
	Engine Start	Engine Gauges changed to electronic display on the MFD.	No	No	B	B
	Taxi	AFMS changes.	No	Yes	B	B
	Takeoff	Engine Power Instruments moved to MFD. New Target N1 bug system integrated into G5000.	No	Yes	C FTD 4	C FTD 4
	Instrument Approaches	All new PFD, MFD and controllers, FMS, Autopilot, WAAS procedures, lateral navigation (LNAV) & LPV approaches, SVS.	No	Yes	D	C FTD 4
	Normal Procedures	AFMS changes.	No	Yes	C FTD 4	C FTD 4
	Abnormal Procedures	AFMS changes.	No	Yes	C FTD 4	C FTD 4
	Emergency Procedures	AFMS changes.	No	Yes	C FTD 4	C FTD 4

APPENDIX 4. ELECTRONIC DISPLAY OF AERONAUTICAL CHARTS, CHECKLISTS, AND WEATHER (GARMIN G5000)

Garmin G5000 Integrated Avionics System
Model 400A (RK-045, RK-049 through RK-604)

1. Purpose and Applicability

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

2. Suitability Determination

The Garmin G5000 is operationally suitable for:

- Electronic display of aeronautical charts;
- Electronic display of electronic checklists (ECL); and
- Weather and aeronautical information.

The 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.

3. Description

The G5000 includes "FliteChart" and optional "ChartView" electronic charts. A specific system description for the system configuration appropriate to the installation is available in the approved AFM, and Garmin G5000 Integrated Avionics System Pilot's Guide.

4. Specifications for Training

As a minimum, training should include use of the FMS to flight plan and use of the electronic chart functions to display the airport depiction charts, Standard Instrument Departures (SID), arrival procedures, and approach charts. Pilots should master the weather functions to obtain Aviation Routine Weather Reports (METAR) and Terminal Area Forecasts (TAF) for origin, destination, and alternate airports, if XM 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.