



OPERATIONAL EVALUATION REPORT

BOMBARDIER AEROSPACE

BD-100-1A10 CHALLENGER 300/350

GRUPO DE AVALIAÇÃO DE AERONAVES – GAA

BRAZILIAN AIRCRAFT EVALUATION GROUP

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

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1 General

1.1 Evaluation Team

1.1.1. First issue team member

Name	Task	Organization
Guilherme dos Santos Macedo	Evaluator Inspector	ANAC

Acronyms

- AHRS - Attitude and Heading Reference System
- AOA – Angle of Attack
- APU – Auxiliary Power Unit
- CAFM – Computerized Airplane Flight Manual
- CIFP – Computerized In-Flight Planner
- EFIS – Electronic Flight Instrument System
- EICAS – Engine Indicating and Crew Alerting System
- FAA – Federal Aviation Administration
- FFS – Full Flight Simulator
- FGS – Flight Guidance System
- FMA – Flight Mode Annunciator
- FMS – Flight Management System
- FPV – Flight Path Vector
- FSB – Flight Standardization Board
- FSTD – Flight Simulator Training Device
- FTD – Flight Training Device
- IFIS – Integrated Flight Information System
- IFR – Instrument Flight Rules
- ILS – Instrument Landing System
- IRS – Inertial Reference System
- LNAV – Lateral Navigation
- LOFT – Line-Oriented Flight Training
- LPV – Localizer performance with vertical guidance
- MCR – Master Common Requirements
- MDR – Master Difference Requirements
- MEL – Minimum Equipment List
- MMC – Multi Crew Coordination
- MMEL – Master Minimum Equipment List
- OEB – Operational Evaluation Board
- ODR – Operational Difference Requirements
- OSD – Operational Suitability Data
- PFD – Primary Flight Display
- RBAC – Regulamento Brasileiro de Aviação Civil
- RBHA – Regulamento Brasileiro de Homologação Aeronáutica
- RNP AR – Required Navigation Performance Authorization Required
- TCAS – Traffic Collision Avoidance System
- TCCA – Transport Canada Civil Aviation
- TCDS – Type Certificate Data Sheet

2 Introduction

2.1 Background

The BD-100-1A10, named Challenger 300, was certified in Brazil in January 2008 and had its TCCA Operational Evaluation Board Report first issued in June 2008.

In October 2014, ANAC issued a revision of the BD-100-1A10 TCDS which approved modifications that upgrade avionics and performance from the airplane S/N 20501 and on. These airplanes, starting at S/N 20501, are named Challenger 350.

Between 2013 and 2014, a joint tripartite operational evaluation has been carried out among TCCA, FAA and EASA to evaluate those avionics upgrades (Phase I) and performance upgrades (Phase II). The operational evaluation was completed in September 2014. EASA has issued an OSD – Flight Crew to include the Challenger 350. TCCA and FAA should wait for the certification of additional Phase II modifications (CAFM and RNP AR ≤ 0.3) to review their OEB and FSB reports.

ANAC evaluation of airplane BD-100-1A10 (both Challenger 300 and 350) was conducted by documental analysis using the information provided by the manufacturer and based on the OEB Report, original revision, issued by TCCA on June 2nd, 2008 and on the OSD – Flight Crew, original revision, issued by EASA on September 14th, 2014.

In case more detailed information is required, refer to the OEB Report and OSD – Flight Crew mentioned above.

2.2 Objective

This report presents ANAC collection of results obtained from the operational evaluations of Bombardier aircraft model BD-100-1A10 commercially known as Challenger 300 (up to aircraft S/N 20500) and Challenger 350 (starting at aircraft S/N 20501).

2.3 Purpose

The purpose of this report is to:

- a. Define the pilot type rating assigned for the BD-100-1A10 aircraft;

- b. Define the requirements for training, checking and currency applicable to flight crew for the BD-100-1A10, and functionalities;
- c. Provide the Master Differences Requirements (MDR) for crews requiring differences qualification for mixed-fleet-flying;
- d. Provide an acceptable Operator Differences Requirements (ODR);
- e. Describe the required Flight Simulation Training Device (FSTD) for crew training and checking.

2.4 Applicability

This report is applicable to:

- a. Brazilian operators of the aircraft identified as BD-100-1A10 in the ANAC TCDS EA-2007T14 who operate under RBHA 91 and RBAC 135 rules;
- b. Approved Training Organizations certified under RBAC 142 (Type Rating Training Organizations - TRTO);
- c. Civil Aviation Inspectors (INSPAC) related to safety oversight of BD-100-1A10 aircraft;
- d. ANAC Principal Operations Inspectors (POIs) of BD-100-1A10 operators.

2.5 Cancellation

Not applicable.

3 Pilot Type Rating

The specific pilot type rating assigned to the BD-100-1A10 aircraft is designated "**CL30**".

The Challenger 300 and the Challenger 350 series aircraft have been assessed as variants requiring Level B familiarization training.

Airmen who wish to pursue any specific type rating must comply with the requirements established on subparagraph 61.213(a)(1) of RBAC 61.

The GAA recommends the update of ANAC type rating list (Instrução Suplementar – IS 61-004) with the following information:

Table 1 - Pilot Type Rating

X – Type Rating (Airplane) – Land – Multi Pilot Operation, Multi Engine (All Engines)				
Manufacturer	Aircraft		RMK	Type Rating
	Model	Name		ANAC
Canadair (Bombardier)	BD100-1A10	Challenger CL300 Challenger CL350	-	CL30

4 Master Difference Requirements (MDR)

The Master Difference Requirements matrix for BD100-1A10 variants is shown in Table 2. These provisions are applied when there are differences between models which affect crew knowledge, skills, or abilities related to flight safety (e.g., Level A or greater differences) for training, checking and currency, respectively, according to IAC 121-1009.

Table 2 - Master Difference Requirements

		From Airplane		
		Challenger 300	Challenger 300 with avionics and performance upgrade	Challenger 350
To Airplane	Challenger 300	-	B/B/B	B/B/B
	Challenger 300 with avionics and performance upgrade	B/B/B	-	B/B/B
	Challenger 350	B/B/B	B/B/B	-

Challenger 300 aircraft with avionics and performance upgrade refer to all aircraft that incorporate

- the avionics upgrade (2013) and/or
- the Performance Upgrade (2014). All performance upgraded aircraft have the upgraded avionics suite.

5 Operator Difference Requirements (ODR)

Each operator of a mixed fleet of BD-100-1A10 shall produce its own ODR, as required by IAC 121-1009.

For Operators flying the BD-100-1A10 aircraft, the ODR tables in Appendix 2 have been found acceptable and may be approved by POI for an operator with the specific aircraft equipage.

6 Specifications for Training, Checking and Currency

Specifications for training, checking and currency are detailed on the TCCA OEB Report and on the EASA OSD – Flight Crew mentioned above.

A footprint of the Pilot Initial Training is presented in Appendix 1.

6.1 Airmen Minimum Experience for Initial Flight Training

The initial pilot type rating course described Appendix 1 is considered to be compliant with the requirements of RBAC 61. This course is recommended to be used as a baseline for BD-100-1A10 type rating training.

The candidate pilot must, at least:

- hold a private pilot license – airplane and;
- hold a Land Multiengine Class Rating (MLTE) or a type rating of a multiengine aircraft and;
- hold an IFR rating; and
- Have been approved in the theoretical exam of ANAC Airline Transport Pilot License (PLA), or had accumulated flight experience in high altitudes airplanes, or in jet planes; or hold a certificate of an ANAC approved high altitude course.

6.2 Airmen Minimum Qualification for Differences Training

The candidate pilot for a differences training between the airplanes must hold a valid “CL30” type rating and be qualified on the base aircraft.

6.3 Training Area of Special Emphasis (TASE)

The following areas of emphasis should be addressed during ground and flight training in all referenced initial type rating training for the Challenger 300:

Challenger 300

Systems Integration Training:

- a) Dual hydraulic system malfunctions, FFS only
- b) Aileron / elevator disconnect (jammed controls in each axis), FFS only

- c) Operation of Stick Pusher System
- d) ILS approach on standby instruments
- e) Primary Flight Display (PFD), Navigation Display (ND), EICAS reversionary modes
- f) Integrated use of EICAS messages, switch positions and synoptic pages to determine aircraft system status
- g) Yaw Damper failure in high altitude cruise
- h) Dual Generator Failure procedure
- i) Loss of cabin pressure procedures
- j) Instrument flying on standby instruments
- k) Fuel leaks
- l) Smoke procedures, including smoke removal
- m) Operation of the pitch and roll mechanical disconnect feature, FFS only
- n) Noise abatement procedures
- o) Flap setting verification at take-off, Take Off Warning system
- p) Flight Control modes and monitoring of FMA
- q) No flap landing

The ANAC GAA recommends early exposure to the FGS, FMA and FMS, especially for pilots with no previous EFIS or FMS experience. Establishing early confidence in manually flying the aircraft, converting from manual to automatic (FMS controlled) flight mode and vice versa, is equally important due to heavy reliance on the Automatic Flight Control System (AFCS). In the event of a flight path deviation due to input error or system malfunction, the flight crew must be able to comfortably transition from automatic to manual mode and vice versa, in an orderly fashion.

Challenger 350

- a) EICAS
- b) Flight Guidance System (FGS) and Mode displays
- c) Flight Management System (FMS)

- d) Dual Generator Failure procedure
- e) Loss of cabin pressure procedures
- f) Instrument flying on standby instruments
- g) Fuel leaks
- h) Smoke procedures, including smoke removal
- i) Operation of the pitch and roll mechanical disconnect feature, FFS only
- j) Noise abatement procedures
- k) Flap setting verification at take-off, Take Off Warning system
- l) Flight Control modes and monitoring of FMA
- m) No flap landing
- n) expanded PFD with AOA FPV
- o) LNAV Capability on go-around
- p) multi-scan Weather Radar
- q) IFIS enhancements including Jeppesen chart presentation changes
- r) FMS 6200 upgrades to support increased capabilities including LPV approaches
- s) Dual IRS replacement of AHRS system
- t) TCAS 7.1 (TSS)
- u) Smart Runway / Smart Landing Alerting
- v) Limitation and use of APU and Reverse Thrust
- w) Introduction of eAFM and ePerformance
- x) CAFM practical exercise which includes take-off, climb, and landing performance for a typical flight
- y) CIFP including climb, cruise and descent performance for a typical flight

The ANAC GAA recommends early exposure to the FGS, FMA and FMS, especially for pilots with no previous EFIS or FMS experience. Establishing early confidence in manually flying the aircraft, converting from manual to

automatic (FMS controlled) flight mode and vice versa, is equally important due to heavy reliance on the Automatic Flight Control System (AFCS). In the event of a flight path deviation due to input error or system malfunction, the flight crew must be able to comfortably transition from automatic to manual mode and vice versa, in an orderly fashion.

7 Compliance to RBHA 91 and RBAC 135

No Compliance Checklists were provided by the manufacturer.

8 Technical Publications

8.1 Master Minimum Equipment List - MMEL

The BD-100-1A10 MMEL approved by the TCCA shall be used by Brazilian operators as a basis for developing their MEL. These documents are available at the TCCA website, through the link <https://www.tc.gc.ca/eng/civilaviation/certification/projects-mmcl-menu-1379.htm>.

8.2 Airplane Flight Manual - AFM

The BD-100-1A10 AFM approved by GGCP/SAR shall be used by Brazilian operators as a basis for developing their Operator Airplane Operation Manual (AOM).

APPENDIX 1

Initial Type Rating Training Footprint

Initial Type Rating – Challenger 300 without avionics and performance upgrades:

Day 1	Day 2	Day 3	Day 4	Day 5
System Integration ¹ 1 Ground School Systems (9:00)	System Integration 2 Ground School Systems (9:00)	System Integration 3 Ground School Systems (9:00)	System Integration 4 Ground School Systems (9:00)	System Integration 5 Ground School Systems (9:00)
Day 6	Day 7	Day 8	Day 9	Day 10
System Integration 6 Ground School Systems (9:00)	System Integration 7 Ground School Systems (9:00)	Theoretical Knowledge Exam (2:00) FFS 1 ² (5:30)	FFS 2 (5:30)	FFS 3 (5:30)
Day 11	Day 12	Day 13	Day 14	
FFS 4 (5:30)	FFS 5 (5:30)	FFS 6 – LOFT (5:30)	FFS License Skill Test (5:30)	
FFS times include time for briefing and debriefing				
¹ CHALLENGER 300 Procedure Trainer				
² FFS Level C or D				

Initial Type Rating – Challenger 350:

Day 1	Day 2	Day 3	Day 4	Day 5
System Integration ¹ 1 Ground School Systems (9:00)	System Integration 2 Ground School Systems (9:00)	System Integration 3 Ground School Systems (9:00)	System Integration 4 Ground School Systems (9:00)	System Integration 5 Ground School Systems (9:00)
Day 6	Day 7	Day 8	Day 9	Day 10
System Integration 6 Ground School Systems (9:00)	System Integration 7 Ground School Systems (9:00)	Theoretical Knowledge Exam (2:00) FFS 1 ² (5:30)	FFS 2 (5:30)	FFS 3 (5:30)
Day 11	Day 12	Day 13	Day 14	
FFS 4 (5:30)	FFS 5 (5:30)	FFS 6 – LOFT (5:30)	FFS License Skill Test (5:30)	
FFS times include time for briefing and debriefing				
¹ CHALLENGER 350 Procedure Trainer				
² FFS Level C or D				

APPENDIX 2

Acceptable Operator Difference Requirements (ODR) Tables

ACCEPTABLE OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLES

Definitions	ODR Training Level
“HO” = Handout	A
“S/T” = Slide/Tape presentations “TCBI” = Tutorial Computer Based Instruction “SU” = Stand-up Instructors “VT” = Video Tapes	B
“ICBT” = Interactive Computer Based Training “CSS” = Cockpit System Simulators “CPT” = Cockpit Procedures Trainers “PTT” = Part Task Trainers “FTD 2-5” = Flight Training Devices (level 2-5)	C
“FTD 6-7” = Flight training devices (level 6-7) “FFS A-B” = Full Flight Simulators (level B or lower)	D
“FFS C-D” = Full Flight Simulators (level C or D) “ACFT” = Aircraft	E
<p>NOTES</p> <ul style="list-style-type: none"> An “X” in an ODR table column indicates that any of the training methods listed for that level are acceptable. If a specific instruction method is specified in an ODR table column, it must be used. In accordance with the AC120-53B a “B” in the Checking column of the ODR tables indicates a “task” or “systems” check is required. A “C” in the checking column indicates a partial proficiency check is required. 	

ODR Tables from Challenger 300 to Challenger 300 with Avionics and Performance Upgrades:

DIFFERENCE AIRCRAFT: Avionics and Performance Upgrades BASE AIRCRAFT: BD-100-1A10				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	(Challenger 350 Performance Upgrade) Passenger cabin updated with larger cabin windows	No	No	HO				A	A
Aircraft General	Larger winglets	No	No	HO				A	A
Limitations	(Challenger 350 Performance Upgrade) Increased operating weights: MTOW AFM from 38,850 lb to 40,600 lb MTOW Cert from 40,150 lb to 40,600 lb MLW from 33,750 lb to 34,150 lb MZFW from 27,200 lb to 28,200 lb	No	No	HO				A	A

DESIGN changes identified in table reflect the differences introduced by the Performance Upgrade.

Base Aircraft (BD-100-1A10), refers to all aircraft produced before the introduction of the 2013 Avionics Upgrade.

DIFFERENCE AIRCRAFT: Avionics and Performance Upgrades BASE AIRCRAFT: BD-100-1A10				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
22 AFCS	½ bank not allowed in LNav mode below normal transition 31,600 ft.	No	Norm	HO				A	A
22 AFCS	Go-Around or missed approach. If LNav is active prior to selection of TOGA, LNav remains engaged vice defaulting to Roll or TO mode	No	Norm		S/T SU TCBI			B	B
23 Comm	FANS-1A+ CPDLC and ADS-C controlled via FMS 6200 CDU ATN/Links 2000 + available for base and variant aircraft	No	Norm		S/T SU TCBI			B	B
31 Indicating/Recording	Coast to Coast or Wall to Wall Sky/ground PFD presentation	No	No	HO	S/T SU TCBI			A	A
31 Indicating/Recording	Selectable advisory Flight Path Vector (FPV) available on Pilot and copilot PFDs if optional IRS is installed With SVS displayed the FPV is defaulted on.	No	Norm		S/T SU TCBI			A	B
31 Indicating/Recording	Synthetic Vision System (SVS) provides situational awareness (advisory) to the crew by adding 3D terrain and runway data superimposed on the PFDs. SVS is pilot selectable.	No	Norm		S/T SU TCBI			B	A
31 Indicating/	Normalized AOA indication on PFD, Advisory only	No	No		S/T SU			A	B

DIFFERENCE AIRCRAFT: Avionics and Performance Upgrades BASE AIRCRAFT: BD-100-1A10				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Recording					TCBI				
31 Indicating/Recording	Readouts, flags, annunciation and messages relocated on PFD and MFD.	No	Norm Abnorm	HO				A	A
34 Navigation	Dual Inertial Reference System (IRS) Replaces the dual Attitude and Heading reference System (AHRS) - Laseref 6 No control panel. Ground alignment is automatic.	No	Minor Normal		S/T SU TCBI			A	A
34 Navigation	Provides True Heading, support to Polar navigation, Immunity to Magnetic distortions, Backup to GPS position in Remote and Oceanic areas,	No	Minor Normal	HO				A	A
34 Navigation	Aircraft is RNP AR > 0.3 capable. Aircraft and pilot authorization required. Specialty Training.	--	--	--				--	--
34 Navigation	Traffic Surveillance System TSS-4100 (TCAS/Transponder) installed. TCAS and ATC controlled from a single LRU. New TCAS audio " Level Off, Level Off" replaces "Adjust Vertical Speed Adjust" s	No	Norm Abnorm	HO				A	A
34 Navigation	Provides future growth for ADS-B Out and ADS B – In. (Not Evaluated)	No	No	HO				A	A
34 Navigation	TCAS control panel changes. Intuitive to pilot.	No	No	HO				A	A
34 Navigation	FMS 6200 replaces V3.0.3 resulting in changes to following pages <ul style="list-style-type: none"> • GNSS Control • Frequency Data • Fix Info • VOR/DME Control • Pos Init • Hold List • Progress • Defaults • Arrival Data • Fuel Management • Nearest Airports • Index • LRN Status • DEP/ARR • Database • RNP RAIM • FPLN PRAIM • SBAS SERVICE PROVIDERS 	No	Norm Abnorm		S/T SU TCBI			A	B
34 Navigation	FMS 6200 auto position initialization from onside GPSS sensor Auto mode armed on DEFAULT page	No	Norm		S/T SU TCBI			A	A
34 Navigation	FMS 6200 <ul style="list-style-type: none"> • Number of characters in route names increases 9 to 10 • Number of Fix Points increases from 5 to 10 • Number of pilot define waypoints 	No	Norm	HO				A	A

DIFFERENCE AIRCRAFT: Avionics and Performance Upgrades BASE AIRCRAFT: BD-100-1A10				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
	increases from 50 to 100								
34 Navigation	FMS 6200 new features <ul style="list-style-type: none"> • TAWS Mode 5 Alert • Auto Position Initialization • Vspeed out of Range messages • ALD operation with contaminated runway • ETP/PNR • Remote (DBU-Initiated) Database Dataload • Manual Landing Factor • Airway to Airway Transitions 	No	Norm		S/T SU TCBI			A	B
34 Navigation	SBAS Localizer Performance with Vertical Guidance (LPV) 0.3 approach with RF legs capable (not AR or SAAAR at this time) SBAS = WAAS and EGNOS Not Applicable if base aircraft has STC for WAAS LPV	No	Norm		S/T SU TCBI			A	B
34 Navigation	Optional SmartRunway and SmartLanding	No	No		S/T SU TCBI			B	B
34 Navigation	Multi-Scan weather radar with turbulence detection Controlled at DCPs and Multiscan™ Radar Menu and annunciations Enhanced ground clutter suppression, allowing usable weather detection on ranges up to 320 nm. Provisions for predictive windshear detection growth.	No	Norm		S/T SU TCBI			A	B
46 Information Systems	Optional Integrated Flight Information System (IFIS) Version 7.0 upgrade. Enhances electronic charts display and satellite graphical weather: <ul style="list-style-type: none"> - new XM weather capabilities for Canada and Puerto Rico. - Split viewing of approach charts - Enroute charts All new capabilities are available via commercial subscription service.	No	Norm		S/T SU TCBI			A	B
70 Powerplant	(Challenger 350 Performance Upgrade) Honeywell Level C engine thrust increases 7.3% at takeoff.	No	Norm	HO				A	A

Unless specified otherwise, the System changes identified in table reflect the differences introduced by the Avionics Upgrade.

ODR Tables from Challenger 300 with Avionics and Performance Upgrades to Challenger 300 without upgrades

DIFFERENCE AIRCRAFT: BD-100-1A10 BASE AIRCRAFT: BD-100 -1A10 Avionics and Performance Upgrades				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Passenger cabin differs in layout and features. Smaller cabin windows	No	No	HO				A	A
Aircraft General	Smaller winglets	No	No	HO				A	A
Limitations	Decreased operating weights: MTOW AFM from 40,600 lb to 38,850 lb MTOW Cert from 40,600 lb to 40,150 lb MLW from 34,150 lb to 33,750 lb MZFW from 28,200 lb to 27,200 lb	No	No	HO				A	A

DESIGN changes identified in table reflect the differences created by the introduction by the 2014 Performance Upgrade.

Differences Aircraft (BD-100-1A10) refers to all aircraft produced before the introduction of the 2013 Avionics Upgrade.

DIFFERENCE AIRCRAFT: BD-100-1A10 BASE AIRCRAFT: BD-100 -1A10 Avionics and Performance Upgrades				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
22 AFCS	½ bank allowed in LNav mode below normal transition of 31,600 ft.	No	Norm	HO				A	A
22 AFCS	Go-Around or missed approach. If LNav is engaged prior to selection of TOGA, AFCS guidance defaults to ROLL or TO mode.	No	Norm		S/T SU TCBI			B	B
23 Comm	No CPLC (FANS1A+, ADS-C)	No	Norm	HO				A	A
31 Indicating/Recording	Traditional ADI and HSI presentation on PFD	No	No	HO				A	A
31 Indicating/Recording	No selectable advisory Flight Path Vector (FPV) available on Pilot and copilot PFDs	No	No	HO				A	A
31 Indicating/Recording	No Synthetic Vision System (SVS)	No	No	HO				A	A
31 Indicating/Recording	No advisory AOA indication on PFD,	No	No	HO				A	A
31 Indicating/Recording	Readouts, flags, annunciation and messages relocated on PFD and MFD.	No	Norm Abnorm	HO				A	A
34 Navigation	Dual Attitude and Heading reference System (AHRS) installed with control panel. Ground alignment is not automatic. No optional Dual Inertial Reference System (IRS)	No	Norm		S/T SU TCBI			B	A
34 Navigation	No True Heading support to Polar navigation; immunity to Magnetic	No	Minor Normal	HO				A	A

DIFFERENCE AIRCRAFT: BD-100-1A10 BASE AIRCRAFT: BD-100 -1A10 Avionics and Performance Upgrades				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
	distortions nor backup to GPS position in Remote and Oceanic areas,								
34 Navigation	Aircraft is RNP AR > 0.3 capable. Aircraft and pilot authorization required. Specialty Training. Not evaluated	--	--	--				--	--
34 Navigation	TCAS and ATC separate controls. New TCAS audio "Adjust Vertical Speed" vice Level Off, Level Off"	No	Norm Abnorm	HO				A	A
34 Navigation	No ADS-B Out and ADS B – In growth capability.	No	No	HO				A	A
34 Navigation	TCAS control panel changes. Intuitive to pilot.	No	No	HO				A	A
34 Navigation	FMS V3.0.3 installed instead of FMS 6200. This has resulted in changes to following pages <ul style="list-style-type: none"> • GNSS Control • Frequency Data • Fix Info • VOR/DME Control • Pos Init • Hold List • Progress • Defaults • Arrival Data • Fuel Management • Nearest Airports • Index • LRN Status • DEP/ARR • Database • RNP RAIM • FPLN PRAIM • SBAS SERVICE PROVIDERS 	No	Norm Abnorm		S/T SU TCBI			A	B
34 Navigation	No FMS auto position initialization from onside GPSS sensor	No	Norm		S/T SU TCBI			A	A
34 Navigation	FMS V3.0.3 <ul style="list-style-type: none"> • Number of characters in route names decreases from 10 to 9 • Number of Fix Points decreases from 10 to 5 • Number of pilot define waypoints decreases from 100 to 50 	No	Norm	HO				A	A
34 Navigation	FMS V3.0.3 does not support <ul style="list-style-type: none"> • TAWS Mode 5 Alert • Auto Position Initialization • Vspeed out of Range messages • ALD operation with contaminated runway • ETP/PNR • Remote (DBU-Initiated) Database Dataload • Manual Landing Factor • Airway to Airway Transitions 	No	No	HO				A	A
34 Navigation	SBAS LPV available only via STC.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: BD-100-1A10 BASE AIRCRAFT: BD-100 -1A10 Avionics and Performance Upgrades				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
34 Navigation	No Optional SmartRunway and SmartLanding	No	No	HO				A	A
34 Navigation	Weather radar not multi-scan technology	No	Norm	HO				A	A
46 Information Systems	No optional Integrated Flight Information System (IFIS) Version 7.0 upgrade.	No	Norm		S/T SU TCBI			A	B
70 Powerplant	(Challenger 300 engine 7.3 % decrease in takeoff thrust when compared to performance upgrade;	NO	Norm	HO				A	A

Unless specified otherwise, the System changes identified in table reflect the differences introduced by the Avionics Upgrade.