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Flight Standardization Board Report

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Manufacturer:
Bombardier
CL-600-2B19 (CRJ100/200/440) CL-600-2C10 (CRJ700/701/702),
CL-600-2C11 (CRJ550) CL-600-2D15 (C705), CL-600-2D24
(CRJ900)

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1. RECORD OF REVISIONS

Revision Number	Section(s)	Page(s) Affected	Date
Original	All	All	11/30/1992
1	All	All	02/16/2001
2	1 thru 13, Appendices 1, 2, 5, and 6	1 thru 62, 97 thru 174	12/10/2002
3	All	All	10/07/2005
4	Appendix 7	205 thru 210	10/25/2006
5	Appendix 7	221 thru 225	03/03/2009
6	Appendix 8	226 thru 227	12/19/2016
7	All	All	12/11/2019

2. HIGHLIGHTS OF CHANGE

Revision 4: This report is a minor revision to the Flight Standardization Board (FSB) report. This revision adds Models CL-600-2D15 and CL-600-2D24 to Appendix 7. Pagination errors and table of contents were corrected.

Revision 5: Revision 5 revises Appendix 7 to bring the nomenclature and training standards up to current language and techniques standards.

Revision 6: Revision 6 identifies Regulatory Training Requirements which are not applicable to the CL-600 2B19, CL-600-2C10, CL-600-2D15, and CL-600-2D24

Revision 7: Revision 7 is a minor revision to the FSB report. This revision adds Model CL-600-2C11 throughout the document.

3. PURPOSE AND APPLICABILITY

3.1 Basis. The purpose of this report is to specify Federal Aviation Administration (FAA) master training, checking, and currency requirements applicable to crews operating Bombardier Aerospace (BA) Model CL-600 2B19 (CRJ100/200), Model CL-600-2C10 (CRJ700), Model CL-600-2C11 (CRJ550), Model CL-600-2D24 (CRJ900), and Model CL-600-2D15 (CRJ705) airplanes. The CL-600-2C10 and CL-600-2C11 are variations of the CL-600-2B19 and have not been significantly altered except for a fuselage plug, leading edge slats, and full-authority digital engine control (FADEC) engines. The CL-600-2D24 is a variation of the CL-600-2B19 and has not been significantly altered except for two fuselage plugs, leading edge slats, FADEC engines, and two additional overwing exits. In 2005, Bombardier added wing and airframe performance improvements to the Model CL-600-2D24 and ceased production of earlier CRJ-900 versions. The CL-600-2D15 is type-certified as a 75-seat version of the improved CRJ-900 airplane. It is identical to the CL-600-2D24 in all other aspects. This report will aid Title 14 of the Code of Federal Regulations (14 CFR) part 121 or 125 operators, FAA Principal Operations Inspectors (POI), and 14 CFR part 142 training centers and their FAA Training Center Program Managers (TCPM) in the

development and approval of parts 121 and 142 training programs. Provisions of this report are effective until amended, superseded, or withdrawn by subsequent FSB determinations.

3.2 Provisions. This report also addresses certain issues regarding the operation of the Bombardier CL-600-2B19 (CRJ100/200), CL-600-2C10 (CRJ700), CL-600-2C11 (CRJ550), CL-600-2D24 (CRJ900), and CL-600-2D15 (CRJ705) other than under part 121 (i.e., Pilot Type Rating). Provisions of the report include:

- a) Definition of the pilot type rating;
- b) Description of “Master Common Requirements” (MCR);
- c) Description of “Master Differences Requirements” (MDR) for crews requiring differences qualification for mixed fleet flying or transition;
- d) Examples of acceptable “Operator Difference Requirements” (ODR) tables;
- e) Description of an acceptable training program and device characteristics when necessary to establish compliance with pertinent MDRs;
- f) Setting checking and currency standards, including specification of those checks that must be administered by the FAA or operators; and
- g) A listing of regulatory compliance status (compliance checklist) for 14 CFR parts 91, 121, and 125, advisory circulars (AC), and other operationally related criteria that was reviewed and evaluated by the Aircraft Evaluation Group (AEG) or FSB. Title 14 CFR part 135 was not evaluated by the FSB as it was determined to not be applicable.

3.3 Additional Provisions. This report also provides:

- a) Minimum pilot training requirements that must be applied by the appropriate Flight Standards offices (e.g., MDRs and type rating designations);
- b) Information which is advisory in nature, but may be mandatory for particular operators if the designated configurations apply and if approved for that operator (e.g., MDR footnotes and acceptable ODR Tables); and
- c) Information, which is used to facilitate FAA review of an airplane type, proposed for use by an operator. Various sections within this report are qualified as to whether compliance (considering the provisions of AC 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations) is required or is advisory in nature.

4. ACRONYMS

Relevant acronyms are defined as follows:

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- AC Alternating Current
- ACFT Aircraft
- ACPC Alternating Current Power Center
- ACS Airman Certification Standards
- ADC Air Data Computer
- ADG Air-Driven Generator
- AEG Aircraft Evaluation Group
- AFCS Automatic Flight Control System
- AFM Airplane Flight Manual
- AGL Above Ground Level
- AOA Angle of Attack
- AP Autopilot
- APR Automatic Power Reserve
- APU Auxiliary Power Unit
- ATP Airline Transport Pilot
- ATS Air Turbine Starter
- BA Bombardier Aerospace
- BITE Built-In Test Equipment
- CAT Category
- CB Circuit Breaker
- CBT Computer-Based Training
- CFIT Controlled Flight Into Terrain
- CG Center of Gravity
- CLB Climb
- CMO Certificate Management Office
- CPT Cockpit Procedures Trainer
- CRZ Cruise
- CSS Cockpit System Simulators
- DC Direct Current
- DCPC Direct Current Power Center
- DH Decision Height
- ECS Environmental Control System
- ECU Electronic Control Unit
- EDP Engine-Driven Pump
- EFIS Electronic Flight Instrument System
- EGPWS Enhanced Ground Proximity Warning System
- EICAS Engine Indicating and Crew Alerting System
- ER Extended Range
- FAA Federal Aviation Administration
- FADEC Full-Authority Digital Engine Control

• FAF	Final Approach Fix
• FCP	Flight Control Panel
• FD	Flight Director
• FFS	Full Flight Simulator
• FL	Flight Level
• FLX	Flex
• FMA	Flight Mode Annunciator
• FMS	Flight Management System
• FSB	Flight Standardization Board
• FSDO	Flight Standards District Office
• FSIMS	Flight Standards Information Management System
• FSTD	Flight Simulation Training Device
• FTD	Flight Training Device
• GA	Go-Around
• GCU	Generator Control Unit
• GEN	Generator
• GLD	Ground Lift Dumper
• GPS	Global Positioning System
• GTOW	Gross Takeoff Weight
• HCP	Head-Up Guidance Control Panel
• HGS	Head-Up Guidance System
• HO	Handout
• ICBI	Interactive Computer-Based Instruction
• ILS	Instrument Landing System
• IMC	Instrument Meteorological Conditions
• IRU	Inertial Reference Unit
• KIAS	Knots Indicated Airspeed
• kVA	Kilovolt-Ampere
• LOFT	Line-Oriented Flight Training
• LR	Long Range
• LVTO	Low Visibility Takeoff
• MCR	Master Common Requirement
• MCT	Maximum Continuous Thrust
• MDC	Main Display Console
• MDR	Master Differences Requirement
• MEL	Minimum Equipment List
• MFD	Multifunction Display
• MLW	Maximum Landing Weight
• M _{MO}	Maximum Operating Limit Speed
• MRW	Maximum Ramp Weight
• MTOW	Maximum Takeoff Weight
• MZFW	Maximum Zero Fuel Weight
• N ₁	Rotational Speed of the Low-Pressure Compressor in a Dual-Spool Gas Turbine Engine
• N ₂	Rotational Speed of the High-Pressure Compressor in a Dual-Spool Gas Turbine Engine

• NSP	National Simulator Program
• NWS	Nosewheel Steering
• ODR	Operator Difference Requirement
• OE	Operating Experience
• OEI	One-Engine-Inoperative
• OpSpec	Operations Specification
• OVHT	Overheat
• PBA	Push Button Assembly
• PCU	Power Control Unit
• PF	Pilot Flying
• PFD	Primary Flight Display
• PIC	Pilot in Command
• PM	Pilot Monitoring
• POI	Principal Operations Inspector
• PTT	Part Task Trainer
• RVR	Runway Visual Range
• SE	Single Engine
• SIC	Second in Command
• SLD	Supercooled Large Droplet
• SLF	Supervised Line Flying
• SMGCS	Surface Movement Guidance and Control System
• SOV	Shut-Off Valve
• SSCU	Spoiler Stabilizer Control Unit
• ST	Slide/Tape Presentations
• STC	Supplemental Type Certificate
• Std	Standard
• SU	Stand-Up Instructors
• TC	Type Certificate
• TCBI	Tutorial Computer-Based Instruction
• TCAS	Traffic Alert and Collision Avoidance System
• TCPM	Training Center Program Manager
• TO	Takeoff
• T/R	Thrust Reverser
• TRU	Transformer-Rectifier Unit
• V ₁	Takeoff Decision Speed
• V ₂	Takeoff Safety Speed
• V _A	Design Maneuvering Speed
• V _{FE}	Maximum Flap-Extended Speed
• V _{FTO}	Final Takeoff Speed
• VMC	Visual Meteorological Conditions
• VOR	Very High Frequency Omni-Directional Range
• V _{REF}	Reference Landing Speed
• VT	Video Tapes

5. PILOT TYPE RATING REQUIREMENTS

- 5.1 Type Rating.** In accordance with the provisions of 14 CFR parts 1, 61, and 121, the same pilot type rating is assigned to the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15, and is designated “CL-65”.
- 5.2 Separate Type Ratings.** The CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 are not considered variations or derivatives of the Bombardier Challenger airplanes (CL-600-1A11 (CL-600), CL-600-2A12 (CL-601/601-3A/-3R), and CL-600-2B16 (CL-604) for pilot type rating purposes.

6. MASTER COMMON REQUIREMENTS (MCR)

- 6.1 MCRs For All CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 Airplanes.**

- 6.1.1 Aircraft Approach Categories (14 CFR Part 97, § 97.3).

Aircraft	Landing Flap	Category
CL-600-2B19	45°	D
CL-600-2C10	45°	C
CL-600-2C11	45°	C
CL-600-2D24	45°	C/D
CL-600-2D15	45°	C/D

- 6.1.2 Aircraft Versions. The CL-600-2D24 and CL-600-2D15 aircraft are offered in three versions: standard (Std), extended range (ER), and long range (LR). The reference landing speed (V_{REF}) at the Maximum Landing Weight (MLW) associated with the Std and ER versions satisfies Category C requirements. The LR version has an increased MLW, such that its associated V_{REF} brings the airplane to approach Category D. A supplementary Airplane Flight Manual (AFM) short field landing procedure that utilizes a reduced V_{REF} will be available to the operators as an option. When utilized, the approach speed associated with the MLW satisfies the Category C requirement for the LR aircraft.

- 6.1.3 Normal Final Flap Setting (Part 91, § 91.126(c)). The normal “final flap setting” is 45°.

6.1.4 Maximum Flap-Extended Speed (V_{FE}). The CL-600-2B19 does not have leading edge slats. The CL-600-2C10, CL-600-2C11 flap extension speeds are listed in the table below:

Flap Setting (degrees)	CL-600-2B19	CL-600-2C10/2C11	CL-600-2D24	CL-600-2D15
1°	N/A	230 KIAS	230 KIAS	230 KIAS
8°	230 KIAS	230 KIAS	230 KIAS	230 KIAS
20°	230 KIAS	230 KIAS	220 KIAS	220 KIAS
30°	185 KIAS	185 KIAS	185 KIAS	185 KIAS
45°	170 KIAS	170 KIAS	170 KIAS	170 KIAS

6.1.5 Minimum Height for Use of the Autopilot (AP) (Part 121, § 121.579).
The minimum height for the use of the AP following takeoff is 600 ft above ground level (AGL).

6.1.6 Procedure Knowledge.

6.1.6.1 Takeoff Profiles. The takeoff profiles are similar for all five aircraft.

NOTE: The only takeoff profile procedural difference between the five models is that the CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 have one additional callout: “flaps 1” for flap retraction.

7. MASTER DIFFERENCES REQUIREMENTS (MDR)

MDRs for the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 are shown in Appendix 1, MDR Table. Appendix 1 provisions apply when differences between variations exist which affect crew knowledge, skills, or abilities related to flight safety (e.g., Level A or greater differences).

8. ACCEPTABLE OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLES

8.1 ODR Tables Used to Show an Operator’s Compliance Method. Acceptable ODR tables for operators conducting mixed fleet operations, using the particular combination of CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 variations evaluated are shown in Appendix 2, Acceptable ODR Tables. The ODR tables represent an acceptable means to comply with MDR provisions for the airplanes evaluated based on those differences and compliance methods shown. The tables do not necessarily represent the only acceptable means of compliance for operators with

airplanes having other differences, where compliance methods (e.g., flight simulation training devices (FSTD)) are different, or for combinations of airplanes not evaluated. For operators flying variations, which are the same as the airplanes used for the ODR table development, and using the same compliance methods, the ODR tables in Appendix 2 have been found acceptable, and therefore, may be approved by a POI for a particular operator.

NOTE: Criteria used to identify differences, as indicated in Appendices 1 and 2, does not take into consideration training differences that may exist between variations for maneuvers required by § 121.423.

- 8.2 Operator Preparation of ODR Tables.** Operators flying mixed fleet variations with differences not shown on or addressed by the acceptable ODR tables attached in Appendix 2, or operators seeking different means of compliance, must prepare and seek FAA approval from their POI of specific ODR tables pertinent to their fleet. The POI should coordinate this with the FSB Chairman.
- 8.3 ODR Table Coordination.** New ODR tables proposed by operators should be coordinated with the FSB prior to FAA approval and implementation. Through this coordination, the FSB can ensure consistent treatment of variations between various operators' ODR tables and compatibility of the MDR table with MDR provisions.
- 8.4 ODR Table Distribution.** Originally approved ODR tables are retained by the operator. Copies of approved CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D15, and CL-600-2D24 ODR tables are retained by the certificate management office (CMO). Copies of all approved ODR tables should be forwarded to the FSB Chairman at the Transport Aircraft Long Beach AEG.

9. FSB SPECIFICATIONS FOR TRAINING

9.1 General.

- 9.1.1 **Airman Experience.** The provisions of this section of the report apply to programs for airmen having previous experience in part 121 or 135 air carrier operations and multiengine transport turbojet or turboprop aircraft. Additional requirements, as determined by the operator's POI, the FSB, and the Air Transportation Division may be necessary for airmen not having such experience.
- 9.1.2 **CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 Full Course (Initial) Programs.** POIs of operators initially introducing a CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, or CL-600-2D15 aircraft may approve programs consistent with programs previously approved. However, when such programs are approved, operators should be aware that if variations are to be added or differences are to be introduced, ODR table development and FAA approval is necessary prior to operation of those airplanes with differences. For information regarding

previously approved programs, FAA PIs of other existing CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 operators may be consulted. In the event of uncertainty regarding evaluation of a proposed program, the FSB Chairman should be consulted.

9.2 Initial, Transition, and Upgrade Training.

9.2.1 Pilots: Initial, Transition, and Upgrade Ground Training (§ 121.419). Initial, transition, or upgrade ground training for the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24 and CL-600-2D15 is accomplished as specified by § 121.419. No unique provisions or requirements are specified. However, if mixed fleet flying with multiple variations, appropriate instruction in systems differences will be required for all variations, consistent with MDR provisions. Training program hours may be reduced as specified in § 121.405, but not in a manner that invalidates compliance with MDR provisions.

9.2.2 Pilots: Initial, Transition, and Upgrade Flight Training (§ 121.424). Initial, transition, or upgrade flight training for the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 is accomplished as specified by § 121.424. No unique provisions or requirements are specified. However, if mixed fleet flying with multiple variations, appropriate flight training to suitably address all variations is required, consistent with MDR provisions. Training program hours may be reduced as specified in § 121.405, but not in a manner which invalidates compliance with MDR provisions.

9.2.3 Areas of Emphasis. The FSB has identified several airplane systems and/or procedures that should receive special emphasis in an approved CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 training program.

9.2.3.1 During Systems Integration Training:

- a) Flight Control Panel (FCP).
- b) Flight Mode Annunciator (FMA).
- c) Flight management system (FMS).
- d) Engine (or thrust) mode annunciator.
- e) FADEC (if applicable).

9.2.3.2 During Flight Training (Full Flight Simulator (FFS) or Airplane):

- a) Aileron power control unit (PCU) runaway.
- b) Dual hydraulic system malfunctions (System 1 or 2 and 3).
- c) Air-driven generator (ADG) deployment.
- d) Dutch roll (with yaw dampers operative and inoperative):
 - 1) High altitude/slow speed.
 - 2) 10,000 ft/landing configuration.

- e) Instrument Landing System (ILS) approach on standby instruments.
- f) Landing with ground lift dumpers (GLD) not deployed.
- g) Balked landing/low energy go-around.
- h) Effects of wing leading edge contamination.
- i) Inadvertent thrust reverser (T/R) deployment.
- j) Wind shear.
- k) Hazardous weather and winter operations.
- l) Primary flight display (PFD), multifunction display (MFD), Engine Indicating and Crew Alerting System (EICAS) reversionary modes.
- m) Global Positioning System (GPS) (if applicable).
- n) Head-Up Guidance System (HGS) (if applicable).
- o) Enhanced ground proximity warning system (EGPWS).
- p) Traffic Alert and Collision Avoidance System (TCAS).

9.2.4 Training for Seat-Dependent Tasks. Accomplishment of certain tasks, procedures, or maneuvers require training of a crewmember for a particular crew seat position. Training programs should recognize and address the necessary seat-dependent tasks for the applicable crewmembers. See Appendix 8, Non-Applicability Regulatory Training Requirements.

9.2.5 Special Event Training. Special event training is recommended for the CL-600-2B19, CL-600-2C10/2C11, CL-600-2D24, and CL-600-2D15. Such training should be conducted to improve basic crewmember understanding and confidence regarding airplane handling qualities, options, and procedures as these relate to design characteristics and limitations. Examples of this training could include the following:

- a) Recovery from unusual attitudes.
- b) Handling qualities and procedures during recovery from an upset condition (e.g., wake vortex encounter).
- c) Operation of aircraft in icing environments, including Supercooled Large Droplet (SLD) events.

9.2.6 Controlled Flight Into Terrain (CFIT). Due to continued industry efforts to reduce exposure to CFIT accidents, special emphasis on this topic is appropriate. Emphasis on altitude awareness, EGPWS warnings, situational awareness, and crew coordination is appropriate.

9.2.7 HGS. See Appendix 7, Head-Up Guidance System (HGS): CL-600-2B19, CL-600-2C10, CL-600-2D15, CL-600-2D24.

9.3 Differences Training (§ 121.418). Differences training is necessary for qualification in each variation, as shown in the MDR, unless an initial or transition program is completed for each variation. A training program addressing pertinent differences described by individual ODRs, including normal, non-normal, and alternate

operations is required for each variation flown. Samples of acceptable ODR tables are shown in Appendix 2.

9.4 Recurrent Training (§ 121.427). Recurrent training must include appropriate training in accordance with § 121.427 for each variation. Recurrent training must be in accordance with the initial differences training specified by MDR and ODR tables unless otherwise approved by the POI.

9.4.1 Recurrent Ground Training Time Reductions. If recurrent ground training is reduced below programmed hours required in § 121.427(c), in accordance with § 121.405, such reductions must be consistent with MDR and ODR table provisions.

9.4.2 Recurrent Flight Training. Recurrent flight training requires appropriate maneuvers and procedures identified in part 121 appendix F or as otherwise described in this report. Maneuvers and procedures addressed must account for each variation operated. ODR table provisions identify differences in maneuvers or procedures between variations, which must be addressed in the operator's recurrent program. As permitted by § 121.441, satisfactory completion of a proficiency check in accordance with part 121 appendix F may be substituted for training.

9.5 Other Training.

9.5.1 Flight Attendant Initial and Transition Ground Training. This training should be accomplished in accordance with § 121.421. Initial and transition ground training must include a competence check to determine flight attendant ability to perform assigned duties and procedures on the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 airplanes. The competence check must address any difference in doors, slides, communications, and each piece of emergency equipment and each emergency procedure unique to each variation.

NOTE: For Model CL-600-2B19, aircraft prior to Serial No. 7457 have main passenger entry doors that open somewhat slower than main passenger entry doors on aircraft Serial No. 7457 and subsequent. The aircraft Serial No. 7457 and subsequent door design is known as a "Phase IV" door, which will touch the ground approximately 10 seconds after being opened. All Models CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 aircraft have Phase IV passenger doors.

9.5.2 Aircraft Dispatcher Initial and Transition Ground Training. This training should be accomplished for each variation in accordance with § 121.422. Where variations have different performances, procedures, or limitations (i.e., flex thrust, Category (CAT) III), dispatchers must be trained to suitably address those differences.

- 9.5.3 Operating Experience (OE). OE should be accomplished in accordance with § 121.434.
- 9.5.4 Line-Oriented Flight Training (LOFT) (§ 121.409(b)(2)(ii)). When operators have LOFT programs and variations are approved, POIs must review the LOFT programs to ensure applicability for each variation.

10. FSB SPECIFICATIONS FOR CHECKING

10.1 General.

- 10.1.1 Checking Items. Knowledge, procedures, and maneuvers specified by part 61, part 121 appendix F, FAA Order 8900.1, Flight Standards Information Management System (FSIMS), or Airman Certification Standards (ACS) pertinent to multiengine turbojet transport aircraft apply. Part 121 checking items are accomplished as specified by MDRs and ODRs to qualify in pertinent variations. Equivalent part 135 training and checking provisions apply to the CL-600-2B19.
- 10.1.2 Areas of Emphasis. The following areas of emphasis should be demonstrated during checking:
 - 10.1.2.1 Proficiency in manual and automatic flight in normal, abnormal, and emergency situations must be demonstrated at each proficiency check by all crewmembers; and
 - 10.1.2.2 The use of manual system modes (i.e., electrical, fuel, hydraulics, pressurization, etc.) and backup equipment (i.e., ADG) must be demonstrated at each proficiency check by all crewmembers.
- 10.1.3 No-Flap Approaches and Landings. Demonstration of a no-flap approach and landing during a part 61 or part 121 appendix F check is required per the Airline Transport Pilot and Type Rating for Airplane ACS. The “Flap 1” (Slats 20/Flaps 0) position should be used for this demonstration in the CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15. In accordance with Order 8900.1, when the flight demonstration is conducted in an airplane, versus an FFS, touchdown from a no flap approach is not required. The approach must be flown to the point where the inspector or examiner can determine whether the landing would or would not occur in the touchdown zone.

10.2 Type Ratings.

- 10.2.1 Oral and Written Tests. Unless otherwise specified by ODR tables, an oral or written portion of a type rating practical test needs to only address the variation to be flown or to be used to conduct the test as determined by the inspector or examiner conducting the test.

10.2.2 CL-65 Pilot Type Rating. Airmen may complete the practical test in any variation for issuance of a “CL-65” pilot type rating. However, before airmen serve under part 121 in a variation other than that in which a type rating practical test was completed, checking for differences in accordance with MDR provisions must be completed.

10.3 Additional Factors for Practical Tests for Applicants Not Employed under Part 121. A practical test for an applicant not employed under part 121 (e.g., issuance of a type rating under part 61 or 142) must be conducted in a variation that the applicant was trained under.

10.4 Proficiency Checks.

10.4.1 General. Proficiency checks are administered as designated in § 61.58 or § 121.441 and part 121 appendix F. Each check should assess knowledge and acceptable levels of skill, considering the variations flown and crew position. Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in § 121.433(c).

10.4.2 Alternating Proficiency Checks for CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15. For mixed fleet flying proficiency, checks should alternate between variations every 6 months for pilot in commands (PIC) and annually for other flightcrew members. The CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 may be considered as one variation for alternating proficiency checks with the CL-600-2B19. In other words, a pilot may take a proficiency check in the CL-600-2B19, then, 6 months later, take a proficiency check in either the CL-600-2C10, CL-600-2C11, CL-600-2D24, or CL-600-2D15, or vice versa. When such alternating airplane checks are accomplished, the differences may be satisfied by ground training, a written questionnaire, an oral review, or other method approved by the POI. However, such simplified programs may not be approved if they result in progressive loss of knowledge or skills related to particular differences over successive recurrent periods.

10.4.3 Section 61.58 Proficiency Checks Which Do Not Pertain to Part 121. Proficiency checks which may be required in accordance with § 61.58, but do not pertain to part 121 operations, should be administered using the same variation as the airplane intended to be flown (e.g., an airman intending to fly a CL-600-2B19 should take a proficiency check in a CL-600-2B19 FFS).

10.4.4 HGS. When HGS use is approved, checking must include suitable demonstration of HGS use for modes and phases of flight authorized. Checking standards for HGS are equivalent to those for non-HGS operations. Periodic assessment of non-HGS skills should also be demonstrated. Therefore, each check pilot or inspector may request that authorized maneuvers be performed without use of HGS (e.g., if manual CAT II

operations are authorized, the airman being checked may be requested to perform the maneuver without HGS). See Appendix 7.

11. FSB SPECIFICATIONS FOR CURRENCY

Currency (Recency of Experience) is in accordance with § 121.439. Currency is considered to be common for the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15. Separate tracking of currency for the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 is not necessary or applicable.

12. AIRCRAFT REGULATORY COMPLIANCE CHECKLIST

12.1 Compliance Checklists (Appendices 3, 4, 5, and 6). Compliance checklists are provided as an aid to FAA CMOs to identify those specific rules or policies for which compliance has already been demonstrated to the FAA for a particular type or variation. The checklist also notes rules or policies that remain to be demonstrated to CMOs by operators. Not all rules, policies, or variations are necessarily listed or addressed. When differences exist between the variations evaluated with the compliance checklist and variations used by an operator, the CMO must evaluate those differences and approve use of the variations, if that variation provides compliance with 14 CFRs and FAA policies. It remains the responsibility of the operator to show compliance to their Flight Standards District Office (FSDO) or CMO. It is the responsibility of the FSDO or CMO to review compliance with pertinent rules and policies not addressed in the compliance checklists shown in Appendix 3, 4, 5, or 6, prior to part 121 or 125 approval of an operator for use of the CL-600-2B19, CL-600-2C10/2C11, CL-600-2D24, or CL-600-2D15. Part 135 was not evaluated by the FSB, as it was determined to not be applicable.

12.2 Discussion of Specific Compliance Checklist Items.

12.2.1 Emergency Evacuation. All the listed emergency evacuation findings accomplished under simulated demonstration were completed in accordance with § 125.803 and are credited under § 121.291 for configurations and passenger capacities specified below.

- a) CL-600-2B19. This aircraft model has demonstrated under simulated full-scale emergency evacuation tests successful evacuation of 50 passengers and three crewmembers (two pilots and one flight attendant). Accordingly, an additional § 121.291 full-scale evacuation is not necessary for airplane configurations consistent with previously approved tests. Passenger capacity less than or equal to the previously demonstrated capacity may be authorized. A partial evacuation is required unless the particular certificate holder has previously operated a CL-600-2B19 with the same or similar interior and exit configuration.

- b) CL-600-2C10/11. These aircraft model have demonstrated under simulated full-scale emergency evacuation tests successful evacuation of 78 passengers and four crewmembers (two pilots and two flight attendants). Accordingly, an additional § 121.291 full-scale evacuation is not necessary for airplane configurations consistent with previously approved tests. Passenger capacity less than or equal to the previously demonstrated capacity may be authorized. A partial evacuation is required unless the particular certificate holder has previously operated a CL-600-2C10 with the same or similar interior and exit configuration.
- c) CL-600-2D24. This aircraft model has demonstrated under simulated full-scale emergency evacuation tests successful evacuation of 90 passengers and four crewmembers (two pilots and two flight attendants). Accordingly, an additional § 121.291 full-scale evacuation is not necessary for airplane configurations consistent with previously approved tests. Passenger capacity less than or equal to the previously demonstrated capacity may be authorized. A partial evacuation is required unless the particular certificate holder has previously operated a CL-600-2D24 with the same or similar interior and exit configuration.
- d) CL-600-2D15. This aircraft model is identical to the CL-600-2D24 with the exception that it is certified for 75 passengers only. A partial evacuation is required unless the particular certificate holder has previously operated a CL-600-2D24 with the same or similar interior and exit configuration.

12.2.2 Proving Tests (§ 121.163(c)). The CL-600-2C10, CL-600-2D24, and CL-600-2D15 are considered variations of the CL-600-2B19 and have not been significantly altered except for fuselage plugs, leading edge slats, and FADEC engines. Proving tests in accordance with § 121.163(b) are appropriate in accordance with Order 8900.1, Volume 3, Chapter 29, Proving and Validation Tests, when the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, or CL-600-2D15 is new to a particular operator. When an operator is currently operating the CL-600-2B19, CL-600-2C10, CL-600-2C22, CL-600-2D24, or CL-600-2D15 and the operator introduces a variation into the same operations, proving tests are not required. Proving test requirements and reductions are as designated by Order 8900.1 and the CMO, or as otherwise specified by the FSB or the Air Transportation Division.

13. FSB SPECIFICATIONS FOR FSTDs

13.1 Characteristics. FSTD characteristics pertinent to the CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 are as specified by 14 CFR part 60, § 121.407, part 121 appendix H, and AC 120-53, except as described below. Tutorial computer-based instruction (TCBI) and interactive computer-based instruction (ICBI) are referenced in Appendix 2.

13.2 Use of Flight Training Devices (FTD) for Specific Check or Evaluation Items.

Certain airline transport pilot (ATP), type rating, or proficiency check/evaluation items may be completed in FAA-qualified FTDs. This is appropriate for items such as FMS initialization or engine start non-normals. Specific checking credit in such instances must be approved by the POI.

13.3 FSTD Compatibility (§ 121.407). When variations are flown in mixed fleets, the combination of FSTDs used to satisfy MDR or ODR provisions must match specific variations flown by that operator. The acceptability of differences between FTDs, FFSs, and aircraft operated must be addressed by the POI.

13.4 FTD Approval. Requests for device approval should be made to the POI. If device characteristics clearly meet established FAA criteria and are qualified, the POI may approve those devices for that carrier. Where devices do not clearly satisfy a given level, POIs should request advice from the FSB Chairman (AEG), National Simulator Program (NSP), or the Air Transportation Division.

13.5 Door Trainers. Training in accordance with § 121.417 must be conducted on an airplane or in a training device representative of the operator's fleet configuration.

14. APPLICATION OF FSB REPORT

All relevant parts of this report are applicable to operators on the approval date of this report.

15. MISCELLANEOUS

The CL-600-2B19, CL-600-2C10, CL-600-2C11, CL-600-2D24, and CL-600-2D15 have not been evaluated for Extended Operations (ETOPS) in accordance with AC 120-42, Extended Operations (ETOPS and Polar Operations).

APPENDIX 1. MDR TABLE

Master Differences Requirements (MDR) Table					
AIRPLANE TYPE RATING: CL-65		FROM AIRPLANE			
T O A I R P L A N E		CL-600-2B19	CL-600-2C10/2C11	CL-600-2D15	** CL-600-2D24
	CL-600-2B19	----	C/C/B	C/C/B	C/C/B
	CL-600-2C10/2C11	C/C/B	A/A/A	A/A/A	A/A/A
	CL-600-2D15	C/C/B	A/A/A	----	A/A/A
	CL-600-2D24	C/C/B	A/A/A	A/A/A	----

** The CRJ Series 900 entered service in 2002. In 2005, an upgraded version of the CRJ Series 900 was introduced as the production model and the older version was discontinued. This report addresses both versions of the CRJ Series 900 aircraft.

NOTE: Operators are encouraged to provide a minimum of three flight legs of Supervised Line Flying (SLF) in the case of pilots transitioning from the CL-600-2B19 to the CL-600-2C10, CL-600-2C11, CL-600-2D24, or CL-600-2D15; and from the CL-600-2C10, CL-600-2D24, or CL-600-2D15 to the CL-600-2B19. This is to permit pilots to obtain additional OE in the differences in cockpit heights, approach attitudes, and landing characteristics, which are a result of different fuselage lengths, landing weights, and landing gear design. SLF is not accomplished until after a crewmember is trained and, if applicable, checked to perform duties for that particular crew position. Supervision is by an airman qualified to conduct the SLF and is typically a check pilot. SLF is not accomplished from the forward observer's seat.

APPENDIX 2. ACCEPTABLE ODR TABLES

Definitions	ODR Training Level
“HO” = Handout	A
“ST” = Slide/tape presentations “TCBI” = Tutorial computer-based instruction “SU” = Stand-Up Instructors “VT” = Video tapes	B
“ICBI” = Interactive computer-based instruction “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 A or B)	D
“FFS C-D” = Full flight simulators (Level C or D) “ACFT” = Aircraft	E
<p><u>NOTES:</u></p> <p>“C*” in the Checking column of the ODR tables requires use of training devices specified in “TRAINING LVL C” column of ODR table.</p> <p>More ODR Checking Level definitions may be found in AC 120-53.</p> <p>An “X” in the table column indicates that any of the training methods listed for that level are acceptable. If a specific instruction method is specified in the table column, it must be used.</p>	

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> • 106 ft, 8 in (32.51 m). • Increase of 18 ft, 10 in (5.74 m). Wingspan: <ul style="list-style-type: none"> • 76 ft, 3 in (23.25 m). • Increase of 6 ft, 9 in (2.04 m). Tail span: <ul style="list-style-type: none"> • 28 ft (8.54 m). • Increase of 7 ft, 8 in (2.34 m). Height: <ul style="list-style-type: none"> • 24 ft, 10 in (7.57 m). • Increase of 4 ft, 2 in (1.27 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> Maximum Takeoff Weight (MTOW): <ul style="list-style-type: none"> • 75,000 lb (34,020 kg). • Increase of 22,000 lb (9,979 kg). MLW: <ul style="list-style-type: none"> • 67,000 lb (30,390 kg). • Increase of 20,000 lb (9,072 kg). Fuel Capacity: <ul style="list-style-type: none"> • 2,902 U.S. gal (10,977 L). • Increase of 751 gal (2,835 L). 	No	No	HO				A	B
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> • 13 ft, 6 in (4.0 m). • Increase of 3 ft, 2 in (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> • 40 ft, 10 in (12.44 m). • Increase of 4 ft, 6 in (1.37 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> • GE CF34-8C1 or GE CF34-8C5B1. • 13,790 lb of thrust, automatic power reserve (APR). • Increase of 4,570 lb of thrust. 	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Forward cargo bay.	No	Yes Emerg.	HO				A	A
Aircraft General	Increase of 20 passengers in payload capacity.	No	No	HO				A	A
Aircraft General	Addition of second flight attendant position.	No	No	HO				A	A
24 Electrical Power	Revised architecture.	No	Yes Normals		ST, TCBI, SU, VT			A	B
27 Flight Controls	Three-panel slats on each wing.	Minor	Yes Normals		ST, TCBI, SU, VT			A	A
49 Airborne Auxiliary Power	Tailcone mounted.	No	Minor Normals	HO				A	A
52 Doors	Forward cargo bay door.	No	Minor Normals	HO				A	A
Limitations	<ul style="list-style-type: none"> • Auxiliary power unit (APU) operating limits. • Engine parameters. • Gear extension speed. • These are not all-inclusive. 	No	Yes Limits	HO	ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	Recirculated air distribution system with fan control switch.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated fan for avionics bay cooling.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated standby fan for electronic flight instrument system (EFIS) cooling. Backup cooling is via Environmental Control System (ECS) airflow.	No	Minor Normals	HO				A	A
21 Air Conditioning	Selected and actual temperature displayed on ECS synoptic page.	No	Minor Normals	HO				A	A
21 Air Conditioning	Revised architecture. No dedicated cargo bay fan.	No	No	HO				A	A
21 Air Conditioning	Revised architecture. One electrically operated outflow valve, two safety valves, and one ground valve.	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> • Circuit Breaker (CB) Panels 3 and 4 removed. • 40 kilovolt-ampere (kVA) generator (GEN) (no load-shedding for failed GEN). • GEN switches (3) always left in AUTO. • Alternating current (AC) utility buses removed. • Alternating Current Power Center (ACPC) controls switching automatically. • 4 - 120A Transformer-Rectifier Units (TRU) instead of 5 - 100A TRUs. • Bus ties are automatic (controlled by Direct Current Power Center (DCPC)). Switchlights removed on electrical power panel. • Service bus powered from direct current (DC) Bus 2. • One DC utility bus. • DC external power plug and DC external switchlight removed. • New ADG bus installed. • AC electric synoptic changes. • Air Data Computer (ADC) (no lamp test). • Battery chargers and battery location. 	No	Minor Normals		ST, TCBI, SU, VT			B	B
26 Fire Protection	Simplified testing procedure. Automatic built-in test equipment (BITE) and main display console (MDC) interface.	No	Minor Normals	HO				A	A
26 Fire Protection	No jet pipe overheat detection.	No	No	HO				A	A
26 Fire Protection	Fire suppression for forward cargo area. Common Halon system used to supply both compartments. Three cargo smoke detectors.	No	Minor Normals	HO				A	A
27 Flight Controls	No dedicated spoileron control surface. Multifunction spoilers act as flight spoiler, spoileron, or GLD.	No	No		ST, TCBI, SU, VT			A	A
27 Flight Controls	No flutter dampers on elevators.	No	No	HO				A	A
27 Flight Controls	Rudder limiter incorporated, function of speed, and flap position controlled by Spoiler Stabilizer Control Unit (SSCU).	No	No		ST, TCBI, SU, VT			A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	The power-up BITE test starts only when all three hydraulic systems are fully powered. A "SPLR/STAB IN TEST" advisory message is posted on EICAS during this test. All flight control systems are inoperative during the test.	No	Minor Normals	HO				A	A
27 Flight Controls	For redundancy, emergency slat/flap switch added to drive slats to 25° and flaps to 20° with a slat/flap selector failure.	No	Yes Abnormal		ST, TCBI, SU, VT			B	B
27 Flight Controls	Slat/flap lever has 6 positions.	No	Minor Normals	HO				A	A
28 Fuel	No gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Dedicated crossflow pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in right main tank.	No	No	HO				A	A
28 Fuel	Fuel synoptic changes.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is not load shed when respective engine GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	T/Rs are powered by hydraulics.	No	No	HO				A	A
29 Hydraulic Power	Hydraulic shut-off valve (SOV) switches added to isolate engine-driven pump (EDP) during low-pressure condition without shutting down the engine.	No	Minor Normals Abnormal		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	No cowl anti-ice blowout plug on engines.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor New Msg.	HO				A	A
30 Ice and Rain Protection	Simplified cowl and wing anti-ice synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing tested before flight with "ICE DET" switchlight.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for wing overheat (OVHT) protection. No "STBY" mode for wing anti-ice required.	No	No	HO				A	A
30 Ice and Rain Protection	Windshield wiper has intermittent position.	No	No	HO				A	A
30 Ice and Rain Protection	Variable white arcs on the N ₂ gauges. Range of arc varies with engine bleed condition.	No	No		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
30 Ice and Rain Protection	Wing anti-ice system tested continuously. No test switch (automatic function).	No	Minor Normals	HO				A	A
32 Landing Gear	Nose doors are mechanical.	No	No	HO				A	A
32 Landing Gear	Cantilever assemblies on main gear with shimmy dampers.	No	Minor Normals	HO				A	A
32 Landing Gear	No main gear dust pin covers.	No	No	HO				A	A
32 Landing Gear	No "FLT/NORM" switch installed on forward external service panel.	No	Minor Normals	HO				A	A
32 Landing Gear	No antiskid test switch. Revised antiskid test procedure.	No	Yes Normals		ST, TCBI, SU, VT			B	B
32 Landing Gear	Nosewheel Steering (NWS) deflection is +/- 80° with tiller and rudder pedal movement will deflect NW +/- 8°.	No	No	HO				A	A
33 Lights	Overhead panel dome lights installed.	No	No	HO				A	A
33 Lights	Single nose landing light.	No	No	HO				A	A
33 Lights	Three exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	No "EMER LTS OFF" light on panel. "EMER LTS OFF" caution message only.	No	Minor Normals Abnormal	HO				A	A
34 Navigation	No Mach transducer or selector valves in pitot static system.	No	Minor Normals	HO				A	A
34 Navigation	One electronic integrated standby instrument provides airspeed, altitude, attitude, slip/skid, and localizer/glideslope information.	No	Minor Normals	HO				A	A
35 Oxygen	Overboard discharge indicator located on left side of fuselage.	No	No	HO				A	A
36 Pneumatic	New flight deck bleed air panel. Engine bleed air taken from either 6 th or 10 th stage to supply common manifold. Bleed air selection is automatic when in "AUTO" mode. Provisions for manual switching.	No	Yes Normals/ Abnormal		ST, TCBI, SU, VT			B	B
36 Pneumatic	Power On automatic bleed air leak detection test.	No	Minor Normals	HO				A	A
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> 40 kVA GEN. No APU intake door "MID" EICAS indication. Dedicated APU fuel pump. APU fuel supply, left collector tank. "AVAIL" light = ready for electrical loading, Electronic Control Unit (ECU) determines when pneumatic loading is available. No fire horn. Start cycle. 	No	No		ST, TCBI, SU, VT			A	B

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
71 Powerplant	FADEC-controlled.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5		B	B
71 Powerplant	Rotational speed of the low-pressure compressor in a dual-spool gas turbine engine (N ₁) and rotational speed of the high-pressure compressor in a dual-spool gas turbine engine (N ₂) sync control panel.	No	Minor Normals Abnormal	HO				A	A
71 Powerplant	FADEC-controlled start cycle for Air Turbine Starter (ATS) and windmill starts.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5		B	B
71 Powerplant	T/Rs hydraulically-actuated. No thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	No emergency stow Push Button Assemblies (PBA).	No	Minor Normals		ST, TCBI, SU, VT			B	B
71 Powerplant	High-power schedule PBA.	No	Yes		ST, TCBI, SU, VT			B	B
71 Powerplant	FADEC-generated thrust limits for : (automatic with thrust levers in respective detent). <ul style="list-style-type: none"> • Takeoff (TO). • Flex (FLX). • Climb (CLB). • Go-around (GA). • Maximum continuous thrust (MCT). • Cruise (CRZ) (manually set in the cruise range). 	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Engine oil test panel removed. Engine oil level quantities provided on menu page.	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Automatic Flight Control System (AFCS)	Initial takeoff pitch target is optimized to takeoff V speeds entered.	No	No		ST, TCBI, SU, VT			B	B
Takeoff	Rotation rate is 3-5° per second towards target pitch attitude.	No	No		ST, TCBI, SU, VT			A	A
Takeoff	Throttles placed in “TOGA” detent and thrust is set into N ₁ caret by FADEC. Throttles placed in “CLB” detent and thrust is set into N ₁ caret by FADEC.	No	No			CSS, PTT, FTD 2-5		B	B
Takeoff	Flap Retraction: <ul style="list-style-type: none"> Flaps 8 takeoff - Flaps retracted to “1” from “8” at takeoff safety speed (V₂) + 12 and to “0” from “1” at final takeoff speed (V_{FTO}) -15 kts. Flaps 20 takeoff - Flaps retracted to “8” from “20” at V₂ + 12 and to “1” from “8” at V₂ + 20 and then to “0” from “1” at V_{FTO} -15. 	No	Yes Normals			CSS, PTT, FTD 2-5		C*	B
Approach	Approach Attitude Comparison <u>CRJ200</u> <u>CRJ700</u> Single Engine (SE) Normal N/A Flapless (Slats 25) Normal Slatless (Flaps 45) Flapless SE	Yes	No		VT			B	A
Landing	More pronounced flare.	Yes	No		VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____					COMPLIANCE METHOD				
					TRAINING				CHK/CURR
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 87 ft, 10 in (26.77 m). Decrease of 18 ft, 10 in (5.74 m). Wingspan: <ul style="list-style-type: none"> 69 ft, 6 in (21.21 m). Decrease of 6 ft, 9 in (2.04 m). Tailspan: <ul style="list-style-type: none"> 20 ft, 4 in (6.2 m). Decrease of 7 ft, 8 in (2.34 m). Height: <ul style="list-style-type: none"> 20 ft, 8 in (6.3 m). Decrease of 4 ft, 2 in (1.27 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 53,000 lb (24,041 kg). Decrease of 22,000 lb (9,979 kg). MLW: <ul style="list-style-type: none"> 47,000 lb (21,319 kg). Decrease of 20,000 lb. (9,072 kg). Fuel Capacity: <ul style="list-style-type: none"> 2151 U.S. gal (8,142 L). Decrease of 751 gal (2,835 L). 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 10 ft, 4 in (3.1 m). Decrease of 3 ft, 2 in (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> 36 ft, 4 in (11.07 m). Decrease of 4 ft, 6 in (1.37 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-3B1. 9,220 lb of thrust, APR. Decrease of 4,570 lb of thrust. 	No	No	HO				A	A
Aircraft General	No forward cargo bay.	No	Minor	HO				A	A
Aircraft General	Decrease of 20 passengers in payload capacity.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	One flight attendant position.	No	No	HO				A	A
24 Electrical Power	Architectural differences.	No	Minor (Ext. DC)		ST, TCBI, SU, VT			A	A
27 Flight Controls	No slats on wings.	Minor	Yes Normals	HO				A	A
49 Airborne Auxiliary Power	Located in aft equipment bay. Intake, exhaust, or hazard areas.	No	Minor Normals	HO				A	A
52 Doors	No forward cargo bay door.	No	Minor Normals	HO				A	A
Limitations	<ul style="list-style-type: none"> • APU operating limits. • Engine parameters. • Gear extension speed. • Windshield wipers. • Single pack Ops. • Crosswind. • Cargo (fire). • Cold soak (T/Rs). • These are not all-inclusive. 	No	Yes Limits		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	No recirculation feature.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated avionics bay cooling system with fan control.	No	Minor Normals		ST, TCBI, SU, VT			B	A
21 Air Conditioning	Cabin actual temperature indications only.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated cargo bay fan.	No	Minor Msg.	HO				A	A
21 Air Conditioning	Architectural differences: two pneumatically controlled outflow or safety valves, and overboard and inboard ground valves.	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> • CB Panels 3 and 4 in flight deck. • 30 kVA GEN (load-shedding for failed GEN). • GEN switches (3) manually selected from "OFF" to "ON" after engine start. • Two AC utility buses, load shed under certain conditions. • No ACPC installed, individual relays accomplish switching. • 5 - 100A TRUs instead of 4 - 120A TRUs. • Bus ties 1 and 2 are automatic. "ESS TIE" is manually selected. Switchlights on electrical power service panel. • Service bus powered from SERV TRU. • Two DC utility buses. • DC external power plug with external DC Switchlight on electrical panel. • ADG feeds directly to AC essential bus. • System affected during AC power transfer (loss of AC Bus 2). • Battery charger; battery location. 	No	Minor Normals, Abnormal, Emergency		ST, TCBI, SU, VT			B	B
26 Fire Protection	Non-automated testing procedure.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
26 Fire Protection	Jet pipe OVHT detection. Emergency procedure (Recall).	No	Msg.		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Dedicated spoileron control surface and dedicated flight spoiler control surface.	No	No	HO				A	A
27 Flight Controls	Flutter dampers on elevators.	No	No	HO				A	A
27 Flight Controls	No rudder limiter.	No	No	HO				A	A
27 Flight Controls	No power-up BITE test or "SPLR/STAB IN TEST" advisory message.	No	Minor Normals	HO				A	A
27 Flight Controls	No emergency flap switch.	No	Yes Abnormal	HO				A	A
27 Flight Controls	Flap lever has 5 positions.	No	Minor Normals	HO				A	A
28 Fuel	Gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Shared APU and crossflow fuel pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in left main tank.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is load shed when opposite GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	No hydraulic SOV switches.	No	Minor Abnormal	HO				A	A
30 Ice and Rain Protection	Cowl anti-icing valves pressure regulated with overpressure protection (anti-ice blowout plug on engines).	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing not tested.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-icing two operating temperature modes "NORM" and "STBY" are manually selectable.	No	Minor Abnormal		ST, TCBI, SU, VT			B	A
30 Ice and Rain Protection	Amber arcs on the N ₂ gauges. Range from 0 -78%.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-ice system test switch.	No	Minor Normals		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	Architectural differences on synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Cowl and wing anti-ice deactivated during T/R deployment.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
32 Landing Gear	Nose doors are powered by hydraulics.	No	Minor Normals			FTD 2-5		B	A
32 Landing Gear	Trailing link assemblies on main gear without shimmy dampers.	No	No	HO				A	A
32 Landing Gear	Main gear pin dust cover.	No	Minor Normals	HO				A	A
32 Landing Gear	“FLT/NORM” switch on forward external service panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A
32 Landing Gear	Antiskid test switch. Parking brake “OFF.”	No	Yes Normals		ST, TCBI, SU, VT			B	A
32 Landing Gear	NWS deflection is +/- 70° with tiller and rudder pedal movement will deflect NW +/- 5°.	No	No	HO				A	A
33 Lights	No overhead panel dome lights.	No	No	HO				A	A
33 Lights	Dual nose landing lights.	No	No	HO				A	A
33 Lights	Four exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	“EMER LTS OFF” light on the “EMER LTS” panel illuminates coincident with the “EMER LTS OFF” caution message.	No	Minor Normals	HO				A	A
34 Navigation	Mach transducer and selector valves in pitot static system.	No	Minor Abnormal	HO				A	A
34 Navigation	Two separate standby instruments provide airspeed, altitude, attitude, slip/skid, and localizer/glideslope information.	No	Minor Normals		ST, TCBI, SU, VT			B	B
35 Oxygen	Overboard discharge indicator located on right side of fuselage.	No	No	HO				A	A
36 Pneumatic	T/Rs are powered by 14 th stage bleed air.	No	No		ST, TCBI, SU, VT			B	B
36 Pneumatic	10 th and 14 th stage bleed air systems controlled by manual manipulation of bleed air switches with APU interlock protection system.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
36 Pneumatic	10 th stage manifold services: air conditioning and engine starting. 14 th stage manifold services: anti-ice systems and single pack Ops.	No	Yes Abnormal		ST, TCBI, SU, VT			B	B
36 Pneumatic	Bleed air leak detection test conducted first flight of the day.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> • 30kVA GEN. • APU intake door EICAS indications: "CLSD," "MID," and "OPEN." • Shared APU and crossflow fuel pump. • Fuel supply, both wing tanks. • "AVAIL" light = ready for pneumatic loading, APU Generator Control Unit (GCU) determines when electrical loading is available. • Fire horn; Start cycle. 	No	Yes Normals Abnormal and Emerg		ST, TCBI, SU, VT			B	A
71 Powerplant	Hydro-mechanically and N ₁ speed governing.	No	No		ST, TCBI, SU, VT			A	A
71 Powerplant	APR and "ENG SPEED" control panel.	No	Yes Normals		ST, TCBI, SU, VT			A	A
71 Powerplant	Thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Emergency stow PBAs for T/Rs.	No	Yes Normals Emergency			FTD 2-5		C	B
71 Powerplant	Pilot-managed start cycles for ATS and windmill starts.	No	Yes Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
71 Powerplant	FMS-generated thrust limits for manually set, no detents. <ul style="list-style-type: none"> • TO. • FLX. • CLB. • GA. • MCT. • CRZ. 	No	Minor Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
71 Powerplant	No high-power schedule PBA.	No	Yes	HO				A	A
71 Powerplant	Oil level test panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
AFCS	Flight Director (FD) target pitch attitude on takeoff is 15° up and GA or SE takeoff is 10° up.	No	No		ST, TCBI, SU, VT			B	A
Takeoff	Rotation rate is 3° per second towards target pitch attitude.	No	No	HO				A	A
Takeoff	Throttles manually placed in thrust caret, set by FMS.	No	No			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Takeoff	No Flap 1 Position: No requirement to monitor V _{FTO} -15 airspeed for flap retraction from Flap 8 to Flap 1.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Approach	Approach Attitude Comparison CRJ700 CRJ200 Normal..... SE Flapless (Slats 25)..... N/A Slatless (Flaps 45)..... Normal SE Flapless	Yes	No		VT			B	B
Landing	Minimal flare required.	Yes	No		VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 118 ft, 11 in (36.24 m). Increase of 31 ft, 1 in (9.47 m). Wingspan: <ul style="list-style-type: none"> 81 ft, 7 in (24.87m). Increase of 12 ft, 1 in (3.66 m). Tailspan: <ul style="list-style-type: none"> 28 ft. (8.54 m). Increase of 7 ft, 8 in (2.23 m). Height: <ul style="list-style-type: none"> 24 ft, 7 in (7.49 m). Increase of 3 ft, 11 in (1.19 m) 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 84,500 lb (38,329 kg). Increase of 31,500 lb (14,288 kg). MLW: <ul style="list-style-type: none"> 75,100 lb (34,065 kg). Increase of 28,100 lb (12,746 kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). Increase of 751 gal (2,835 L). 	No	No	HO				A	B
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 6in (4.0 m). Increase of 3 ft, 2 in (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> 48 ft, 4 in (14.73 m). Increase of 12 ft. (3.66 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C5. 14,510 lb of thrust, APR. Increase of 5,290 lb of thrust. 	No	No	HO				A	A
Aircraft General	Forward cargo bay.	No	Yes Emerg.	HO				A	A
Aircraft General	Increase of 40 passengers in payload capacity.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Addition of second flight attendant position.	No	No	HO				A	A
24 Electrical Power	Revised architecture.	No	Yes Normals		ST, TCBI, SU, VT			A	B
27 Flight Controls	Three-panel slats on each wing.	Minor	Yes Normals		ST, TCBI, SU, VT			A	A
49 Airborne Auxiliary Power	Tailcone mounted.	No	Minor Normals	HO				A	A
52 Doors	Two additional forward cargo bay doors.	No	Minor Normals	HO				A	A
52 Doors	Four overwing emergency exits.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • APU operating limits. • Engine parameters. • Gear extension speed. • Taxi-turning radius. • These are not all-inclusive. 	No	Yes Limits		ST, TCBI, SU, VT			B	B
Limitations	Maximum operating limit speed (M _{MO}) above flight level (FL) 340 is 0.84 Mach. Decrease of 0.01 Mach.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	Recirculated air distribution system with fan control switch.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated fan for avionics bay cooling.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated standby fan for EFIS cooling. Backup cooling is via ECS airflow.	No	Minor Normals	HO				A	A
21 Air Conditioning	Selected and actual temperature displayed on ECS synoptic page.	No	Minor Normals	HO				A	A
21 Air Conditioning	Revised architecture. No dedicated cargo bay fan.	No	No	HO				A	A
21 Air Conditioning	Revised architecture. One electrically operated outflow valve, two safety valves, one ground valve.	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> • CB Panels 3 and 4 removed. • 40 kVA GEN (no load-shedding for failed GEN). • GEN switches (3) always left in "AUTO." • AC utility buses removed. • ACPC controls switching automatically. • 4 - 120A TRUs instead of 5 - 100A TRUs. • Bus Ties are automatic (controlled by DCPC). • Switchlights removed on electrical power panel. • Service bus powered from DC Bus 2. • One DC utility bus. • DC external power plug and DC external switchlight removed. • New ADG bus installed. • AC electric synoptic changes. • ADC (no lamp test). • Battery chargers and battery location. 	No	Minor Normals		ST, TCBI, SU, VT			B	B
26 Fire Protection	Simplified testing procedure. Automatic BITE and MDC interface.	No	Minor Normals	HO				A	A
26 Fire Protection	No jet pipe overheat detection.	No	No	HO				A	A
26 Fire Protection	Fire suppression for forward cargo area. Common Halon system used to supply both compartments. Three cargo smoke detectors.	No	Minor Normals	HO				A	A
27 Flight Controls	No dedicated spoileron control surface. Multifunction spoilers act as flight spoiler or spoileron or GLD.	No	No		ST, TCBI, SU, VT			A	A
27 Flight Controls	No flutter dampers on elevators.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Rudder limiter incorporated, function of speed, and flap position controlled by SSCU.	No	No		ST, TCBI, SU, VT			A	A
27 Flight Controls	The power up BITE test starts only when all three hydraulic systems are fully powered. A "SPLR/STAB IN TEST" advisory message is posted on EICAS during this test. All flight control systems are inoperative during the test.	No	Minor Normals	HO				A	A
27 Flight Controls	For redundancy, emergency slat/flap switch added to drive slats to 20° and flaps to 20° with a slat/flap selector failure.	No	Yes Abnormal		ST, TCBI, SU, VT			B	B
27 Flight Controls	Slat/flap lever has 6 positions.	No	Minor Normals	HO				A	A
28 Fuel	No gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Dedicated crossflow pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in right main tank.	No	No	HO				A	A
28 Fuel	Fuel synoptic changes.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is not load shed when respective engine GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	T/Rs are powered by hydraulics.	No	No	HO				A	A
29 Hydraulic Power	Hydraulic SOV switches added to isolate EDP during low-pressure condition without shutting down the engine.	No	Minor Normals Abnormal		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	No cowl anti-ice blowout plug on engines.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor New Msg.	HO				A	A
30 Ice and Rain Protection	Simplified cowl and wing anti-ice synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing tested before flight with "ICE DET" switchlight.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for wing OVHT protection. No "STBY" mode for wing anti-ice required.	No	No	HO				A	A
30 Ice and Rain Protection	Windshield wiper has intermittent position.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
30 Ice and Rain Protection	Variable white arcs on the N ₂ gauges. Range of arc varies with engine bleed condition.	No	No		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	Wing anti-ice system tested continuously. No test switch (automatic function).	No	Minor Normals	HO				A	A
32 Landing Gear	Nose doors are mechanical.	No	No	HO				A	A
32 Landing Gear	Cantilever assemblies on main gear with shimmy dampers.	No	Minor Normals	HO				A	A
32 Landing Gear	No main gear dust pin covers.	No	No	HO				A	A
32 Landing Gear	No "FLT/NORM" switch installed on forward external service panel.	No	Minor Normals	HO				A	A
32 Landing Gear	No antiskid test switch. Revised antiskid test procedure.	No	Yes Normals		ST, TCBI, SU, VT			B	B
32 Landing Gear	NWS deflection is +/- 80° with tiller and rudder pedal movement will deflect NW +/- 8°.	No	No	HO				A	A
32 Landing Gear	Increased tire speed limit.	No	No	HO				A	A
33 Lights	Overhead panel dome lights installed.	No	No	HO				A	A
33 Lights	Single nose landing light.	No	No	HO				A	A
33 Lights	Three exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	No "EMER LTS OFF" light on panel. "EMER LTS OFF" caution message only.	No	Minor Normals Abnormal	HO				A	A
34 Navigation	No Mach transducer or selector valves in pitot static system.	No	Minor Normals	HO				A	A
34 Navigation	One electronic integrated standby instrument provides airspeed, altitude, attitude, slip/skid, and localizer/glideslope information.	No	Minor Normals	HO				A	A
35 Oxygen	Overboard discharge indicator located on left side of fuselage.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
36 Pneumatic	New flight deck bleed air panel. Engine bleed air taken from 6 th or 10 th stage to supply common manifold. Bleed air selection is automatic when in "AUTO" mode. Provisions for manual switching.	No	Yes Normals/ Abnormal		ST, TCBI, SU, VT			B	B
36 Pneumatic	Power On automatic bleed air leak detection test.	No	Minor Normals	HO				A	A
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> • 40 kVA GEN. • No APU intake door "MID" EICAS indication. • Dedicated APU fuel pump. • APU Fuel supply, left collector tank. • "AVAIL" light = ready for electrical loading, ECU determines when pneumatic loading is available. No fire horn. Start cycle. 	No	No		ST, TCBI, SU, VT			A	B
52 Doors	Four overwing emergency exits. Minor changes to doors synoptic page and EICAS messages.	No	Minor Messages	HO				A	A
71 Powerplant	FADEC-controlled.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5.		B	B
71 Powerplant	N ₁ and N ₂ sync control panel.	No	Minor Normals Abnormal	HO				A	A
71 Powerplant	FADEC-controlled start cycle for ATS and windmill starts.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5		B	B
71 Powerplant	T/Rs hydraulically actuated. No thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	No emergency stow PBAs.	No	Minor Normals		ST, TCBI, SU, VT			B	B
71 Powerplant	High-power schedule PBA.	No	Yes		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
71 Powerplant	FADEC-generated thrust limits for: (automatic with thrust levers in respective detent). <ul style="list-style-type: none"> • TO. • FLX. • CLB. • GA. • MCT. • CRZ (manually set in the cruise range). 	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Engine oil test panel removed. Engine oil level quantities provided on menu page.	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
AFCS	Initial takeoff pitch target is optimized to takeoff V speeds entered.	No	No		ST, TCBI, SU, VT			B	B
Taxi	Turning radius increased.	No	No	HO				A	A
Takeoff	Rotation rate is 3° to 5° per second towards target pitch attitude.	No	No		ST, TCBI, SU, VT			A	A
Takeoff	Throttles placed in “TOGA” detent and thrust is set into N ₁ caret by FADEC. Throttles placed in “CLB” detent and thrust is set into N ₁ caret by FADEC.	No	No			CSS, PTT, FTD 2-5		B	B
Takeoff	Flap Retraction: <ul style="list-style-type: none"> Flaps 8 takeoff - flaps retracted to “1” from “8” at V₂ + 12 and to “0” from “1” at V_{FTO} -15 kts. Flaps 20 takeoff - flaps retracted to “8” from “20” at V₂ + 12 and to “1” from “8” at V₂ + 20 and then to “0” from “1” at V_{FTO} -15. 	No	Yes Normals			CSS, PTT, FTD 2-5		C*	B
Approach	Approach Attitude Comparison <u>CRJ200</u> <u>CRJ900</u> SE Normal N/A Flapless (Slats 20) Normal Slatless (Flaps 45) Flapless SE	Yes	No		VT			B	A
Landing	More pronounced flare.	Yes	No		VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 87 ft, 10 in (26.77 m). Decrease of 31 ft, 1 in (9.47 m). Wingspan: <ul style="list-style-type: none"> 69 ft, 6 in (21.21 m). Decrease of 12 ft, 1 in (3.66 m). Tailspan: <ul style="list-style-type: none"> 20 ft, 4 in (6.20 m). Decrease of 7 ft, 8 in (2.23 m). Height: <ul style="list-style-type: none"> 20 ft, 8 in (6.30 m). Decrease of 3 ft, 11 in (1.19 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 53,000 lb (24,041 kg). Decrease of 31,500 lb (14,288 kg). MLW: <ul style="list-style-type: none"> 47,000 lb (21,319 kg). Decrease of 28,100 lb (12,746 kg). Fuel Capacity: <ul style="list-style-type: none"> 2151 U.S. gal (8,142 L). Decrease of 751 gal (2,835 L). 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 10 ft, 4 in (3.15 m). Decrease of 3ft, 2 in (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> 36 ft, 4 in (11.07 m). Decrease of 12 ft. (3.66 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-3B1. 9,220 lb of thrust, APR. Difference of 5,290 lb of thrust. 	No	No	HO				A	A
Aircraft General	No forward cargo bay.	No	Minor	HO				A	A
Aircraft General	Decrease of 40 passengers in payload capacity.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	One flight attendant position.	No	No	HO				A	A
24 Electrical Power	Architectural differences.	No	Minor (Ext. DC)		ST, TCBI, SU, VT			A	A
27 Flight Controls	No slats on wings.	Minor	Yes Normals	HO				A	A
49 Airborne Auxiliary Power	Located in aft equipment bay. Intake, exhaust, or hazard areas.	No	Minor Normals	HO				A	A
52 Doors	No forward cargo bay door.	No	No	HO				A	A
52 Doors	2 fewer overwing emergency exits.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • APU operating limits. • Engine parameters, gear extension speed, windshield wipers, single pack ops, crosswind, cargo (fire), and cold soak (T/Rs). • These are not all-inclusive. 	No	Yes Limits		ST, TCBI, SU, VT			B	B
Limitations	M _{MO} above FL 340 is 0.85 Mach. Increase of 0.01 Mach.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	No recirculation feature.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated avionics bay cooling system with fan control.	No	Minor Normals		ST, TCBI, SU, VT			B	A
21 Air Conditioning	Cabin actual temperature indications only.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated cargo bay fan.	No	Minor Msg.	HO				A	A
21 Air Conditioning	Architectural differences: two pneumatically controlled outflow or safety valves, overboard and inboard ground valves.	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> • CB Panels 3 and 4 in flight deck. • 30 kVA GEN (load-shedding for failed GEN). • GEN switches (3) manually selected from “OFF” to “ON” after engine start. • Two AC utility buses, load shed under certain conditions. • No ACPC installed, individual relays accomplish switching. • 5 - 100A TRUs instead of 4 - 120 A TRUs. • Bus Ties 1 and 2 are automatic. “ESS Tie” is manually selected. Switchlights on electrical power service panel. • Service bus powered from SERV TRU. • Two DC utility buses. • DC external power plug with external DC switchlight on electrical panel. • ADG feeds directly to AC essential bus. • System affected during AC power transfer (loss of AC Bus 2). • Battery and battery charger location. 	No	Minor Normals, Abnormal, Emergency		ST, TCBI, SU, VT			B	B
26 Fire Protection	Non-automated testing procedure.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
26 Fire Protection	Jet pipe OVHT detection. Emergency procedure (Recall).	No	Msg.		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Dedicated spoileron control surface and dedicated flight spoiler control surface.	No	No	HO				A	A
27 Flight Controls	Flutter dampers on elevators.	No	No	HO				A	A
27 Flight Controls	No rudder limiter.	No	No	HO				A	A
27 Flight Controls	No power up BITE test or "SPLR/STAB IN TEST" advisory message.	No	Minor Normals	HO				A	A
27 Flight Controls	No emergency flap switch.	No	Yes Abnormal	HO				A	A
27 Flight Controls	Flap lever has 5 positions.	No	Minor Normals	HO				A	A
28 Fuel	Fuel synoptic changes.	No	No	HO				A	A
28 Fuel	Gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Shared APU and crossflow fuel pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in left main tank.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is load shed when opposite GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	No hydraulic SOV switches.	No	Minor Abnormal	HO				A	A
30 Ice and Rain Protection	Cowl anti-icing valves pressure regulated with overpressure protection (anti-ice blowout plug on engines).	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing not tested.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-icing two operating temperature modes "NORM" and "STBY" are manually selectable.	No	Minor Abnormal		ST, TCBI, SU, VT			B	A
30 Ice and Rain Protection	Amber arcs on the N ₂ gauges. Range from 0 -78%.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-ice system test switch.	No	Minor Normals		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	Architectural differences on synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Cowl and wing anti-ice deactivated during T/R deployment.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
32 Landing Gear	Nose doors are powered by hydraulics.	No	Minor Normals			FTD 2-5		B	A
32 Landing Gear	Trailing link assemblies on main gear without shimmy dampers.	No	No	HO				A	A
32 Landing Gear	Decreased tire speed limit.	No	No	HO				A	A
32 Landing Gear	Main gear pin dust cover.	No	Minor Normals	HO				A	A
32 Landing Gear	“FLT/NORM” switch on forward external service panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A
32 Landing Gear	Antiskid test switch. Parking brake “OFF.”	No	Yes Normals		ST, TCBI, SU, VT			B	A
32 Landing Gear	NWS deflection is +/- 70° with tiller and rudder pedal movement will deflect NW +/- 5°.	No	No	HO				A	A
33 Lights	No overhead panel dome lights.	No	No	HO				A	A
33 Lights	Dual nose landing lights.	No	No	HO				A	A
33 Lights	Four exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	“EMER LTS OFF” light on the “EMER LTS” panel illuminates coincident with the “EMER LTS OFF” caution message	No	Minor Normals	HO				A	A
34 Flight Instr	Mach transducer and selector valves in pitot static system.	No	Minor Abnormal	HO				A	A
34 Flight Instr	Two separate standby instruments provide airspeed, altitude, attitude, slip/skid, and localizer/glideslope information.	No	Minor Normals		ST, TCBI, SU, VT			B	B
35 Oxygen	Overboard discharge indicator located on right side of fuselage.	No	No	HO				A	A
36 Pneumatic	T/Rs are powered by 14 th stage bleed air.	No	No		ST, TCBI, SU, VT			B	B
36 Pneumatic	10 th and 14 th stage bleed air systems controlled by manual manipulation of bleed air switches with APU interlock protection system.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
36 Pneumatic	10 th stage manifold services: air conditioning, engine starting. 14 th stage manifold services: anti-ice systems. Single pack Ops.	No	Yes Abnormal		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
36 Pneumatic	Bleed air leak detection test conducted first flight of the day.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> 30 kVA GEN. APU intake door EICAS Indications: "CLSD," "MID," and "OPEN." Shared APU and crossflow fuel pump. Fuel supply, both wing tanks. "AVAIL" light = ready for pneumatic loading, APU GCU determines when electrical loading is available. 	No	Yes Normals Abnormal Emergency		ST, TCBI, SU, VT			B	A
52 Doors	Two overwing emergency exits. Minor changes to doors synoptic page and EICAS messages.	No	Minor Messages	HO				A	A
71 Powerplant	Hydro-mechanically and N ₁ speed-governing.	No	No		ST, TCBI, SU, VT			A	A
71 Powerplant	APR and ENG SPEED control panel.	No	Yes Normals		ST, TCBI, SU, VT			A	A
71 Powerplant	Thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Emergency stow PBAs for T/Rs.	No	Yes Normals Emergency			FTD 2-5		C	B
71 Powerplant	Pilot-managed start cycles for ATS and windmill starts.	No	Yes Normals	HO				A	A
71 Powerplant	FMS generated thrust limits for: manually set, no detents. <ul style="list-style-type: none"> TO. FLX. CLB. GA. MCT. CRZ. 	No	Minor Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
71 Powerplant	No high-power schedule PBA.	No	Yes	HO				A	A
71 Powerplant	Oil level test panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
AFCS	FD target pitch attitude on takeoff is 15° up and GA or SE takeoff is 10° up.	No	No		ST, TCBI, SU, VT			B	A
Taxi	Turning radius decreased.	No	No	HO				A	A
Takeoff	Rotation rate is 3° per second towards target pitch attitude.	No	No	HO				A	A
Takeoff	Throttles manually placed in thrust caret, set by FMS.	No	No			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Takeoff	No Flap 1 Position: No requirement to monitor V _{FTO} -15 airspeed for flap retraction from Flap 8 to Flap 1.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Approach	Approach Attitude Comparison CRJ900 CRJ200 Normal SE Flapless (slats 20) N/A Slatless (flaps 45) Normal SE Flapless	Yes	No		VT			B	B
Landing	Minimal flare required.	Yes	No		VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 118 ft, 11 in (36.24 m). Increase of 12 ft, 3 in (3.73 m). Wingspan: <ul style="list-style-type: none"> 81 ft, 7 in (24.87m). Increase of 5 ft, 4 in (1.62 m). Tailspan: <ul style="list-style-type: none"> 28 ft. (8.54 m). No change. Height: <ul style="list-style-type: none"> 24 ft, 7 in (7.49 m). Decrease of 0 ft, 3 in (0.08 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 84,500 lb (38,329 kg). Increase of 9,500 lb (4,309 kg). MLW: <ul style="list-style-type: none"> 75,100 lb (34,065 kg). Increase of 8,100 lb (3,674 kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). No change. 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 6 in (4.0 m). No change. Nose to Main Wheels: <ul style="list-style-type: none"> 48 ft, 4 in (14.73 m). Increase of 7 ft, 6 in (2.29 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C5. 14,255 lb of thrust, APR. Increase of 720 lb of thrust. 	No	No	HO				A	A
Aircraft General	Increase of 20 passengers in payload capacity.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
52 Doors	Two forward cargo bay door (2 total).	No	Minor Normals	HO				A	A
52 Doors	Four overwing emergency exits. Minor EICAS changes.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • Engine parameters. • Flap 20 V_{FE}. • Tire speed. • Ground turning radius. • These are not all-inclusive. 	No	Yes Limits	HO				A	A
Limitations	M _{MO} above FL 340 is 0.84 Mach. Decrease of 0.01 Mach.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Slat/Flap Relationship: When flap lever is selected to 20°, slats are at 20°, and flaps are at 20°	No	No	HO				A	A
27 Flight Controls	Emergency flap when selected, slats move to 20°, and flaps are at 20°.	No	No	HO				A	A
32 Landing Gear	Increase in tire speed.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Taxi	Increase in taxi-turning radius.	No	No	HO				A	A
Landing	More pronounced flare.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 106 ft, 8 in (32.51 m). Decrease of 12 ft, 3 in (3.73 m). Wingspan: <ul style="list-style-type: none"> 76 ft, 3 in (23.25 m). Decrease of 5 ft, 4in (1.62 m). Tailspan: <ul style="list-style-type: none"> 28 ft, 0 in (8.54 m). No change. Height: <ul style="list-style-type: none"> 24 ft, 10 in (7.57 m). Increase of 0 ft, 3 in (0.08 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 75,000 lb (34,020 kg). Decrease of 9,500 lb (4,309 kg). MLW: <ul style="list-style-type: none"> 67,000 lb (30,390 kg). Decrease of 8,100 lb (3,674kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). No change. 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 6 in (4.0 m). No change. Nose to Main Wheels: <ul style="list-style-type: none"> 40 ft, 10 in (12.44 m). Decrease of 7 ft, 6 in (2.29 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C1 or GE CF34-8C5B1. 13,790 lb of thrust, APR. Decrease of 720 lb of thrust. 	No	No	HO				A	A
Aircraft General	Decrease of 20 passengers in payload capacity.	No	No	HO				A	A
52 Doors	One forward cargo bay door.	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
52 Doors	Two overwing emergency exits. Minor EICAS changes.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • Engine parameters. • Flap 20 V_{FE}. • Tire speed. • Ground turning radius. • These are not all-inclusive. 	No	Yes Limits	HO				A	A
Limitations	M _{MO} is 0.85M above FL 340. Increase of 0.01M.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Slat/Flap Relationship: When flap lever is selected to 20°, slats are at 25°, and flaps are at 20°.	No	No	HO				A	A
27 Flight Controls	Emergency flap when selected, slats move to 25°, and flaps are at 20°.	No	No	HO				A	A
32 Landing Gear	Tire speed reduced.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D24 APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Taxi	Decrease in taxi-turning radius.	No	No	HO				A	A
Landing	Less pronounced flare.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 118 ft, 11 in (36.24 m). Increase of 31 ft, 1 in (9.47 m). Wingspan: <ul style="list-style-type: none"> 81 ft, 7 in (24.87 m). Increase of 12 ft, 1 in (3.66 m). Tailspan: <ul style="list-style-type: none"> 28 ft (8.54 m). Increase of 7 ft, 8 in (2.23 m). Height: <ul style="list-style-type: none"> 24 ft, 7 in (7.49 m). Increase of 3 ft, 11 in (1.19 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 84,500 lb (38,329 kg). Increase of 31,500 lb (14,288 kg). MLW: <ul style="list-style-type: none"> 75,100 lb (34,065 kg). Increase of 28,100 lb (12,746 kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). Increase of 751 gal (2,835 L). 	No	No	HO				A	B
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 6 in (4.0 m). Increase of 3 ft, 2 in (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> 48 ft, 4 in (14.73 m). Increase of 12 ft. (3.66 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C5. 14,510 lb of thrust, APR. Increase of 5,290 lb of thrust. 	No	No	HO				A	A
Aircraft General	Forward cargo bay.	No	Yes Emerg.	HO				A	A
Aircraft General	Increase of 25 passengers in payload capacity.	No	No	HO				A	A
Aircraft General	Addition of second flight attendant position.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
24 Electrical Power	Revised architecture.	No	Yes Normals		ST, TCBI, SU, VT			A	B
27 Flight Controls	Three panel slats on each wing.	Minor	Yes Normals		ST, TCBI, SU, VT			A	A
49 Airborne Auxiliary Power	Tailcone mounted.	No	Minor Normals	HO				A	A
52 Doors	Two forward cargo bay doors.	No	Minor Normals	HO				A	A
52 Doors	Two additional overwing emergency exits.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • APU operating limits. • Engine parameters. • Gear extension speed. • Taxi-turning radius. • These are not all-inclusive. 	No	Yes Limits		ST, TCBI, SU, VT			B	B
Limitations	M _{MO} above FL 340 is 0.84 Mach. Decrease of 0.01 Mach.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	Recirculated air distribution system with fan control switch.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated fan for avionics bay cooling.	No	Minor Normals	HO				A	A
21 Air Conditioning	No dedicated standby fan for EFIS cooling. Backup cooling is via ECS airflow.	No	Minor Normals	HO				A	A
21 Air Conditioning	Selected and actual temperature displayed on ECS synoptic page.	No	Minor Normals	HO				A	A
21 Air Conditioning	Revised architecture. No dedicated cargo bay fan.	No	No	HO				A	A
21 Air Conditioning	Revised architecture. One electrically operated outflow valve, two safety valves, and one ground valve.	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> • CB Panels 3 and 4 removed. • 40 kVA GEN (no load-shedding for failed GEN). • GEN switches (3) always left in "AUTO." • AC utility buses removed. • ACPC controls switching automatically. • 4 - 120A TRUs instead of 5 - 100A TRUs. • Bus ties are automatic (controlled by DCPC). • Switchlights removed on electrical power panel. • Service bus powered from DC Bus 2. • One DC utility bus. • DC external power plug and DC external switchlight removed. • New ADG bus installed. • AC electric synoptic changes. • ADC (no lamp test). • Battery chargers, battery location. 	No	Minor Normals		ST, TCBI, SU, VT			B	B
26 Fire Protection	Simplified testing procedure. Automatic BITE and MDC interface.	No	Minor Normals	HO				A	A
26 Fire Protection	No jet pipe overheat detection.	No	No	HO				A	A
26 Fire Protection	Fire suppression for forward cargo area. Common Halon system used to supply both compartments. Three cargo smoke detectors.	No	Minor Normals	HO				A	A
27 Flight Controls	No dedicated spoileron control surface. Multifunction spoilers act as flight spoiler or spoileron or GLD.	No	No		ST, TCBI, SU, VT			A	A
27 Flight Controls	No flutter dampers on elevators.	No	No	HO				A	A
27 Flight Controls	Rudder limiter incorporated, function of speed and flap position controlled by SSCU	No	No		ST, TCBI, SU, VT			A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Power up BITE test starts only when all three hydraulic systems are fully powered. A "SPLR/STAB IN TEST" advisory message is posted on EICAS during this test. All Flt control systems are inoperative during the test.	No	Minor Normals	HO				A	A
27 Flight Controls	For redundancy, emergency slat/flap switch added to drive slats to 20° and flaps to 20° with a slat/flap selector failure.	No	Yes Abnormal		ST, TCBI, SU, VT			B	B
27 Flight Controls	Slat/flap lever has 6 positions.	No	Minor Normals	HO				A	A
28 Fuel	No gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Dedicated crossflow pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in right main tank.	No	No	HO				A	A
28 Fuel	Fuel synoptic changes.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is not load shed when respective engine GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	T/Rs are powered by hydraulics.	No	No	HO				A	A
29 Hydraulic Power	Hydraulic SOV switches added to isolate EDP during low-pressure condition without shutting down the engine.	No	Minor Normals Abnormal		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	No cowl anti-ice blowout plug on engines.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor New Msg.	HO				A	A
30 Ice and Rain Protection	Simplified cowl and wing anti-ice synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing tested before flight with "ICE DET" switchlight.	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for wing OVHT protection. No "STBY" mode for wing anti-ice required.	No	No	HO				A	A
30 Ice and Rain Protection	Windshield wiper has intermittent position.	No	No	HO				A	A
30 Ice and Rain Protection	Variable white arcs on the N ₂ gauges. Range of arc varies with engine bleed condition.	No	No		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
30 Ice and Rain Protection	Wing anti-ice system tested continuously. No test switch (automatic function).	No	Minor Normals	HO				A	A
32 Landing Gear	Nose doors are mechanical.	No	No	HO				A	A
32 Landing Gear	Cantilever assemblies on main gear with shimmy dampers.	No	Minor Normals	HO				A	A
32 Landing Gear	No main gear dust pin covers.	No	No	HO				A	A
32 Landing Gear	No "FLT/NORM" switch installed on forward external service panel.	No	Minor Normals	HO				A	A
32 Landing Gear	No antiskid test switch. Revised antiskid test procedure.	No	Yes Normals		ST, TCBI, SU, VT			B	B
32 Landing Gear	NWS deflection is +/- 80° with tiller and rudder pedal movement will deflect NW +/- 8°.	No	No	HO				A	A
32 Landing Gear	Increased tire speed limit.	No	No	HO				A	A
33 Lights	Overhead panel dome lights installed.	No	No	HO				A	A
33 Lights	Single nose-landing light.	No	No	HO				A	A
33 Lights	Three exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	No "EMER LTS OFF" light on panel. "EMER LTS OFF" caution message only	No	Minor Normals Abnormal	HO				A	A
34 Navigation	No Mach transducer or selector valves in pitot static system.	No	Minor Normals	HO				A	A
34 Navigation	One electronic integrated standby indicator provides airspeed, altitude, attitude, slip/skid, and localizer/glideslope information	No	Minor Normals	HO				A	A
35 Oxygen	Overboard discharge indicator located on left side of fuselage	No	No	HO				A	A
36 Pneumatic	New flight deck bleed air panel. Engine bleed air taken from either 6 th or 10 th stage to supply common manifold. Bleed air selection is automatic when in "AUTO" mode. Provisions for manual switching.	No	Yes Normals/ Abnormal		ST, TCBI, SU, VT			B	B
36 Pneumatic	Power on automatic bleed air leak detection test.	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> • 40 kVA GEN. • No APU intake door “MID” EICAS indication. • Dedicated APU fuel pump. • APU fuel supply, left collector tank. • “AVAIL” light = ready for electrical loading, ECU determines when pneumatic loading is available. • No fire horn. • Start cycle. 	No	No		ST, TCBI, SU, VT			A	B
52 Doors	<ul style="list-style-type: none"> • Four overwing emergency exits. • Minor changes to doors synoptic page and EICAS messages. 	No	Minor Messages	HO				A	A
71 Powerplant	FADEC-controlled.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5		B	B
71 Powerplant	N ₁ and N ₂ sync control panel.	No	Minor Normals Abnormal	HO				A	A
71 Powerplant	FADEC-controlled start cycle for ATS and windmill starts.	No	Minor Normals			ICBI, CSS, CPT, FTD 2-5		B	B
71 Powerplant	T/Rs hydraulically-actuated. No thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	No emergency stow PBAs.	No	Minor Normals		ST, TCBI, SU, VT			B	B
71 Powerplant	High-power schedule PBA.	No	Yes		ST, TCBI, SU, VT			B	B
71 Powerplant	FADEC generated thrust limits for: (automatic with thrust levers in respective detent). <ul style="list-style-type: none"> • TO. • FLX. • CLB. • GA. • MCT. • CRZ (manually set in the cruise range). 	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Engine oil test panel removed. Engine oil level quantities provided on menu page	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
AFCS	Initial takeoff pitch is optimized to takeoff V speeds.	No	No		ST, TCBI, SU, VT			B	B
Taxi	Turning radius decreased.	No	No	HO				A	A
Takeoff	Rotation rate is 3° to 5° per second towards target pitch attitude.	No	No	HO				A	A
Takeoff	<ul style="list-style-type: none"> Throttles placed in “TOGA” detent and thrust is set into N₁ caret by FADEC. Throttles placed in “CLB” detent and trust is set into N₁ caret by FADEC. 	No	No			CSS, PTT, FTD 2-5		B	B
Takeoff	Flap Retraction: <ul style="list-style-type: none"> Flaps 8 takeoff - flaps retracted to “1” from “8” at V₂ + 12 and to “0” from “1” at V_{FTO} -15 kts. Flaps 20 takeoff – flaps retracted to “8” from “20” at V₂ + 12 and to “1” from “8” at V₂ + 20 and then to “0” from “1” at V_{FTO} –15 kts. 	No	Yes Normals			CSS, PTT, FTD 2-5		C*	B
Approach	Approach Attitude Comparison <u>CRJ200</u> <u>CRJ705</u> SE Normal N/A Flapless (Slats 20) Normal Slatless (Flaps 45) Flapless SE	Yes	No		VT			B	A
Landing	More pronounced flare.	Yes	No		VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____					COMPLIANCE METHOD				
					TRAINING			CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> • 87 ft, 10 in (26.77 m). • Decrease of 31 ft, 1 in (9.47 m). Wingspan: <ul style="list-style-type: none"> • 69 ft, 6 in (21.21 m). • Decrease of 12 ft, 1 in (3.66 m). Tailspan: <ul style="list-style-type: none"> • 20 ft, 4 in (6.20 m). • Decrease of 7 ft, 8 in (2.23 m). Height: <ul style="list-style-type: none"> • 20 ft, 8 in (6.30 m). • Decrease of 3 ft, 11 in (1.19 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> • 53,000 lb (24,041 kg). • Decrease of 31,500 lb (14,288 kg). MLW: <ul style="list-style-type: none"> • 47,000 lb (21,319 kg). • Decrease of 28,100 lb (12,746kg). Fuel Capacity: <ul style="list-style-type: none"> • 2151 U.S. gal (8,142 L). • Decrease of 751 gal (2,835 L). 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> • 10 ft, 4 in (3.15 m). • Decrease of 3 ft, 2 in, (0.96 m). Nose to Main Wheels: <ul style="list-style-type: none"> • 36 ft, 4 in (11.07 m). • Decrease of 12 ft. (3.66 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> • GE CF34-3B1. • 9,220 lb of thrust, APR. • Decrease of 5,290 lb of thrust. 	No	No	HO				A	A
Aircraft General	No forward cargo bay.	No	Minor	HO				A	A
Aircraft General	Decrease of 25 passengers in payload capacity.	No	No	HO				A	A
Aircraft General	One flight attendant position.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
24 Electrical Power	Architectural differences.	No	Minor (Ext. DC)		ST, TCBI, SU, VT			A	A
27 Flight Controls	No slats on wings.	Minor	Yes Normals	HO				A	A
49 Airborne Auxiliary Power	Located in aft equipment bay. Intake, exhaust, or hazard areas.	No	Minor Normals	HO				A	A
52 Doors	Two overwing emergency exits.	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> • APU operating limits. • Engine parameters. • Gear extension speed. • Windshield wipers. • Single pack Ops. • Crosswind. • Cargo (fire). • Cold soak (T/Rs). • These are not all-inclusive. 	No	Yes Limits		ST, TCBI, SU, VT			B	B
Limitations	M _{MO} above FL 340 is 0.85 Mach. Increase of 0.01 Mach.	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
21 Air Conditioning	No recirculation feature.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated avionics bay-cooling system with fan control.	No	Minor Normals		ST, TCBI, SU, VT			B	A
21 Air Conditioning	Cabin actual temperature indications only.	No	Minor Normals	HO				A	A
21 Air Conditioning	Dedicated cargo bay fan.	No	Minor Msg.	HO				A	A
21 Air Conditioning	<ul style="list-style-type: none"> Architectural differences: two pneumatically controlled outflow or safety valves. Overboard and inboard ground valves. 	No	No	HO				A	A
24 Electrical Power	<ul style="list-style-type: none"> CB Panels 3 and 4 on flight deck; 30 kVA GEN (load-shedding for failed GEN). GEN switches (3) manually selected from "OFF" to "ON" after engine start. Two AC utility buses, load shed under certain conditions. No ACPC installed, individual relays accomplish switching. 5 - 100A TRUs instead of 4 - 120A TRUs. Bus Ties 1 and 2 are automatic. "ESS Tie" is manually selected. Switchlights on electrical power service panel. Service bus powered from SERV TRU. Two DC utility buses. DC external power plug with external DC switchlight on electrical panel. ADG feeds directly to AC essential bus. System affected during AC power transfer (loss of AC Bus 2). Battery chargers, battery location. 	No	Minor Normals, Abnormal, Emergency		ST, TCBI, SU, VT			B	B
26 Fire Protection	Non-automated testing procedure.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
26 Fire Protection	<ul style="list-style-type: none"> Jet pipe OVHT detection. Emergency Procedure (Recall). 	No	Msg.		ST, TCBI, SU, VT			B	B
27 Flight Controls	Dedicated spoileron control surface and dedicated flight spoiler control surface.	No	No	HO				A	A
27 Flight Controls	Flutter dampers on elevators.	No	No	HO				A	A
27 Flight Controls	No rudder limiter.	No	No	HO				A	A
27 Flight Controls	No power up BITE test or "SPLR/STAB IN TEST" advisory message.	No	Minor Normals	HO				A	A
27 Flight Controls	No emergency flap switch.	No	Yes Abnormal	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
27 Flight Controls	Flap lever has 5 positions.	No	Minor Normals	HO				A	A
28 Fuel	Gravity refuel capability on center tank.	No	Yes	HO				A	A
28 Fuel	Shared APU and crossflow fuel pump.	No	No	HO				A	A
28 Fuel	Bulk fuel temperature sensor in left main tank.	No	No	HO				A	A
29 Hydraulic Power	1B or 2B pump is load shed when respective GEN is not operating.	No	Minor Abnormal	HO				A	A
29 Hydraulic Power	No hydraulic SOV switches.	No	Minor Abnormal	HO				A	A
30 Ice and Rain Protection	Cowl anti-icing valves pressure regulated with overpressure protection (anti-ice blowout plug on engines).	No	Minor Normals	HO				A	A
30 Ice and Rain Protection	Revised architecture for cowl anti-icing duct leak detection in pylon area.	No	Minor	HO				A	A
30 Ice and Rain Protection	Air data probes and sensor anti-icing not tested.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-icing two operating temperature modes "NORM" and "STBY" are manually selectable.	No	Minor Abnormal		ST, TCBI, SU, VT			B	A
30 Ice and Rain Protection	Amber arcs on the N ₂ gauges. Range from 0 -78%.	No	No	HO				A	A
30 Ice and Rain Protection	Wing anti-ice system test switch.	No	Minor Normals		ST, TCBI, SU, VT			B	B
30 Ice and Rain Protection	Architectural differences on synoptic page.	No	No	HO				A	A
30 Ice and Rain Protection	Cowl and wing anti-ice deactivated during T/R deployment.	No	No	HO				A	A
32 Landing Gear	Nose doors are powered by hydraulics.	No	Minor Normals			FTD 2-5		B	A
32 Landing Gear	Trailing link assemblies on main gear without shimmy dampers.	No	No	HO				A	A
32 Landing Gear	Decreased tire speed limit.	No	No	HO				A	A
32 Landing Gear	Main gear pin dust cover.	No	Minor Normals	HO				A	A
32 Landing Gear	"FLT or NORM" switch on forward external service panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A
32 Landing gear	Antiskid test switch. Parking brake "OFF."	No	Yes Normals		ST, TCBI, SU, VT			B	A
32 Landing gear	NWS deflection is +/- 70° with tiller and rudder pedal movement will deflect NW +/- 5°.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
33 Lights	No overhead panel dome lights.	No	No	HO				A	A
33 Lights	Dual nose landing lights.	No	No	HO				A	A
33 Lights	Four exterior lights per side for emergency exit lighting.	No	No	HO				A	A
33 Lights	“EMER LTS OFF” light on the “EMER LTS” panel illuminates coincident with the “EMER LTS OFF” caution message.	No	Minor Normals	HO				A	A
34 Navigation	Mach transducer and selector valves in pitot static system.	No	Minor Abnormal	HO				A	A
34 Navigation	Two separate standby instruments provide airspeed, altitude, attitude, slip/skid, and localizer/glideslope information.	No	Minor Normals		ST, TCBI, SU, VT			B	B
35 Oxygen	Overboard discharge indicator located on right side of fuselage.	No	No	HO				A	A
36 Pneumatic	T/Rs are powered by 14 th stage bleed air.	No	No		ST, TCBI, SU, VT			B	B
36 Pneumatic	10 th and 14 th stage bleed air systems controlled by manual manipulation of bleed air switches with APU interlock protection system.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
36 Pneumatic	<ul style="list-style-type: none"> 10th stage manifold services: air conditioning, engine starting. 14th stage manifold services: anti-ice systems. Single pack Ops. 	No	Yes Abnormal		ST, TCBI, SU, VT			B	B
36 Pneumatic	Bleed air leak detection test conducted first flight of the day.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
49 Airborne Auxiliary Power	<ul style="list-style-type: none"> 30 kVA GEN. APU intake door EICAS indications: “CLSD,” “MID,” and “OPEN.” Shared APU and crossflow fuel pump. Fuel supply, both wing tanks. AVAIL light = ready for pneumatic loading, APU GCU determines when electrical loading is available. Fire horn; start cycle. 	No	Yes Normals Abnormal Emergency		ST, TCBI, SU, VT			B	A
52 Doors	<ul style="list-style-type: none"> Two overwing emergency exits. Minor changes to doors synoptic page and EICAS messages. 	No	Minor Messages	HO				A	A
71 Powerplant	Hydro-mechanical and N ₁ speed-governing.	No	No		ST, TCBI, SU, VT			A	A
71 Powerplant	APR and ENG SPEED control panel.	No	Yes Normals		ST, TCBI, SU, VT			A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2B19 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
71 Powerplant	Thrust lever retarder control system.	No	No		ST, TCBI, SU, VT			B	B
71 Powerplant	Emergency stow PBAs for T/Rs.	No	Yes Normals Emergency			FTD 2-5		C	B
71 Powerplant	Pilot-managed start cycles for ATS and windmill starts.	No	Yes Normals	HO				A	A
71 Powerplant	FMS generated-thrust limits for: manually set, no detents. <ul style="list-style-type: none"> • TO. • FLX. • CLB. • GA. • MCT. • CRZ. 	No	Minor Normals			ICBI, CSS, CPT, PTT, FTD 2-5		C	B
71 Powerplant	High-power schedule PBA.	No	Yes	HO				A	A
71 Powerplant	Oil level test panel.	No	Minor Normals		ST, TCBI, SU, VT			B	A

DIFFERENCE AIRCRAFT: CL-600-2B19 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
AFCS	FD target pitch attitude on takeoff is 15° up and GA or SE takeoff is 10° up.	No	No		ST, TCBI, SU, VT			B	A
Taxi	Turning radius decreased.	No	No	HO				A	A
Takeoff	Rotation rate is 3° per second towards target pitch attitude.	No	No	HO				A	A
Takeoff	Throttles manually placed in thrust caret, set by FMS.	No	No			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Takeoff	No Flap 1 Position: No requirement to monitor V _{FTO} -15 airspeed for flap retraction from Flap 8 to Flap 1.	No	Yes Normals			ICBI, CSS, CPT, PTT, FTD 2-5		B	B
Approach	Approach Attitude Comparison <u>CRJ705</u> <u>CRJ200</u> Normal SE Flapless (Slats 20) N/A Slatless (Flaps 45) Normal SE Flapless	No	No		VT			B	B
Landing	Minimal flare required.	No	No		ST, TCBI, SU, VT			B	B

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 118 ft, 11 in (36.24 m). Increase of 12 ft, 3 in (3.73 m). Wingspan: <ul style="list-style-type: none"> 81 ft, 7 in (24.87 m). Increase of 5 ft, 4 in (1.62 m). Tailspan: <ul style="list-style-type: none"> 28 ft. (8.54 m). No change. Height: <ul style="list-style-type: none"> 24 ft, 07 in (7.49 m). Decrease of 3 in (0.08 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 84,500 lb (38,329 kg). Increase of 9,500 lb (4,309 kg). MLW: <ul style="list-style-type: none"> 75,100 lb (34,065 kg). Increase of 8,100 lb (3,674 kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). No change. 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 6 in (4.0 m). No change. Nose to Main Wheels: <ul style="list-style-type: none"> 48 ft, 4 in (14.73 m). Increase of 7 ft, 6 in (2.29 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C5. 14,510 lb of thrust, APR. Increase of 720 lb of thrust. 	No	No	HO				A	A
Aircraft General	Increase of 5 passengers in payload capacity.	No	No	HO				A	A
52 Doors	Additional forward cargo bay doors (2 Total).	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
52 Doors	<ul style="list-style-type: none"> Two additional overwing emergency exits (4 total). Minor EICAS changes. 	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> Engine parameters. Flap 20 V_{FE}. Tire speed. Ground turning radius. These are not all-inclusive. 	No	Yes Limits	HO				A	A
Limitations	<ul style="list-style-type: none"> M_{MO} above FL 340 is 0.84 Mach. Decrease of 0.01 Mach. 	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Larger winglets.	No	No	HO				A	A
27 Flight Controls	<ul style="list-style-type: none"> New Slat/Flap 20 relationship. When Flap 20 selected, slats are 20°. 	No	No	HO				A	A
27 Flight Controls	When emergency slats or flaps switch selected, slats are driven to 20° and flaps to 20°.	No	No	HO				A	A
32 Landing Gear	Tire speed increased.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D15 BASE AIRCRAFT: CL-600-2C10 APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Taxi	Increased taxi-turning radius.	No	No	HO				A	A
Landing	More pronounced flare.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	<u>Fuselage</u> Length: <ul style="list-style-type: none"> 106 ft, 8 in (32.51 m). Decrease of 12 ft, 3 in (3.73 m). Wingspan: <ul style="list-style-type: none"> 76 ft, 3 in (23.24 m). Decrease of 5 ft, 4 in (1.62 m). Tailspan: <ul style="list-style-type: none"> 28 ft, 0 in (8.54 m). No change. Height: <ul style="list-style-type: none"> 24 ft, 10 in (7.57 m). Increase of 3 in (0.08 m). 	No	No	HO				A	A
Aircraft General	<u>Performance</u> MTOW: <ul style="list-style-type: none"> 75,000 lb (34,020 kg). Decrease of 9,500 lb (4,309 kg). MLW: <ul style="list-style-type: none"> 67,000 lb (30,390 kg). Decrease of 8,100 lb (3,674 kg). Fuel Capacity: <ul style="list-style-type: none"> 2,902 U.S. gal (10,977 L). No change. 	No	No	HO				A	A
Aircraft General	<u>Wheel Base</u> Main Wheel Track: <ul style="list-style-type: none"> 13 ft, 2 in (4.0 m). No change. Nose to Main Wheels: <ul style="list-style-type: none"> 40 ft, 10 in (12.44 m). Decrease of 7 ft, 6 in (2.29 m). 	No	No	HO				A	A
Aircraft General	<u>Powerplant</u> <ul style="list-style-type: none"> GE CF34-8C1 or GE CF34-8C5B1. 13,790 lb of thrust, APR. Decrease of 720 lb of thrust. 	No	No	HO				A	A
Aircraft General	Decrease of 5 passengers in payload capacity.	No	No	HO				A	A
52 Doors	One forward cargo bay door.	No	Minor Normals	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
52 Doors	<ul style="list-style-type: none"> Two fewer overwing emergency exits (2 total). Minor EICAS changes. 	No	No	HO				A	A
Limitations	<ul style="list-style-type: none"> Engine parameters. Flap 20 V_{FE}. Tire speed; Ground turning radius. These are not all-inclusive. 	No	Yes Limits	HO				A	A
Limitations	<ul style="list-style-type: none"> M_{MO} is 0.85M above FL 340. Increase of 0.01M. 	No	Yes Limits	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Smaller winglets.	No	No	HO				A	A
27 Flight Controls	<ul style="list-style-type: none"> New Slat/Flap 20 relationship. When Flap 20 selected, slats are 25°. 	No	No	HO				A	A
27 Flight Controls	When emergency slats/flaps switch is selected, the slats are driven to 25° and flaps to 20°.	No	No	HO				A	A
32 Landing Gear	Tire speed reduced.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C10 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Taxi	Decreased taxi-turning radius.	No	No	HO				A	A
Landing	Less pronounced flare.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2D24 BASE AIRCRAFT: CL-600-2D15 APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	Increase of 15 passengers in payload capacity.	No	No	HO				A	A
Aircraft General	Decrease of 15 passengers in payload capacity.	No	No	HO				A	A

DIFFERENCE AIRCRAFT: CL-600-2C11 (CRJ550) BASE AIRCRAFT: CL-600-2C10 (CRJ700/701/702) APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHK/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
Aircraft General	New aircraft Model CL-600-2C11.	No	No	A				A	A
Aircraft General	Limitation to fifty (50) or fewer passenger seats.	No	No	A				A	A
Aircraft General	Maximum certified gross takeoff weight (GTOW) of 65,000 lb.	No	No	A				A	A
Aircraft General	Three class cabin.	No	No	A				A	A
Aircraft General	New aircraft data plate identifying the aircraft Model (CL-600-2C11) and Series (CRJ550).	No	No	A				A	A
Aircraft General	New MTOW placard on FS280 bulkhead at the entrance of the flight deck, to reflect 65,000 lb.	No	No	A				A	A
Aircraft General	New airspeed limits placard inside flight deck, to reflect design maneuvering speed (V _A) at 65,000 lb.	No	No	A				A	A
Aircraft General	Revision 27 (RS-347) to existing CL-600-2C10 AFM (CSP B-012) to introduce two new option codes: <ul style="list-style-type: none"> Option code <1550> to introduce the new CL-600-2C11 aircraft Model and <i>CRJ550</i> branding, and 50 passenger limitation. Option code <1251> for Customer Option CR670-00-255 with new Maximum Ramp Weight (MRW)/MTOW/MLW/Maximum Zero Fuel Weight (MZFW) values and weight/center of gravity (CG) envelope, Supplement 1 noise data, and performance data. 	No	No	A				A	A

APPENDIX 3. COMPLIANCE CHECKLIST (CL-600-2B19)

The prototype aircraft, Serial No. 7003, which the FSB evaluated on November 2-5, 1992, was not fully representative of an U.S. production version airplane. Therefore, the FSB was unable to determine compliance with applicable parts 91 and 121 operating requirements at that time. In November 1993, Canadair submitted a checklist to the FSB indicating how the aircraft complies with parts 91 and 121. The FSB was not able to validate that checklist. The checklist is available on request from the Transport Aircraft Long Beach AEG and is included in this report for informational purposes only.

APPENDIX 4. COMPLIANCE CHECKLIST (CL-600-2C10)

Results of the evaluation conducted on Serial No. 10004 on November 3, 2000. The checklist is available on request from the Transport Aircraft Long Beach AEG. It is provided for informational purposes only.

APPENDIX 5. COMPLIANCE CHECKLIST (CL-600-2D24)

These are the results of a physical evaluation conducted by the FSB on CL-600-2D24 (Serial No. 15001) on October 7, 2002 in Wichita, KS. It must be noted that at the time of the evaluation, the CL-600-2D24 had received a Transport Canada Type Certificate (TC), but had not yet started FAA type certification flight testing. Therefore, it did not hold an FAA TC. This explains most of the “Does not comply” or “Not demonstrated” FSB findings herein.

In November 2002, the CL-600-2D24 received an FAA TC. Bombardier then submitted updated positions to the FSB on many of the “Does not comply” or “Not demonstrated” items. Bombardier’s updated positions are listed in Appendix 6, Bombardier Update to Compliance Checklist (CL-600-2D24). The FSB did not validate Appendix 6, but has included it for informational purposes only. The checklist is available only on request from the Transport Aircraft Long Beach AEG. It is provided for informational purposes only.

Please see Section 9 of this report for more information on this checklist.

APPENDIX 6. BOMBARDIER UPDATE TO COMPLIANCE CHECKLIST (CL-600-2D24)

In November 2002, the CL-600-2D24 received an FAA TC. Bombardier then submitted updated positions to the FSB on many of the “Does not comply” or “Not demonstrated” items listed in Appendix 5. Those updated items are listed in Appendix 5. The FSB did not validate this appendix, but has included it for informational purposes. The checklist is available on request from the Transport Aircraft Long Beach AEG. It is provided for informational purposes only.

APPENDIX 7. HEAD-UP GUIDANCE SYSTEM (HGS): CL-600-2B19, CL-600-2C10, CL-600-2D15, CL-600-2D24

1. BACKGROUND

- 1.1 HGS (CL-600-2B19 Only).** The Flight Dynamics HGS was evaluated by the FSB in April 1996. Only the CAT IIIa approach mode was certified. Takeoff, climb, cruise, descent, and visual meteorological conditions (VMC) modes were not certified. In 2001, Rockwell Collins/Flight Dynamics applied to the FAA and received Supplemental Type Certificate (STC) No. SA2930NY-T for what they called a “Phase II” HGS. This Phase II HGS added all phases of flight functions to the previously approved HGS. The FSB conducted an evaluation of the Phase II HGS in April 2001 and found it operationally acceptable.
- 1.2 HGS (CL-600-2C10/11 Only).** In 2001, Rockwell Collins/Flight Dynamics also applied to the FAA for an STC for an HGS on the CL-600-2C10. STC #ST8557LA-T was issued in 2002 after the FSB conducted an evaluation.
- 1.3 HGS (CL-6002D15 and CL-6002D24 Only).** In 2005, Rockwell Collins/Flight Dynamics applied to the FAA for an STC for a HGS on the CL-600-2D15 and CL-600-2D24. STC No. ST01390LA was issued in July 2006 after the FSB conducted an evaluation. The Rockwell Collins/Flight Dynamics Model 4200 HGS is approved for use during all phases of flight. The HGS has been shown to meet the requirements for CAT III approach, landing, and rollout contained in AC 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout. It also meets the requirements of AC 120-28 as a primary reference aid for Low Visibility Takeoff (LVTO) when Litton LTN-101 Inertial Reference Units (IRU) are installed. In December 2006, Rockwell Collins requested that the FAA certificate Improved Symbology for the Rockwell Collins 4200 HGS Takeoff Pitch Target and for LVTO with Honeywell LASEREF V installed. An FSB evaluation was conducted using the improved symbology and the Honeywell LASEREF V for LVTO. It was found during the evaluation that the requirements of AC 120-28 as a primary reference aid for LVTO were met. A revision to STC No. ST01390LA was issued to Rockwell Collins in May 2007.

2. HGS TRAINING PROGRAM

NOTE: Criteria listed below applies to the CL-600-2B19 (Original and Phase II) and the CL-600-2C10, CL-600-2C11, CL-600-2D15, and CL-600-2D24 Rockwell Collins/Flight Dynamics HGS. In the case of the CL-600-2C10, CL-600-2D15, and CL-600-2D24 HGS, special emphasis should be placed on the ground roll guidance comparison with the localizer deviation scale. It is possible, under some circumstances, for the ground roll guidance symbol to be on the left side of the HGS display and for the localizer deviation scale to be on the right side of the HGS display. It is important that a pilot be able to quickly determine his or her location on the runway.

2.1 Training Requirements. The HGS pilot training requirements consists of those related to initial and recurrent ground and flight training. Unless covered concurrently during an initial or transition type rating course, a prerequisite to beginning this course of training is prior training, qualification, and currency in the CL-600-2B19 or CL-600-2C10. It should be noted that the program focuses principally upon training events flown in the left seat by the PIC in 14 CFR part 121 operations. Nevertheless, second in command (SIC) indoctrination and training is also essential.

2.1.1 Initial Ground Training. For airline operators, initial training should be conducted in accordance with the applicable provisions of part 121, §§ 121.415, 121.419, 121.424, and AC 120-28, and the airline operation specifications. For all operators, the initial ground training program should include the following elements:

2.1.1.1 Classroom instruction covering HGS operational concepts, crew duties and responsibilities, and operational procedures, including preflight, normal, and non-normal pilot activities. For operators wishing credit for low visibility operations predicated on use of the HGS, information should be provided on the operational characteristics, capabilities, and limitations of the ground facilities (Surface Movement Guidance and Control System (SMGCS)) and airborne CAT III system. Airline policies and procedures concerning low visibility operations should include a reporting process, minimum equipment list (MEL) issues, operation following a missed approach, OE, and currency requirements.

2.1.1.2 Classroom instruction or computer-based training (CBT) on the HGS symbology set and its interrelationship with airplane aerodynamics, inertial factors, and environmental conditions.

2.1.1.3 An HGS pilot training manual or equivalent material in the operations manual, which explains all modes of operation, the use of various HGS controls, clear descriptions of HGS symbology, including limit conditions and failures, and incorporating a crew procedures guide clearly delineating pilot flying (PF) and pilot monitoring (PM) duties, responsibilities, and procedural callouts and responses during all phases of flight during which HGS operations are anticipated. Emphasis on the availability and limitations of visual cues encountered on approach both before and after decision height (DH). This would include:

- a) Procedures for unexpected deterioration of conditions to less than minimum Runway Visual Range (RVR) encountered during approach, flare, and rollout.
- b) Demonstration of expected visual references with weather at minimum conditions.
- c) Expected sequence of visual cues during an approach in which visibility is at or above landing minima.

2.1.1.4 A multimedia system capable of a dynamic real-time demonstration of all modes of operation complete with sound. For operators wishing credit for low visibility operations predicated on use of the HGS, this should include narrative descriptions and several low weather approach demonstrations with procedural callouts and responses. All critical procedural callout possibilities should be covered.

2.1.1.5 If the HGS is used as a CAT II or III landing system, emphasis on the need for rigorous crew discipline, coordination, and adherence to procedural guidelines as is required for other CAT II or III landing systems.

2.1.2 Initial Flight Training. Unless integrated with initial or transition type rating training, flight training dedicated to HGS familiarization and proficiency is in addition to other required elements. For part 121 operators, initial flight training should be conducted in accordance with the applicable provisions of § 121.424. When an FFS is used, only FAA-approved CL-600-2B19 or CL-600-2C10 (changeable to CL-600-2D15 and/or CL-600-2D24) FFSs with both a visual and the HGS installed may be used. For flight simulator training, all required approaches should be flown from no closer than the final approach fix (FAF) for instrument approaches and from no closer than approximately 1,000 ft AGL (3 to 4 nautical miles (NM)) to the runway threshold for visual approaches. The following flight training program is generic in nature and should not be construed to dictate what the flight course of instruction must consist of. Each operator has its own unique requirements, route structure, fleet composition, and operations policies to consider in developing its training program. Therefore, what follows might be considered as a guide to an operator who is tailoring an HGS training program to fit his or her own needs.

2.1.2.1 Airwork should include:

- a) Straight and level flight, accelerations, and decelerations.
- b) Normal and steep turns, climbs, and descents.
- c) Stall prevention and recovery and unusual attitudes.
- d) Vectors to intercept and track selected very high frequency omni-directional range (VOR) courses.
- e) For aircraft with the 4200 Series HGS, include TCAS events and ground proximity events.

NOTE: Emphasis should be placed on HGS unique symbology (i.e., flightpath, flightpath acceleration, airspeed error tape, Angle of Attack (AOA) limit bracket, and excessive pitch chevrons). When this training is complete, the trainee should have a thorough understanding of the relationship between aircraft flightpath parameters and the HGS symbology.

2.1.2.2 Visual Approaches (VMC mode):

- a) Perform multiple “night visual” approaches with the Head-Up Guidance Control Panel (HCP) set to different slope angles.
- b) Straight-in landings, no wind, repeat with 15 kts crosswind and at night.
- c) Circling approaches only if authorized by operations specification (OpSpec) or at 1000 and 3 with a 10 kts crosswind.

NOTE: It is desirable to fly half of these approaches at different airports that have dissimilar approach and runway lighting systems. Special emphasis should be placed on optimizing circling approach techniques and procedures. Approaches with the aircraft in a non-normal flap configuration should be included.

2.1.2.3 Instrument Approaches.

- a) For all operators:
 - Perform approach to operators approved CAT I approach minimums with wind set at max authorized.
 - Demonstrate failures and incorrect settings on approach (i.e., miss-set runway elevation, airspeed, and selected course).
 - Illustrate unique characteristics of symbology in wind shear conditions (i.e., erratic wind speed and direction, flightpath, flightpath acceleration, and speed error).
 - Nonprecision approaches to the operators lowest approved nonprecision approach minima with a 15 kts crosswind.
- b) For operators wishing credit for low visibility operations predicated on use of the HGS:
 - Perform CAT II and/or CAT III (if operator is authorized CAT III) approaches to the operator’s lowest minima authorized with 10 kts crosswind.
 - CAT III ILS flown to the lowest RVR and DH minimums authorized with a 10 kts crosswind.
 - CAT III ILS with 0/0 weather. After touchdown, raise weather to demonstrate position on runway.
 - CAT III ILS with various reasons for a missed approach (system downgrade, “APCH WARN”, etc.).
 - CAT III ILS with various RVRs and crosswinds, include light turbulence.
 - Approach to CAT III minimums, with a go-around at minimums and subsequent failure of HGS symbology.

NOTE: Several of the instrument approaches should include a variety of ground and airborne system failures requiring pilot recognition and appropriate procedural actions. Demonstrations of system or component failures could include flap asymmetry problems, engine-out operations, HGS sensor failures, etc. Demonstrate how HGS failure modes can reduce precision and increase pilot workload unless PF or PM duties and responsibilities are clearly delineated and understood.

2.1.2.4 For operators wishing credit for LVTO operations predicated on the use of the HGS:

- a) Normal takeoff, clear, and calm, repeated with gusty winds.
- b) Crosswinds should be trained to the max authorized (15 kts).
- c) Takeoff, 600 ft RVR, with crosswind.
- d) Takeoff, 300 ft RVR, with crosswind engine failure prior to takeoff decision speed (V_1).
- e) Takeoff, 300 ft RVR with crosswind, engine failure after V_1 .
- f) Takeoff with HGS failure, 300 ft RVR.
- g) Takeoff at 300 ft RVR with HGS failure after V_1 (so the pilot continues the takeoff without HGS information).

2.1.3 Approaches. The applicant must complete five CAT III approaches to CAT III minimums under the supervision of an authorized check pilot. An additional five approaches must be completed within 60 days of completion of those observed by the check pilot. All previously qualified (in aircraft) pilots should be certified upon satisfactory completion of the HGS ground and flight training programs. All initial, upgrade, and transition PICs must be observed by a check pilot during their OE. This requirement should include three HGS-assisted takeoffs, one visual approach, and three instrument approaches in conditions not less than 1,800 ft RVR.

2.1.3.1 For all operators, prior to utilizing the HGS for approach operations in instrument meteorological conditions (IMC) below 1,800 ft RVR, each PIC must accomplish at least 10 approaches to CAT II or III minima in weather conditions, which are not less than published straight-in CAT I minima. Each approach must terminate in a manually controlled HGS-assisted landing or HGS-assisted go-around. Of these 10 approaches, a minimum of five must be accomplished under the observation of a check pilot.

2.1.3.2 Prior to utilizing the HGS for takeoff operations in IMC conditions below 500 ft RVR, each PIC must accomplish at least 10 HGS-assisted takeoffs in weather conditions, which are not less than 500 ft RVR. Of these 10 takeoffs, a minimum of five must be accomplished under the observation of a check pilot.

3. CURRENCY REQUIREMENTS

For operators wishing credit for low visibility operations on use of the HGS, during the 6-month recurrent training and proficiency checks, the following low visibility operations should be performed in addition to regular requirements:

- a) One approach conducted to CAT III minimums with a landing at the lowest authorized minima, crosswind 15 kts.
- b) One approach to CAT III minimums with a missed approach at 50 ft DH and loss of HGS on the go-around.
- c) If using a 4200 Series HGS, and an OpSpec authorizes SE CAT III approach operations, one approach must be conducted with one-engine-inoperative (OEI) to CAT III minima.
- d) One takeoff at the lowest authorized HGS minimums with an abort prior to V₁.
- e) One takeoff at the lowest authorized HGS minimums with an engine failure after V₁.

APPENDIX 8. NON-APPLICABILITY REGULATORY TRAINING REQUIREMENTS AND SEAT-DEPENDENT TASK TRAINING

1. Non-Applicability Regulatory Training.
 - a) Emergency Training. Removal from the airplane (or training device) of each type of liferaft, if applicable. No substitute; not installed on aircraft.
 - b) Emergency Training. Transfer of type of slide or raft pack from one door to another. No substitute; not installed on aircraft.
 - c) Emergency Training. Deployment, inflation, and detachment from the airplane (or training device) of each type of slide or raft pack and emergency evacuation, including the use of a slide. No substitute; not installed on aircraft.
 - d) Ground Training. Propeller training. No substitute; propeller not installed on aircraft.
 - e) Ground Training. Operations of systems and controls at the flight engineer's station. No substitute; not installed on aircraft.
 - f) Flight Training. Operations of systems and controls at the flight engineer's station. No substitute; flight engineer's station not installed.
 - g) Flight Training. No substitute; fuel jettisoning system not installed on aircraft.
2. Seat-Dependent Task Training. Pilots must receive training in these seat-dependent tasks:
 - a) Left Pilot Seat. Taxiing the aircraft using the tiller from the left seat.