



U.S. Department of Transportation  
Federal Aviation Administration  
Washington, DC

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## Flight Standardization Board (FSB) Report

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Revision: 10  
Date: 09/04/2019

Manufacturer  
**Embraer S.A.**

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
T00011AT	EMB-145 EMB-145ER EMB-145MR EMB-145LR EMB-145MP EMB-145EP	ERJ-145	EMB-145
T00011AT	EMB-145XR	ERJ-145XR	EMB-145
T00011AT	EMB-135LR EMB-135ER	ERJ-135	EMB-145
T00011AT	EMB-135KE EMB-135KL	ERJ-140	EMB-145
T00011AT	EMB-135BJ	Legacy 600 Legacy 650	EMB-145

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## 1. RECORD OF REVISIONS

Revision Number	Section(s)	Page(s) Affected	Date
1	All	All	06/30/1999
2	All	All	09/30/1999
3	All	All	06/12/2001
4	All	All	06/26/2002
5	All	All	04/20/2011
6	Appendix 1 and 2	Appendix 1 and 2	06/13/2013
7	Appendix 2	Appendix 2	07/21/2014
8	All	All	08/17/2016
9	All	All	02/23/2018
10	3, 5, 7, 9, 10, 12, 13, Appendices 2 and 3	3, 4, 6, 7, 8, 9, 10, 13, 17, and 18	09/04/2019

## 2. INTRODUCTION

Aircraft Evaluation Groups (AEG) are responsible for working with aircraft manufacturers and modifiers during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine:

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

This report lists those determinations for use by:

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

## 3. HIGHLIGHTS OF CHANGE

The purpose of this new Embraer S.A. EMB-135/145 revision is to add special emphasis training in the area of uncommanded swerving on ground as well as update the Differences Tables to include autothrottle (AT) differences training and checking requirements relating to the EMB-135BJ.

## 4. BACKGROUND

The Transport Aircraft Seattle AEG formed various Flight Standardization Boards (FSB) that evaluated the EMB-145 and EMB-145 aircraft variations, as defined in FAA Type Certificate Data Sheet (TCDS) #T00011AT, between 1995 and 2001 using the methods described in FAA Advisory Circular (AC) 120-53 (as amended), Guidance for Conducting and Use of Flight Standardization Board Evaluations.

## 5. ACRONYMS

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ACFT	Aircraft
ACS	Airman Certification Standards
ADS-B	Automatic Dependent Surveillance-Broadcast
AEG	Aircraft Evaluation Group
AT	Autothrottle
AV	Audiovisual Presentation
BARO-VNAV	Barometric Vertical Navigation
CDU	Control Display Unit
CG	center of gravity
CPT	Cockpit Procedures Trainer
EICAS	Engine Indicating and Crew Alerting System
FAA	Federal Aviation Administration
FADEC	Full-Authority Digital Engine Control
FANS	Future Air Navigation System
FCU	Fuel Control Unit
FE	Flight Engineer
FFS	Full Flight Simulator (Level A or Higher)
FMS	Flight Management System
FSB	Flight Standardization Board
FSTD	Flight Simulation Training Device
FTD	Flight Training Device (Levels 4-6)
HO	Handout
ICBI	Interactive Computer-Based Instruction
LPV	Localizer Performance with Vertical Guidance
MDR	Master Differences Requirements
MFD	Multifunction Display
MFF	Mixed Fleet Flying
M <sub>MO</sub>	Maximum Operating Limit Speed
NAS	National Airspace System
OpSpecs	Operations Specifications
PFD	Primary Flight Display
POI	Principal Operations Inspector
psi	Pounds Per Square Inch
PTT	Part Task Trainer
RMS	Radio Management System
RMU	Radio Management Unit
RNP	Required Navigation Performance
SU	Stand-Up Instruction
TC	Type Certificate
TCBI	Tutorial Computer-Based Instruction
TCDS	Type Certificate Data Sheet
TLA	Thrust Lever Angle

## **6. DEFINITIONS**

These definitions are for the purposes of this report only.

- 6.1.** Base Aircraft. An aircraft identified for use as a reference to compare differences with another aircraft.
- 6.2.** Current. A crewmember meets all requirements to operate the aircraft under the applicable operating part.
- 6.3.** Differences Tables. Describes the differences between a pair of related aircraft and the minimum levels operators must use to conduct differences training and checking of crewmembers. Differences levels range from A to E.
- 6.4.** Master Differences Requirements (MDR). Specifies the highest training and checking differences levels between a pair of related aircraft derived from the Differences Tables.
- 6.5.** Mixed Fleet Flying (MFF). The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.
- 6.6.** Operational Evaluation. An AEG process to determine pilot type rating, minimum crewmember training, checking and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics and no-flap landing).
- 6.7.** Operational Suitability. An AEG determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 121, 133, and 135).
- 6.8.** Qualified. A crewmember holds the appropriate airman certificate and ratings as required by the applicable operating part.
- 6.9.** Related Aircraft. Any two or more aircraft of the same make with either the same or different type certificates (TC) that have been demonstrated and determined by the Administrator to have commonality.
- 6.10.** Seat Dependent Tasks. Maneuvers or procedures using controls that are accessible or operable from only one flightcrew member seat.
- 6.11.** Special Emphasis Area. A training requirement unique to the aircraft, based on a system, procedure, or maneuver, which requires additional highlighting during training. It may also require additional training time, specialized training devices, or training equipment.
- 6.12.** Specific Flight Characteristics. A maneuver or procedure with unique handling or performance characteristics that the FSB has determined must be checked.

## **7. PILOT TYPE RATING**

- 7.1. Type Rating. The type rating designation of EMB-135/145 and all variations is EMB-145.
- 7.2. Common Type Ratings. Not applicable.
- 7.3. Military Equivalent Designations. Military aircraft that qualify for the EMB-145 type rating can be found at [www.faa.gov](http://www.faa.gov/licenses_certificates/airmen_certification/) under “Licenses & Certificates,” “Airmen Certification,” “Online Services,” “Aircraft Type Rating Designators.” This webpage is kept up-to-date and can be found at [http://www.faa.gov/licenses\\_certificates/airmen\\_certification/](http://www.faa.gov/licenses_certificates/airmen_certification/).

## **8. RELATED AIRCRAFT**

- 8.1. Related Aircraft on Same TCDS. The EMB-145ER, EMB-145MR, EMB-145LR, EMB-145MP, EMB-145EP, EMB-145XR, EMB-135LR, EMB-135ER, EMB-135KE, EMB-135KL, and EMB-135BJ are related to the EMB-145.
- 8.2. Related Aircraft on Different TCDS. Not applicable.

## **9. PILOT TRAINING**

- 9.1. Airman Experience. The provisions of this section apply to all EMB-135/145 training programs and assume the training will be given to airmen with previous experience. Examples of applicable previous experience may include any of the following: experience in 14 CFR part 121 or 125 operations, former military, commuter, or corporate pilots with turbine-powered aircraft experience, etc. For airmen not having such experience (e.g., recent “ab initio” program graduates), additional requirements may be necessary as determined by the Principal Operations Inspector (POI), FSB, and Air Transportation Division.
- 9.2. Special Emphasis Areas.
  - 9.2.1 Pilots must receive special emphasis on the following areas during ground training:
    - a) The engine indicating and crew alerting system (EICAS), the primary flight displays (PFD), and multifunction displays (MFD). Pilots need to be able to understand the multitude of information presented on these displays. Recognition of reversionary modes and display failures and appropriate corrective action to be taken must be addressed. This item must be included in initial training.
    - b) Full-Authority Digital Engine Control (FADEC). An operational understanding of the FADEC and the engine thrust mode selection is required. This item must be included in initial training.
    - c) System control panels using pushbuttons with integral light bars. Pilots must have an understanding of the switch position and system configuration as it

relates to whether the light bar is illuminated or not. This understanding is required for both normal and abnormal system operation. Pilots must be cognizant of the switch normal or non-normal position as it relates to light bar illumination and not on whether the switch is depressed or released. This must be included in initial and recurrent training.

- d) Bleed air thermal anti-icing system. A thorough understanding of system operation, limitations, procedures, and the effects of ice buildup on the aircraft. This must be included in initial and recurrent training.
- e) Fuel system configurations. Due to the increasing variety of fuel system configurations throughout the EMB-135/145 fleet, it is necessary that flightcrews develop a thorough understanding of fuel system operations, limitations, and normal/abnormal procedures. This must be included in initial, differences, and recurrent training.
- f) Steering system inoperative or uncommanded swerving during critical phases of landing and takeoff throughout the EMB-135/145 fleet. The flightcrew must develop a thorough understanding of steering system operations, limitations, and normal/abnormal procedures. This must be included in initial, differences, upgrade, and recurrent training.

**9.2.2** Pilots must receive special emphasis on the following areas during flight training:

- a) The EICAS, the PFDs, and MFDs. Pilots need to be able to understand the multitude of information presented on these displays. Recognition of reversionary modes and display failures and appropriate corrective action to be taken must be addressed. This item must be included in initial training.
- b) Radio Management System (RMS), including the Radio Management Units (RMU) and tuning backup control head. An understanding of all normal functions as well as backup and emergency functions of these systems is required. This item must be included in initial training.
- c) FADEC. An operational understanding of the FADEC and the engine thrust mode selection is required. This item must be included in initial training.
- d) System control panels using pushbuttons with integral light bars. Pilots must have an understanding of the switch position and system configuration as it relates to whether the light bar is illuminated or not. This understanding is required for both normal and abnormal system operation. Pilots must be cognizant of the switch normal or non-normal position as it relates to light bar illumination and not on whether the switch is depressed or released. This must be included in initial and recurrent training.
- e) Bleed air thermal anti-icing system. A thorough understanding of system operation, limitations, procedures, and the effects of ice buildup on the aircraft. This must be included in initial and recurrent training.

- f) Fuel system configurations. Due to the increasing variety of fuel system configurations throughout the EMB-135/145 fleet, it is necessary that flightcrews develop a thorough understanding of fuel system operations, limitations, and normal/abnormal procedures. This must be included in initial, differences, and recurrent training.
- g) The appropriate use of the Fuel Control Unit (FCU) and flight management system (FMS), including modes to be used, for the types of instrument approaches to be flown. This must be included in initial and recurrent training.
- h) Steering system inoperative or uncommanded swerving during critical phases of landing and takeoff throughout the EMB-135/145 fleet. The flightcrew must develop a competent level of capability related to the steering system operations, normal and abnormal conditions, inclusive of limitations and recognition and recovery of abnormal conditions. This must be included in initial, differences, upgrade, and recurrent training.

**9.3. Specific Flight Characteristics.** Maneuvers/procedures required to be checked as referenced in the Airline Transport Pilot and Type Rating for Airplane Airman Certification Standards (ACS) and/or part 121 appendix F. There are no specific flight characteristics.

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

- a) Emergency manual gear extension for any right seat position training for initial and recurrent training.
- b) Main door alternate opening valve for any right seat position training for initial and recurrent training.
- c) Aircraft steering using the steering handle for any left seat position for initial and upgrade training.

**9.5. Regulatory Training Requirements Which Are Not Applicable to the EMB-135/145:**

- a) Tuck and Mach buffet. Demonstration of the aircraft's overspeed protection capabilities is an acceptable substitute.
- b) Turns with and without spoilers. Not applicable to the EMB-135/145; no substitute available.
- c) Fuel jettisoning. Not applicable to the EMB-135/145; no substitute available.
- d) Operation of systems and controls at the Flight Engineer (FE) station: Not applicable to the EMB-135/145; no substitute available.
- e) Recovery from specific flight characteristics that are peculiar to the airplane type. No specific flight characteristics are identified for the EMB-135/145; no substitute available.

**9.6. Flight Simulation Training Devices (FSTD).** There are no specific systems, procedures, or maneuvers that are unique to the EMB-135/145 that require a specific FSTD for training.

**9.7. Training Equipment.** There are no specific systems or procedures that are unique to the EMB-135/145 that require specific training equipment.

**9.8.** Differences Training Between Related Aircraft. Pilots must receive differences training between the EMB-145 and the EMB-135ER/LR/KE/KL/BJ. The level of training is specified in Appendices 2, Master Differences Requirements (MDR) Table; and 3, Differences Tables.

## **10. PILOT CHECKING**

**10.1.** Landing from a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the EMB-135/145 is not extremely remote due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification or a 14 CFR part 61, § 61.58 proficiency check, part 91, § 91.1065 competency check, part 121, § 121.441 proficiency check, part 125, § 125.287 competency check, or part 135, § 135.293 competency check is required. Refer to FAA Order 8900.1, Volume 5, Airman Certification, when the test or check is conducted in an aircraft versus an full flight simulator (FFS).

**10.2.** Specific Flight Characteristics. Maneuvers/procedures required to be checked as referenced in the Airline Transport Pilot and Type Rating for Airplane ACS and/or part 121 appendix F. There are no specific flight characteristics.

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

- a) Emergency manual gear extension for any right seat position, initial, and recurrent checking.
- b) Aircraft steering using the steering handle for any left seat position, initial, transition, upgrade, differences, and recurrent checking.

**10.4.** FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the EMB-135/145 that require a specific FSTD for checking.

**10.5.** Equipment. There are no specific systems or procedures that are unique to the EMB-135/145 that require specific equipment.

**10.6.** Differences Checking Between Related Aircraft. There are no differences checking required except as specified in Appendix 3 for optional items.

**10.7.** Other Checking Items. None.

## **11. PILOT CURRENCY**

There are no additional currency requirements for the EMB-135/145 other than those already specified in parts 61, 121, 125, and 135.

**11.1.** Differences Currency Between Related Aircraft. Not applicable.

## **12. OPERATIONAL SUITABILITY**

The EMB-135/145 is operationally suitable for operations under parts 91, 121, 125, and 135. The list of operating rules evaluated is on file at the Transport Aircraft Seattle AEG.

**12.1.** Honeywell FMS Control Display Unit (CDU) CD-830 (CDU-830). During July and August 2016 in Phoenix, Arizona and St. Louis, Missouri, the Transport Aircraft Seattle AEG conducted ground and flight tests of the Honeywell CDU-830 and Honeywell CDU-820 for comparison analysis, operational suitability, and proposed differences levels for training and checking. The CDU-830 and CDU-820 was evaluated side-by-side in various phases of simulated ground and flight operations and was found to be operationally suitable.

## **13. MISCELLANEOUS**

**13.1.** Forward Observer Seat. The EMB-135/145 forward observer seat as installed by TCDS #T00011AT has been evaluated and determined to meet the requirements of §§ 121.581(a), 125.317(b), 135.75(b), and AC 120-83, Flight Deck Observer Seat and Associated Equipment.

**13.2.** Landing Minima Categories. All operators must reference 14 CFR part 97, § 97.3 to determine “straight-in landing weather minima.” Operators may be further restricted by their operations specifications (OpSpecs) for circling approaches.

**13.3.** Emergency Evacuation. A full-scale emergency evacuation was successfully completed on the EMB-145 by Embraer S.A. The aircraft was configured with 50 passenger seats and one flight attendant seat. The demonstration complied with § 121.291(a).

**13.4.** Normal Landing Flaps. The EMB-135/145 normal “final flap setting” per § 91.126(c) are Flaps 22 or Flaps 45.

## APPENDIX 1. DIFFERENCES LEGEND

### Training Differences Legend

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

### Checking Differences Legend

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

## APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

These are the minimum levels of training and checking required, derived from the highest level (other than levels identified for optional items) in the Differences Tables in Appendix 3. Differences levels are arranged as training/checking.

**NOTE:** See Appendix 3 for optional items with higher differences levels.

Related Aircraft ↓	Base Aircraft →	EMB-145	EMB-135KE/KL	EMB-135ER/LR/BJ
EMB-145		Not applicable	A/A	A/A
EMB-135KE/KL		A/A	Not applicable	A/A
EMB-135ER/LR/BJ		A/A	A/A	Not applicable

### APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the EMB-145 to the EMB-135ER/LR/KE/KL/BJ, was proposed by Embraer S.A. and validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: EMB-145	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
TO RELATED AIRCRAFT: EMB-135ER/ LR/KE/KL/BJ						
	General	<ul style="list-style-type: none"> <li>• The EMB-135ER/LR/BJ is a 11.6 ft shorter version of the EMB-145.</li> <li>• The EMB-135KE/KL is a 4.6 ft shorter version of the EMB-145.</li> <li>• EMB-135BJ is equipped with winglets.</li> </ul>	No	No	A	A
	Dimensions	<ul style="list-style-type: none"> <li>• EMB-145 length = 98 ft (29.87 m); wing span = 65 ft 9 in (20.04 m).</li> <li>• EMB-135KE/KL length = 93 ft 5 in (28.45 m); wing span = 65 ft 9 in (20.04 m).</li> <li>• EMB-135ER/LR length = 86 ft 5 in (26.33 m); wing span = 65 ft 9 in (20.04 m).</li> <li>• EMB-135BJ length = 86 ft 5 in (26.33 m); wing span = 68 ft 11 in (21.00 m).</li> </ul>	No	No	A	A

FROM BASE AIRCRAFT: EMB-145  TO RELATED AIRCRAFT: EMB-135ER/ LR/KE/KL/BJ	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Cabin	<ul style="list-style-type: none"> <li>• EMB-145: max passenger capacity = 50.</li> <li>• EMB-135KE/KL: max passenger capacity = 44.</li> <li>• EMB-135ER/LR: max passenger capacity = 37.</li> <li>• EMB-135BJ: max passenger capacity = 15.</li> </ul>	No	No	A	A
	Cargo Compartment	<ul style="list-style-type: none"> <li>• EMB-145 and EMB-135KE/KL/ER/LR cargo compartment volume: 325 ft<sup>3</sup>.</li> <li>• EMB-135BJ cargo compartment volume: 240 ft<sup>3</sup>.</li> </ul>	No	No	A	A
	Limitations	Weight and center of gravity (CG) limitations change. V speeds and maximum Mach operating speed (M <sub>MO</sub> ) change for the EMB-135BJ.	No	No	A	A
	Performance	Different performance charts and graphs.	No	No	A	A
	Air Conditioning and Pressurization	EMB-135BJ has additional temperature controls in the main cabin and the maximum differential pressure is 8.1 psi.	No	No	A	A

<b>FROM BASE AIRCRAFT: EMB-145</b>	<b>DESIGN</b>	<b>REMARKS</b>	<b>FLT CHAR</b>	<b>PROC CHNG</b>	<b>TRAINING</b>	<b>CHECKING</b>
<b>TO RELATED AIRCRAFT: EMB-135ER/ LR/KE/KL/BJ</b>						
	Equipment/Furnishings	EMB-135BJ has a corporate interior configuration.	No	No	A	A
	Fuel	EMB-135BJ has additional fuel tanks and a slightly modified fuel system.	No	Yes	A	A
	Ice and Rain Protection	EMB-135BJ has a clear ice detection system.	No	No	A	A
	Navigation	EMB-135BJ has Future Air Navigation System (FANS) 1/A.	No	Yes	A	A
	Navigation	EMB-135BJ/145XR has localizer performance with vertical guidance (LPV) (optional item).	No	Yes	B	B
	Navigation	EMB-135BJ/145XR has charts and maps (optional item).	No	Yes	C	C
	Navigation	EMB-135BJ/145XR has barometric vertical navigation (BARO-VNAV) (optional item).	No	Yes	D	D
	Navigation	EMB-135BJ has Automatic Dependent Surveillance-Broadcast (ADS-B) Out.	No	Yes	A	A
	Navigation	EMB-135BJ/145XR has Required Navigation Performance (RNP) 0.3 (optional item).	No	Yes	B	B

<b>FROM BASE AIRCRAFT: EMB-145</b>	<b>DESIGN</b>	<b>REMARKS</b>	<b>FLT CHAR</b>	<b>PROC CHNG</b>	<b>TRAINING</b>	<b>CHECKING</b>
<b>TO RELATED AIRCRAFT: EMB-135ER/ LR/KE/KL/BJ</b>						
	Oxygen	EMB-135BJ passenger oxygen system employs one or two 77 cu ft cylinders to supply the passenger oxygen masks.	No	No	A	A
	Doors	Different main entry doors are available. EMB-135BJ does not have the service door and the left overwing exit hatch. *Refer to 14 CFR part 91, § 91.1083, part 135, § 135.331, and part 121, § 121.417 for the specific emergency exit training requirements.	No	No	A*	A
	Power Plant	Engines with different thrust ratings and different takeoff modes are available for the various models.	Yes	Yes	A	A
	Autothrottle (AT) and Guidance Panel	EMB-135BJ has the option for an AT system with an associated guidance panel upgrade (optional item).	No	Yes	D	A
	Control Display Unit (CDU)	Honeywell flight management system (FMS) CDU CD-830 (CDU-830) (optional item).	No	Yes	A	A
	Upgrade to FMS 6.1	Upgrade to FMS 6.1 (optional item).	No	Yes	D	D

This Maneuver Differences table, from the EMB-145 to the EMB-135ER/LR/KE/KL/BJ was proposed by Embraer and validated by the FSB. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

<b>FROM BASE AIRCRAFT: EMB-145</b>  <b>TO RELATED AIRCRAFT: EMB-135ER/LR/KE/KL/BJ</b>	<b>MANEUVER</b>	<b>REMARKS</b>	<b>FLT CHAR</b>	<b>PROC CHNG</b>	<b>TRAINING</b>	<b>CHECKING</b>
	Takeoff	Different takeoff thrust modes available. Same takeoff technique and pitch attitude for a given flap setting.	No	No	A	A
	Multiengine Go-around with autothrottle (AT) ON.	AT disengages when Thrust Lever Angle (TLA) is set to MAX.  Applicable to EMB-135BJ aircraft with the optional AT system and associated guidance panel upgrade (optional item).	No	No	D	A