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Flight Standardization Board (FSB) Report

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Manufacturer
Cirrus Design Corporation

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A00018CH	SF50 S/N 0004 and subsequent for aircraft part numbers 26000-001 and 26000-003 28,000 ft MSL	Vision Jet FL 280 Configuration	SF-50
A00018CH	SF50 S/N 0008, 0089, 0094, and subsequent except aircraft part number 26000-003 31,000 ft MSL	Vision Jet FL 310 Configuration	SF-50

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TABLE OF CONTENTS

Section	Page
1. RECORD OF REVISIONS	3
2. INTRODUCTION	3
3. HIGHLIGHTS OF CHANGE	3
4. BACKGROUND	3
5. ACRONYMS.....	4
6. DEFINITIONS.....	5
7. PILOT TYPE RATING	6
8. RELATED AIRCRAFT.....	6
9. PILOT TRAINING.....	7
10. PILOT CHECKING.....	9
11. PILOT CURRENCY	11
12. OPERATIONAL SUITABILITY.....	11
13. MISCELLANEOUS	11
APPENDIX 1. DIFFERENCES LEGEND	13
APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE.....	15
APPENDIX 3. DIFFERENCES TABLES	16

1. RECORD OF REVISIONS

Revision Number	Section(s)	Page(s)	Date
Original	All	All	03/17/2017
1	9.9, 10.4.2, 10.4.3, 12	8 thru 10	08/07/2018
2	1, 3 thru 5, 8.1, 9.2, 9.8, 10.7, 12, 13.4, 13.5, Appendices 2 and 3	1 thru 8, 10, 11, 15 thru 19	03/22/2019

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

- Section 4: Updated background to reflect current activity.
- Section 5: Acronyms Added terms.
- Section 8.1 Added SF50 Vision Jet FL 310 configuration to the TCDS as a related aircraft.
- Section 9.2: Added autothrottle to ground and flight training.
- Section 9.8: Differences Training.
- Section 10.7: Differences Checking.
- Section 13.4: Aircraft Proving Tests.
- Appendix 2: Added MDR Table.
- Appendix 3: Added Differences Tables.

4. BACKGROUND

The Small Aircraft Branch formed a Flight Standardization Board (FSB) that evaluated the Cirrus SF50 Vision Jet as defined in FAA Type Certificate Data Sheet (TCDS) #A00018CH. The evaluation was conducted in November 2016 using the methods described in the current

edition of FAA Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

In April 2018, at the request of Cirrus Design Corporation, an FSB was conducted in Duluth, MN, for the purpose of evaluating the SF50 for single-engine instrument flight rules (SEIFR) passenger-carrying operations under Title 14 of the Code of Federal Regulations (14 CFR) part 135, specifically determining operational suitability with part 135, § 135.163(f). The aircraft utilized was N865SM, Serial Number 044. This aircraft was randomly selected and awaiting delivery. It is representative of the SF50 fleet for the purpose of this FSB.

In September 2018, at the request of Cirrus Design Corporation, an FSB was conducted in Duluth, MN, for evaluating enhanced features that the manufacturer is incorporating into production aircraft. Many of these changes are minor improvements to the original certificated aircraft that do not significantly alter operations or procedures utilized in the original aircraft.

Changes that are more substantial include raising the maximum operating altitude from flight level (FL) 280 to FL 310. The aircraft is now equipped for operations in Reduced Vertical Separation Minimum (RVSM) airspace and the autopilot system incorporates an autothrottle function. The aircraft has also had enhancements made to the ailerons that allow for removal of the boundary layer energizers from the wing.

For the purpose of this report, manufactured aircraft that incorporate the new features are referred to as the SF50 Vision Jet FL 310 configuration. Aircraft not so equipped are referred to as the SF50 Vision Jet FL 280 configuration. An SF50 reference in this report would indicate that the information associated would apply to either configuration.

5. ACRONYMS

14 CFR	Title 14 of the Code of Federal Regulations
AC	Advisory Circular
ACFT	Aircraft
ACS	Airman Certification Standards
ADF	Automatic Direction Finder
AEG	Aircraft Evaluation Group
AFM	Airplane Flight Manual
AGL	Above Ground Level
AOA	Angle of Attack
ATP	Airline Transport Pilot
AV	Audiovisual Presentation
BLE	Boundary Layer Energizer
CAPS	Cirrus Airframe Parachute System
CAS	Crew Alert System
ECL	Electronic Checklist
EFB	Electronic Flight Bag
EFIS	Electronic Flight Instrument System
ESP	Electronic Stability and Protection System

EVS	Enhanced Vision System
FAA	Federal Aviation Administration
FADEC	Full-Authority Digital Engine Control
FFS	Full Flight Simulator
FL	Flight Level
FMS	Flight Management System
FSB	Flight Standardization Board
FSTD	Flight Simulation Training Device
FTD	Flight Training Device
GNSS	Global Navigation Satellite System
HO	Handout
ICBI	Interactive Computer-Based Instruction
IFR	Instrument Flight Rules
ITT	Interstage Turbine Temperature
MDR	Master Differences Requirements
NAS	National Airspace System
PFD	Primary Flight Display
PIC	Pilot in Command
PIM	Pilot Information Manual
PTS	Practical Test Standards
PTT	Part Task Trainer
RVSM	Reduced Vertical Separation Minimum
SAS	Stability Augmentation System
SEIFR	Single-Engine Instrument Flight Rules
SFO	Single Engine Flameout
SRM	Single Pilot Resource Management
SU	Standup Instruction
TCBI	Tutorial Computer-Based Instruction
TCDS	Type Certificate Data Sheet
W&B	Weight and Balance

6. DEFINITIONS

These definitions are for the purposes of this report only.

- 6.1. **Base Aircraft.** An aircraft identified for use as a reference to compare differences with another aircraft.
- 6.2. **Current.** A crewmember meets all requirements to operate the aircraft under the applicable operating part.
- 6.3. **Differences Tables.** Describe the differences between a pair of related aircraft and the minimum levels operators must use to conduct differences training and checking of crewmembers. Difference levels range from A to E.

- 6.4. Master Differences Requirements (MDR).** Specifies the highest training and checking difference levels between a pair of related aircraft derived from the Differences Tables.
- 6.5. Mixed Fleet Flying.** The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.
- 6.6. Operational Evaluation.** 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, 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., 14 CFR parts 91, 121, 133, and/or 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 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 Cirrus Vision Jet type rating designation is SF-50.
- 7.2. Common Type Ratings.** Not applicable.
- 7.3. Military Equivalent Designations.** Military aircraft that qualify for the SF-50 can be found on the FAA.gov website under Licenses and 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.

8. RELATED AIRCRAFT

- 8.1. Related Aircraft on Same TCDS.** The SF50 Vision Jet FL 280 configuration and SF50 Vision Jet FL 310 configuration are related.

8.2. Related Aircraft on Different TCDS. Not applicable.

9. PILOT TRAINING

9.1. Airman Experience. The SF50 is a single engine turbojet aircraft outfitted with a technologically advanced integrated avionics installation. This FSB was predicated upon the airman holding a private pilot certificate in the airplane category with a single-engine land class rating and an instrument airplane rating. Airmen entering SF50 training should have recent flight experience in accordance with 14 CFR part 61, § 61.57 and be proficient with instrument cross-country flight planning. Airmen should have training in technologically advanced aircraft equipped with flight management system (FMS) or Global Navigation Satellite System (GNSS) and Single Pilot Resource Management (SRM). Pilots without this experience may require additional training.

9.2. Special Emphasis Areas. Pilots must receive special emphasis on the following areas during ground training:

- SRM, risk assessment, and risk management. Initial training/recurrent training.
- Crew Alert System (CAS). Initial training/recurrent training.
- Full-authority digital engine control (FADEC). Initial training/recurrent training.
- Cirrus Perspective Touch by Garmin integrated avionics system. Initial training/recurrent training.
- Autothrottle system. Initial training/recurrent training.
- Stall protection system (stick shaker/pusher visual and aural warnings, angle of attack (AOA) gauge). Initial training/recurrent training.
- Flight controls and electronic stability and protection system (ESP) to include underspeed, overspeed, pitch nose high/low, overbank with and without autopilot on. Initial training/recurrent training.
- Yaw and stability augmentation system (SAS). Initial training/recurrent training.
- Ice protection systems to include icing condition preflight check. Initial training/recurrent training.
- Cirrus Airframe Parachute System (CAPS) function and deployment strategy. Initial training/recurrent training.
- Aircraft optional items such as Enhanced Vision System (EVS), XM Sirius, and iridium communications, as equipped. Initial training/recurrent training.

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

- Exterior inspection of wing boundary layer energizer (BLE), aileron fences root vortex generators, and T-strips affixed to wings, tail, and control surfaces. Initial training/recurrent training.
- Cirrus Perspective Touch by Garmin initialization and programming to include database usage and flight plan routing, instrument approaches, and holds. Initial training/recurrent training.

- Autothrottle system. Initial training/recurrent training.
 - Slow flight. Initial training/recurrent training.
 - Stall prevention with recovery at the first indication of stall, and stall recovery with use of stick pusher activation. For the purposes of the practical test standards (PTS), activation of the stick pusher should be considered full stall. Stalls should be trained with and without the autopilot activated. Initial training/recurrent training.
 - Electronic checklist (ECL) procedures. Initial training/recurrent training.
 - Flight by reference to instruments in reversionary mode. Initial training/recurrent training.
 - Pilot awareness of turbojet spool-up times in maneuvers such as balked landing, go-arounds with and without autopilot engaged. Initial training/recurrent training.
 - Engine failure procedures to include single engine flameout (SFO) and CAPS deployment simulated if training is being conducted in the airplane inflight. Initial training/recurrent training.
 - Taxi, takeoff, and rollout procedures in normal and crosswind conditions practicing use of differential braking to steer with additional emphasis on brake limitations. Initial training/recurrent training.
- 9.3.** Specific Flight Characteristics. Maneuvers/procedures required to be checked as referenced in the airline transport pilot (ATP) and type rating PTS or Airman Certification Standards (ACS), as applicable. There are no specific flight characteristics.
- 9.4.** Seat Dependent Tasks. There are no seat dependent tasks. The Airplane Flight Manual (AFM) requires one pilot and does not specify which seat the pilot should occupy during operations.
- 9.5.** Regulatory Training Requirements which are Not Applicable to the SF50:
- Ditching—part 91, § 91.1083(c)(1), § 135.331(c)(1).
 - Evacuation chutes/slides—§ 91.1083(c)(4), § 135.331(c)(4).
 - Life rafts—§ 91.1083(c)(6), § 135.331(c)(6).
 - Life vests—§ 91.1083(c)(7), § 135.331(c)(7).
- 9.6.** Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the SF50 that require a specific FSTD for training.
- 9.7.** Training Equipment. There are no specific systems or procedures that are unique to the SF50 that require specific training equipment.
- 9.8.** Differences Training between Related Aircraft. Pilots must receive differences training between the SF50 Vision Jet FL 280 configuration and SF50 Vision Jet FL 310 configuration. The level of training is specified in Appendix 3, Differences Tables.

9.9. Special Considerations for Training in Actual Aircraft. The FSB has identified the following special considerations when conducting SF50 flight training:

- No-flap landings. May be trained in the aircraft. If trained in the aircraft, the instructor must be attentive to airspeed control and available runway length and surface condition. The instructor must also observe brake limitations while conducting this training.
- Stick pusher system. The FSB recommends that all pilots in SF50 training practice and demonstrate this system in flight or in a full flight simulator (FFS) and understand that an altitude loss in a stall can be significant if the stick pusher activates. During stall recovery training with stick pusher activation, altitude loss in excess of 500 to 1,000 feet should be expected. It is recommended that training maneuvers for stalls up to stick pusher be initiated at an altitude to allow complete recovery no lower than 3,000 feet above ground level (AGL).
- Forward slips. During the SF50 evaluation, the FSB discovered an unfavorable stall protection system reaction during the input of a forward slip. The FSB recommends that all pilots in SF50 training avoid the use of forward slips or any other uncoordinated flight during operations below 200 feet AGL when the yaw damper is automatically disengaged.

10. PILOT CHECKING

10.1. Landing From a No-Flap or Nonstandard Flap Approach. Flap extension failure on the SF50 is possible due to potential electrical system malfunction. Therefore, demonstration of a no-flap approach and landing during pilot certification or a § 61.58 proficiency check, § 91.1065 competency check, or § 135.293 competency check is required. Refer to FAA Order 8900.1, Volume 5 when the test or check is conducted in an aircraft versus an FFS. If checked in the aircraft, the evaluator must be attentive to airspeed control and available runway length and surface condition. The evaluator must also observe brake limitations while conducting this checking.

10.2. Specific Flight Characteristics. Maneuvers/procedures required to be checked as referenced in the ATP and type rating PTS or ACS, as applicable. There are no specific flight characteristics.

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

10.4. Other Checking Items.

10.4.1 Evaluators are encouraged to draw from the special emphasis areas in paragraph 9.2 to develop their plans of action for checking in this aircraft.

10.4.2 Forward slip to a landing. The FSB evaluated this maneuver and does not recommend the forward slip or significant sustained uncoordinated flight in the SF50. The AEG recommends that this maneuver be omitted on the SF-50 type

rating practical test. If the SF-50 type rating practical test is conducted concurrently with any other practical test (i.e., combined SF-50 type rating with the initial issuance of a commercial pilot certificate), this maneuver must be trained and checked in a separate airplane capable of the maneuver.

NOTE: During the FSB, the pilot had to manually deactivate the automatic yaw damper system during this event. The slip caused erroneous AOA indications and initiated stall warning and stick shaker events.

10.4.3 Power off 180-degree accuracy approach and spot landing. The FSB evaluated this maneuver and does not recommend the maneuver be performed in the SF50. The AEG recommends that this maneuver be omitted on the SF50 type rating practical test. If the SF50 type rating practical test is conducted concurrently with any other practical test (i.e., combined SF50 type rating with the initial issuance of a commercial pilot certificate), this maneuver must be trained and checked in a separate airplane capable of the maneuver.

NOTE: During the FSB, the maneuver was flown in accordance with the ATP and aircraft type rating PTS for airplane. Several risks were identified as a result. It requires this maneuver to be performed from an altitude of 1,000 feet AGL or less. Because the recommended traffic pattern altitude by Cirrus for the SF50 is 1,500 feet AGL, flying the maneuver starting at 1,000 feet AGL required the pilot to place the aircraft on downwind closer to the runway than desired. Due to the closeness of the downwind leg, the turns to base and final were greater than 30 degrees of bank. In addition, it was noted that, if the pilot needed to arrest the descent and abort the maneuver, timely application of thrust would be critical. It is also noted that, between 1,000 and 2,000 feet AGL, Cirrus recommends utilization of the CAPS system if the engine fails. Below 1,000 feet AGL, the CAPS system must not be deployed, and Cirrus recommends limited maneuvering and does not recommend a 180-degree turn at those altitudes.

10.4.4 The SF50 is certificated in accordance with 14 CFR part 23 in the normal category. All non-aerobatic maneuvers other than the waived maneuvers listed above and contained in the limitations section of the AFM may be performed.

10.5. FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the SF50 that require a specific FSTD for checking.

10.6. Equipment. There are no specific systems or procedures that are unique to the SF50 that require specific equipment.

10.7. Differences Checking between Related Aircraft. Pilots must receive differences checking between the SF50 Vision Jet FL 280 configuration and SF50 Vision Jet FL 310 configuration. The level of checking is specified in Appendix 3.

11. PILOT CURRENCY

There are no additional currency requirements for the SF50 other than those already specified in parts 61 and 135. If a pilot has not flown the SF50 within 180 days, the FSB recommends the pilot regain proficiency by flying with an appropriately rated instructor either in the aircraft or FSTD with emphasis on operation of the Cirrus Perspective Touch by Garmin integrated avionics system.

11.1. Differences Currency between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The SF50 is suitable for operations under parts 91 and 135, including SEIFR passenger-carrying operations. The list of operating rules evaluated is on file at the Small Aircraft Branch.

13. MISCELLANEOUS

13.1. Forward Observer Seat. The SF50 is a single-pilot aircraft, and the primary forward observer seat would be the right flight deck seat. In the event that right flight deck seat would be occupied during a check, the SF50 has a middle row designated by the Cirrus AFM and Pilot Information Manual (PIM) as seats 3, 4, and 5. Seats 3, 4, and 5 would be alternate observer seats. The FSB evaluated and determined that these seats are suitable for observing checks.

13.2. Landing Minima Categories. Reference 14 CFR part 97, § 97.3. The SF50 is considered Category A aircraft for the purposes of determining “straight-in landing weather minima”.

13.3. Normal Landing Flaps. The SF50 normal “final landing flap setting” per § 91.126(c) is 100 percent for normal conditions and 50 percent for operations in icing conditions or crosswind conditions per the AFM.

13.4. Aircraft Proving Tests. Proving tests in accordance with § 135.145 are appropriate when the SF50 is new to an operator. When an operator is currently operating the SF50 FL 280 configuration and the operator introduces the SF50 FL 310 configuration into the same operations, proving tests are not required.

13.5. Electronic Flight Bag (EFB). The EFB was evaluated during the FSB. The current editions of FAA AC 120-76, Authorization for Use of Electronic Flight Bags, and AC 91-78, Use of Class 1 or Class 2 Electronic Flight Bag (EFB), were utilized in the review of the SF50 EFB. The Cirrus Perspective Touch by Garmin integrated avionics system contains a navigation database and approach charts as well as an ECL. This system was found to be suitable for all approved operations.

The manufacturer also requested review of an electronic AFM, PIM, and aircraft Weight and Balance (W&B) data on a Class 1 hardware device with Type B EFB software. The FSB determined that this system is operationally suitable for use in the SF50. It is noted

that the operator/pilot in command (PIC) is responsible for ensuring that the latest revision of all required charts, manuals, and forms are on board the aircraft prior to flight and kept up-to-date. In addition, it is the pilot's responsibility to determine and ensure the battery life of the electronic AFM/PIM device is sufficient for the flight.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

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

Checking Differences Legend

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

APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

These are the minimum levels of training and checking required, derived from the highest level in the Differences Tables in Appendix 3. Differences levels are arranged as training/checking.

Related Aircraft ↓	Base Aircraft →	SF50 Vision Jet FL 280 Configuration
SF50 Vision Jet FL 310 Configuration		D/D

APPENDIX 3. DIFFERENCES TABLES

This Design Differences table, from the SF50 Vision Jet FL 280 configuration to the SF50 Vision Jet FL 310 configuration, was proposed by Cirrus Design Corporation and validated by the Flight Standardization Board (FSB) in September 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: SF50 Vision Jet FL 280 Configuration	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
TO RELATED AIRCRAFT: SF50 Vision Jet FL 310 Configuration	Autothrottle	Added autothrottle system to autopilot function. Autothrottle control panel added to power quadrant. Autothrottle PFD status indications added. Autothrottle CAS messages added.	No	Yes	D	D
	Aircraft Limitations Aircraft Performance	Max operating altitude raised to FL 310. Performance differences related to higher true airspeed and lower fuel consumption. Increase in payload by 150 pounds.	No	Yes	B	B

FROM BASE AIRCRAFT: SF50 Vision Jet FL 280 Configuration TO RELATED AIRCRAFT: SF50 Vision Jet FL 310 Configuration	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Limitations engine	ITT limits adjusted to FJ33-5A engine due to operations at FL 310.	No	No	B	A
	New aileron design	Removal of static aerodynamic devices.	Yes	No	B	A
	Cabin design changes and new optional features	Cabin seats altered and optional seating available with executive console. Door seal redesign.	No	No	B	B
	Flight instruments	Added IFR Low and High charts and sectional charts to map menus. Font and graphics changes to EFIS screens. ADF added as an option.	No	No	B	A
	Electrical panel change	Change in overhead panel deleting switch no longer required. Aircraft battery change.	No	Yes	B	A

FROM BASE AIRCRAFT: SF50 Vision Jet FL 280 Configuration TO RELATED AIRCRAFT: SF50 Vision Jet FL 310 Configuration	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Minor changes in design not affecting Limitations or Procedures		No	No	B	A

This Maneuver Differences table, from the SF50 Vision Jet FL 280 configuration to the SF50 Vision Jet FL 310 configuration, was proposed by Cirrus Design Corporation and validated by the FSB in September 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: SF50 Vision Jet FL 280 Configuration TO RELATED AIRCRAFT: SF50 Vision Jet FL 310 Configuration	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Visual and instrument departure	With autothrottle ON.	No	Yes	D	D
	Climb and descent	With autothrottle ON.	No	Yes	D	D
	Visual and instrument approach to landing	With autothrottle ON.	No	Yes	D	D