



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2023-2442; Special Conditions No. 25-850-SC]

Special Conditions: Gulfstream Aerospace Corporation Model GVIII-G700 and GVIII-G800 Series Airplanes; Limit Pilot Forces for Side-stick Controllers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Gulfstream Aerospace Corporation (Gulfstream) Model GVIII-G700 and GVIII-G800 series airplanes. These airplanes will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport-category airplanes. This design feature is a side-stick controller for one-hand operation requiring wrist motion only, not arms. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: This action is effective on Gulfstream on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Send comments on or before [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by Docket No. FAA-2023-2442 using any of the following methods:

- *Federal eRegulations Portal:* Go to www.regulations.gov and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE, Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.
- *Docket:* Background documents or comments received may be read at www.regulations.gov at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Todd Martin, Airframe Section, AIR-622, Technical Policy Branch, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; telephone 206-231-3210; e-mail Todd.Martin@faa.gov.

SUPPLEMENTARY INFORMATION:

The substance of these special conditions has been published in the Federal Register for public comment in several prior instances with no substantive comments received. Therefore, the FAA finds, pursuant to title 14, Code of Federal Regulations (14 CFR) 11.38(b), that new comments are unlikely, and notice and comment prior to this publication are unnecessary.

Privacy

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in title 14 CFR 11.35, the FAA will post

all comments received without change to www.regulations.gov, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about these special conditions.

Confidential Business Information

Confidential Business Information (CBI) is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to these special conditions contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to these special conditions, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and the indicated comments will not be placed in the public docket of these special conditions. Send submissions containing CBI to Todd Martin, Airframe Section, AIR-622, Technical Policy Branch, Aircraft Certification Service, Federal Aviation Administration, 2200 South 216th Street, Des Moines, Washington 98198; e-mail Todd.Martin@faa.gov. Comments the FAA receives, which are not specifically designated as CBI, will be placed in the public docket for these special conditions.

Comments Invited

The FAA invites interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

The FAA will consider all comments received by the closing date for comments and will consider comments filed late if it is possible to do so without incurring delay. The FAA may change these special conditions based on the comments received.

Background

On December 31, 2019, Gulfstream applied for an amendment to Type Certificate No. T00015AT to include the new Model GVIII-G700 and GVIII-G800 series airplanes. These airplanes, which are derivatives of the Model GVI currently approved under Type Certificate No. T00015AT, are twin-engine, transport-category airplanes, with maximum seating for 19 passengers, and a maximum take-off weight of 107,600 pounds (GVIII-G700) and 105,600 pounds (GVIII-G800).

Type Certification Basis

Under the provisions of 14 CFR 21.101, Gulfstream must show that the Model GVIII-G700 and GVIII-G800 series airplanes meet the applicable provisions of the regulations listed in Type Certificate No. T00015AT, or the applicable regulations in effect on the date of application for the change, except for earlier amendments as agreed upon by the FAA.

If the Administrator finds that the applicable airworthiness regulations (e.g., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Gulfstream Model GVIII-G700 and GVIII-G800 series airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Gulfstream Model GVIII-G700 and GVIII-G800 series airplanes must comply with the exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with 14 CFR 11.38, and they become part of the type certification basis under § 21.101.

Novel or Unusual Design Feature

The Gulfstream Model GVIII-G700 and GVIII-G800 series airplanes will incorporate the following novel or unusual design feature:

A side-stick controller for one-hand operation requiring wrist motion only, not arms.

Discussion

The Gulfstream Model GVIII-700 and GVIII-800 series airplanes are equipped with side-stick controllers instead of conventional wheel or control stick controllers. Side-stick controllers are designed to be operated using only one hand. The requirements of § 25.397(c), which define limit pilot forces and torques for conventional wheel or stick controllers, are not adequate for side-stick controllers because pilot forces are applied to side-stick controllers with only the wrist, not arms. Special conditions are necessary to specify the appropriate loading conditions for side-stick controllers.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

Applicability

As discussed above, these special conditions are applicable to the Gulfstream Model GVIII-G700 and GVIII-G800 series airplanes. Should Gulfstream apply at a later date for a change to the type certificate to include another model that incorporates the

same novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only a certain novel or unusual design feature on Gulfstream Model GVIII-G700 and GVIII-G800 series airplanes. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

Authority Citation

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 44701, 44702, and 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued, in lieu of the aileron-control and elevator-control forces specified in § 25.397(c), as part of the type certification basis for Gulfstream Aerospace Corporation Model GVIII-G700 and GVIII-G800 series airplanes.

For Gulfstream Aerospace Corporation Model GVIII-G700 and GVIII-G800 series airplanes equipped with side-stick controls designed for forces to be applied by one wrist and not arms, the limit pilot forces are as follows.

(a) For all components between and including the side-stick control-assembly handle and its control stops:

Pitch	Roll
Nose up, 200 lbs force	Nose left, 100 lbs force
Nose down, 200 lbs force	Nose right, 100 lbs force

(b) For all other components of the side-stick control assembly, but excluding the internal components of the electrical sensor assemblies, to avoid damage to the control system as the result of an in-flight jam:

Pitch	Roll
Nose up, 125 lbs force	Nose left, 50 lbs force
Nose down, 125 lbs force	Nose right, 50 lbs force

Issued in Kansas City, Missouri, on January 24, 2024.

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 Policy and Innovation Division,
 Aircraft Certification Service.

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