

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 25**

[Docket No. NM358; Notice No. 25–06–12–SC]

Special Conditions: Gulfstream Aerospace Corporation, Model GV, GV–SP, and GIV–X Airplanes; Windshield Coating in Lieu of Wipers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed special condition.

SUMMARY: This action proposes a special condition for the Gulfstream Aerospace Corporation Model GV, GV–SP, and GIV–X airplanes. These airplanes will have a novel or unusual design feature(s) associated with use of a hydrophobic windshield coating, rather than windshield wipers, as the means to maintain a clear portion of the windshield during precipitation conditions, as required by the airworthiness standards for transport category airplanes. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. This proposed special condition contains 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: We must receive your comments by November 20, 2006.

ADDRESSES: You must mail two copies of your comments to: Federal Aviation Administration, Transport Airplane Directorate, Attn: Rules Docket (ANM–113), Docket No. NM358, 1601 Lind Avenue SW., Renton, Washington, 98057–3356. You may deliver two copies to the Transport Airplane Directorate at the above address. You must mark your comments: Docket No. NM358. You can inspect comments in the Rules Docket weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

FOR FURTHER INFORMATION CONTACT: John McConnell, Airplane and Flight Crew Interface Branch, ANM–111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98057–3356; telephone (425) 227–1365; facsimile (425) 227–1320, e-mail john.mcconnell@faa.gov.

SUPPLEMENTARY INFORMATION:**Comments Invited**

We invite 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 condition, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this special condition. You can inspect the docket before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this preamble between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change this special condition based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on this proposal, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

Background

On December 19, 2005, Gulfstream Aerospace Corporation applied for a change to Type Certificate No. A12EA to use a hydrophobic windshield coating as the sole means of providing adequate pilot compartment view in the presence of precipitation for Gulfstream Model GV, GV–SP and GIV–X airplanes. The Gulfstream Model GV, GV–SP and GIV–X airplanes are currently approved under Type Certificate No. A12EA. The Model GV airplane is powered by two BMW–Rolls Royce Deutschland BR700–710A1–10 engines, operates with a two person flightcrew, and has the capacity to carry 19 passengers. The Model GV–SP airplane is powered by two BMW–Rolls Royce Deutschland BR700–710C4–11 engines, operates with a two person flightcrew, and has the capacity to carry 19 passengers. The Model GIV–X airplane is powered by two Rolls Royce Tay Mark 611–8C engines, operates with a two person flightcrew, and has the capacity to carry 19 passengers.

Type Certification Basis

Under the provisions of § 21.101, Gulfstream Aerospace Corporation must

show that the Model GV, GV–SP and GIV–X airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A12EA, or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the “original type certification basis.”

The regulations incorporated by reference in Type Certificate No. A12EA include:

- For Model GV airplanes—part 25, effective February 1, 1965, Amendment 25–1 through Amendment 25–81, with exceptions.
- For Model GV–SP airplanes—part 25, effective February 1, 1965, Amendment 25–1 through Amendment 25–98.
- For Model GIV–X airplanes—part 25, effective February 1, 1965, Amendment 25–1 through Amendment 25–101, with exceptions.

In addition, the certification basis includes other regulations, special conditions and exemptions that are not relevant to this proposed special condition.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, 14 CFR part 25) do not contain adequate or appropriate safety standards for the Model GV, GV–SP and GIV–X airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Model GV, GV–SP and GIV–X airplanes must comply with the fuel vent and 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 § 11.19, under § 11.38, and they become part of the type certification basis under § 21.101.

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 or similar novel or unusual design feature, or should any other model already included on the same type certificate be modified to incorporate the same or similar novel or unusual design feature, the special conditions would also apply to the other model under § 21.101.

Novel or Unusual Design Features

The Gulfstream Model G–V, GV–SP and GIV–X flightdeck designs

incorporate a hydrophobic windshield coating to provide adequate pilot compartment view in the presence of precipitation. Sole reliance on such a coating, without windshield wipers or a windshield blower, constitutes a novel or unusual design feature for which the applicable airworthiness regulations do not contain adequate or appropriate safety standards. Therefore, special conditions are required that provide the level of safety equivalent to that established by the regulations.

Discussion

Section 25.773(b)(1) requires that both pilots of a transport category airplane be provided a means to maintain a sufficiently clear portion of the windshield during precipitation conditions, and that this clear portion of the windshield must have a sufficiently extensive view along the flight path. The regulations require this means to maintain such an area during precipitation in heavy rain at speeds up to 1.5 V_{SR1} .

This requirement has existed in principle since 1953 in Part 4b of the Civil Air Regulations (CAR). Section 4b.351(b)(1) of CAR 4b required that "Means shall be provided for maintaining a sufficient portion of the windshield clear so that both pilots are afforded a sufficiently extensive view along the flight path in all normal flight attitudes of the airplane. Such means shall be designed to function under the following conditions without continuous attention on the part of the crew: (i) In heavy rain at speeds up to 1.6 V_{S1} , flaps retracted." Effective December 26, 1990, Amendment 25-108 changed the criterion for effectiveness of the means to maintain an area of clear vision from 1.6 V_{S1} to 1.5 V_{SR1} to accommodate the redefinition of the reference stall speed as the 1-g stall speed. As noted in the preamble to the final rule for that amendment, the 7 percent decrease in the speed value offsets a corresponding increase in the reference stall speed associated with the use of V_{SR1} rather than V_{S1} .

The requirement that the means to maintain a clear area of forward vision must function at high speeds and high precipitation rates is based on the use of windshield wipers as the means to maintain an adequate area of clear vision in precipitation conditions. The requirement in 14 CFR 121.313(b), and in 14 CFR 125.213(b), to provide "a windshield wiper or equivalent for each pilot station" has remained unchanged since at least 1953.

The effectiveness of windshield wipers to maintain an area of clear vision normally degrades as airflow and

precipitation rates increase. It is assumed that because high speeds and high precipitation rates represent limiting conditions for windshield wipers, they will also be effective at lower speeds and precipitation levels. Accordingly, § 25.773(b)(1)(i) does not require maintenance of a clear area of forward vision at lower speeds or lower precipitation rates.

A forced air stream blown over the windshield has also been used to maintain an area of clear vision in precipitation. The limiting conditions for this technology are comparable to those for windshield wipers. Accordingly, introduction of this technology did not present a need for special conditions to maintain the level of safety embodied in the existing regulations.

Hydrophobic windshield coatings may depend to some degree on airflow to maintain a clear vision area. The heavy rain and high-speed conditions specified in the current rule do not necessarily represent the limiting conditions for this new technology. For example, airflow over the windshield, which may be necessary to remove moisture from the windshield, may not be adequate to maintain a sufficiently clear area of the windshield in low speed flight or during surface operations. Alternatively, airflow over the windshield may be disturbed during such critical times as the approach to land, where the airplane is at a higher than normal pitch attitude. In these cases, areas of airflow disturbance or separation on the windshield could cause failure to maintain a clear vision area on the windshield.

In addition to potentially depending on airflow to function effectively, hydrophobic coatings may also be dependent on water droplet size for effective precipitation removal. For example, precipitation in the form of a light mist may not be sufficient for the coating's properties to result in maintaining a clear area of vision.

In summary, the current regulations identify speed and precipitation rate requirements that represent limiting conditions for windshield wipers and blowers, but not for hydrophobic coatings, so it is necessary to issue special conditions to maintain the level of safety represented by the current regulations.

These special conditions provide an appropriate safety standard for the hydrophobic coating technology as the sole means to maintain a clear area of vision by requiring it to be effective at low speeds and precipitation rates as well as the higher speeds and precipitation rates identified in the

current regulation. These are the only new or changed requirements relative to those in § 25.773(b)(1) at Amendment 25-108.

Applicability

As discussed above, this special condition is applicable to Gulfstream Model GV, GV-SP and GIV-X airplanes. Should Gulfstream Aerospace Corporation apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, the special condition would apply to that model as well.

The substance of this special condition has been subject to the notice and public comment procedure in several prior instances. Therefore, because a delay would significantly affect scheduled airplane deliveries, we are shortening the public comment period to 20 days.

Conclusion

This action affects only certain novel or unusual design features on Gulfstream Model GV, GV-SP, and GIV-X airplanes. It is not a rule of general applicability.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

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

The Proposed Special Condition

Accordingly, the Federal Aviation Administration (FAA) proposes the following special condition as part of the type certification basis for Gulfstream Aerospace Corporation Model GV, GV-SP, and GIV-X airplanes.

Pilot Compartment View—Hydrophobic Coatings in Lieu of Windshield Wipers

The airplane must have a means to maintain a clear portion of the windshield, during precipitation conditions, enough for both pilots to have a sufficiently extensive view along the ground or flight path in normal taxi and flight attitudes of the airplane. This means must be designed to function, without continuous attention on the part of the crew, in conditions from light misting precipitation to heavy rain at speeds from fully stopped in still air, to 1.5 V_{SR1} with lift and drag devices retracted.

Issued in Renton, Washington, on October 23, 2006.

Kalene C. Yanamura,

*Acting Manager, Transport Airplane
Directorate, Aircraft Certification Service.*

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA-2006-25947; Airspace
Docket No. 06-AAL-31]

Proposed Revision of Class D/E Airspace; Big Delta, Allen Army Airfield, Fort Greely, AK

AGENCY: Federal Aviation
Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: This action proposes to revise the controlled airspace at Allen Army Airfield (AAF), AK. The current Class D airspace is continuous. The United States Army has decided to staff the Allen AAF air traffic control tower (ATCT) part time. The Class D and E airspace will need to be revised in order to align Class D airspace effective times to match ATCT hours of operation. The current title of the airspace described in FAA Order 7400.9P will also change to reflect current guidance in FAA Order 7400.2E. Adoption of this proposal would result in reconfiguring the controlled airspace at Allen AAF, Delta Junction, AK.

DATES: Comments must be received on or before December 15, 2006.

ADDRESSES: Send comments on the proposal to the Docket Management System, U.S. Department of Transportation, Room Plaza 401, 400 Seventh Street, SW., Washington, DC 20590-0001. You must identify the docket number FAA-2006-25947/Airspace Docket No. 06-AAL-31, at the beginning of your comments. You may also submit comments on the Internet at <http://dms.dot.gov>. You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone 1-800-647-5527) is on the plaza level of the Department of Transportation NASSIF Building at the above address.

An informal docket may also be examined during normal business hours at the office of the Manager, Safety, Alaska Flight Service Operations, Federal Aviation Administration, 222

West 7th Avenue, Box 14, Anchorage, AK 99513-7587.

FOR FURTHER INFORMATION CONTACT: Gary Rolf, Federal Aviation Administration, 222 West 7th Avenue, Box 14, Anchorage, AK 99513-7587; telephone number (907) 271-5898; fax: (907) 271-2850; e-mail: gary.ctr.rolf@faa.gov. Internet address: <http://www.alaska.faa.gov/at>.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify both docket numbers and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. FAA-2006-25947/Airspace Docket No. 06-AAL-31." The postcard will be date/time stamped and returned to the commenter.

All communications received on or before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this notice may be changed in light of comments received. All comments submitted will be available for examination in the public docket both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of Notice of Proposed Rulemaking's (NPRM's)

An electronic copy of this document may be downloaded through the Internet at <http://dms.dot.gov>. Recently published rulemaking documents can also be accessed through the FAA's Web page at <http://www.faa.gov> or the Superintendent of Document's Web page at <http://www.access.gpo.gov/nara>.

Additionally, any person may obtain a copy of this notice by submitting a request to the Federal Aviation Administration, Office of Air Traffic

Airspace Management, ATA-400, 800 Independence Avenue, SW., Washington, DC 20591 or by calling (202) 267-8783. Communications must identify both docket numbers for this notice. Persons interested in being placed on a mailing list for future NPRM's should contact the FAA's Office of Rulemaking, (202) 267-9677, to request a copy of Advisory Circular No. 11-2A, Notice of Proposed Rulemaking Distribution System, which describes the application procedure.

The Proposal

The FAA is considering an amendment to the Code of Federal Regulations (14 CFR Part 71), which would revise the Class D and E airspace descriptions at Allen AAF, AK resulting from a change in the hours of activation at the Allen AAF Control Tower. The intended effect of this proposal is to adjust the Class D airspace activation time to align with the Allen AAF tower hours of operation. The class D airspace would only be in place while the tower is manned. The Class D airspace area will be effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory.

The Army does not need to operate the control tower 24 hours per day. Class D airspace is only in effect when a tower is open. When the tower is not open, the airspace would revert to Class E. Additionally, the title of each airspace description in FAA Order 7400.9P associated with Allen AAF would be changed. By convention, these titles are associated with the nearest city or town. In this case, "Delta Junction" should be referenced (not "Big Delta"). For example, the Class E5 airspace should be titled: "AAL AK E5 Delta Junction, AK". There is a smaller town named Big Delta about 10 miles further north of Delta Junction. It has been mistakenly listed in the description since 1995. This action would correct that error. The proposed airspace changes are sufficient in size to contain aircraft executing instrument procedures at Allen AAF, AK.

The area would be depicted on aeronautical charts for pilot reference. The coordinates for this airspace docket are based on North American Datum 83. The Class D airspace areas designated as 700/1200 foot transition areas are published in paragraph 6005 in FAA Order 7400.9P, *Airspace Designations and Reporting Points*, dated September 1, 2006, and effective September 15, 2006, which is incorporated by reference in 14 CFR 71.1. The Class D