



Federal Aviation Administration

Memorandum

Date: September 12, 2008

To: See Distribution

From: Manager, Transport Airplane Directorate, Aircraft Certification Service, ANM-100

Subject: Policy Statement on Clarification of Maximum Payload Capacity Definition in Design Approval Holder Rules

Memo No.: ANM-08-113-001

Regulatory Reference: §§ 26.11, 26.33, 26.37, and 26.43

Summary

The FAA has issued several design approval holder (DAH) rules¹ that refer to the “maximum payload capacity.” The maximum payload capacity criterion is used, along with other criteria, to determine whether a rule is applicable to a DAH. However, there has been confusion on the use and definition of the term. This policy memorandum clarifies the maximum payload capacity criterion when used with regard to these DAH rules and their corresponding operational rules.

Definition of Key Terms

In the policy statement below, the formatting (*italics*, plain text, or [square brackets]) and terms used (“must,” “should,” or “recommend”) have a specific meaning that is explained in Attachment 1.

Current Regulatory Material

This policy addresses §§ 26.11, 26.33, 26.35, 26.37, 26.41, 26.43, 26.45, and 26.47. The DAH rules apply, with some exceptions, to transport category airplanes with a maximum type-certificated capacity of 30 or more passengers or a maximum payload capacity of 7,500 pounds

¹ Equivalent Safety Provisions for Fuel Tank System Fault Tolerance Evaluation Requirements (SFAR 88), Reduction of Fuel Tank Flammability in Transport Category Airplanes, Enhanced Airworthiness Program for Airplane Systems/Fuel Tank Safety and Damage Tolerance Data for Repairs and Alterations.

or more, as established during the original certification of the airplane or during later increases in capacity. This applicability was based on covering airplanes where the safety benefits and the public interest are the greatest. In addition, by referring to the capacity established during original certification, a modifier or operator would not be able to avoid applying the requirements of the DAH rules by getting a design approval for a slightly lower capacity.

It was the FAA's intent to use criteria so that one could establish a maximum payload capacity for each airplane model, not a maximum payload capacity for an individual airplane or a specific airplane on a given flight. However, it has come to our attention that a maximum payload capacity is not type certificated for an airplane model during its original certification.

Section 119.3 of Title 14, Code of Federal Regulations (14 CFR) defines "maximum payload capacity" as "*the maximum zero fuel weight, less empty weight, less all justifiable aircraft equipment, and less the operating load.*" Aircraft equipment and operating loads may vary for different airplanes of the same model (e.g., airplanes carrying different emergency equipment) and for individual flights of the same airplane (e.g., an airplane carrying different amounts of food and beverages and related equipment on different flights). Therefore, one cannot calculate a single maximum payload capacity for a given airplane model using the above definition.

Although this definition has not been an issue for SFAR 88, it presents challenges for the Enhanced Airworthiness Program for Airplane Systems (EAPAS) rule, Aging Airplane Safety Rule (AASR), and the Reduction of Fuel Tank Flammability in Transport Category Airplanes (Fuel Tank Flammability) rule. A type certificate holder may calculate a maximum payload capacity for a representative airplane and determine that its airplanes are not subject to the DAH rules. A supplemental type certificate holder or applicant may modify airplanes of the same model, calculate a higher maximum payload capacity, and determine that its airplanes are subject to the DAH rules.

Since some of the DAH rules require the type certificate holder to develop data needed by modifiers, a supplemental type certificate holder or applicant will not be able to comply if the type certificate holder is not required to comply. In addition, some of the DAH rules have corresponding operational rules that also refer to maximum payload capacity. So, if a type certificate holder is not required to comply, then an operator may not have the necessary data to comply with its operational requirements.

Relevant Past Practice

In determining the applicability of SFAR 88 for airplanes that had a maximum payload capacity that hovered around 7,500 pounds, the FAA provided guidance related to the type certification of green airplanes (i.e., ones with no interior). For these airplanes the FAA allowed a representative interior completion weight to be used when calculating the maximum payload capacity. Based on this guidance and information supplied by the airplane manufacturers, we determined that the following airplane models had a maximum payload capacity of less than 7,500 pounds, and thus, SFAR 88 would not be applicable:

Gulfstream Business Jets (G1159, G1159B, G1159A, G-IV, GIV-X, GV, GV-SP, GVI)
Bombardier Challenger 300 (BD-100-1A10)

Bombardier Challenger (CL-600-1A11, CL-600-2A12, CL-600-2B16)
Bombardier Global Express and Global 5000 (BD-700-1A10, BD-700-1A11)

There were other transport category airplane models (e.g., Learjet 24, Cessna 650) that clearly had a maximum payload capacity of less than 7,500 pounds, and thus were not specifically addressed in the above list.

Although the FAA considered SFAR 88 applicable to supplemental type certificate holders that modified the above airplane models such that the maximum payload capacity was increased in excess of 7,500 pounds, we have reconsidered this interpretation, as discussed below.

Policy

When the FAA developed the maximum payload capacity criteria for EAPAS, AASR, and Fuel Tank Flammability, the intent was to have similar criteria as for SFAR 88. As mentioned above, during the implementation of SFAR 88, the FAA determined that certain Bombardier and Gulfstream model airplanes have a maximum payload capacity of less than 7,500 pounds. However, we recognized that these airplanes may be modified by an entity other than the type certificate holder (for example, by an applicant for a supplemental type certificate), and the modification may result in a maximum payload capacity greater than 7,500 pounds.

The FAA does not intend for these DAH rules to apply to an applicant for a supplemental type certificate if they do not apply to the type certificate holder for the airplane model being modified. Therefore, for the airplane models listed above, applicants for supplemental type certificates and operators can consider these models to have a maximum payload capacity of less than 7,500 pounds for the purposes of these DAH rules and their corresponding operating rules, regardless of the maximum payload capacity resulting from the supplemental type certificate applicant's proposed change.

As mentioned earlier, the maximum payload capacity criteria for these DAH rules is "7,500 pounds or more resulting from the original certification of the airplane or *later increase in capacity*." In accordance with 14 CFR 119.3, "the maximum zero fuel weight" is used to calculate the maximum payload capacity. The maximum zero fuel weight is approved by the FAA for a given airplane model. If the type certificate holder proposes to revise the maximum zero fuel weight for one of the above airplane models, the FAA will need to reassess whether the maximum payload capacity is still less than 7,500 pounds. If an airplane model listed above is type certificated in the future for a maximum capacity of 30 or more passengers, these DAH rules would be applicable regardless of the maximum payload capacity of the model.

Implementation

This policy provides clarification of the maximum payload capacity criterion when used with regard to the DAH rules and their corresponding operational rules. This clarification should be applied when determining whether these DAH rules apply to an existing type certificate or supplemental type certificate holder or to an applicant for a type certificate, supplemental type certificate, amended type certificate, or amended supplemental type certificate.

Conclusion

The FAA has determined that the following airplane models have a maximum payload capacity of less than 7,500 pounds, and thus, §§ 26.11, 26.33, 26.35, 26.37, 26.41, 26.43, 26.45, and 26.47 are not applicable. This same guidance may be used for future DAH rules that use the criterion of maximum payload capacity to determine the applicability.

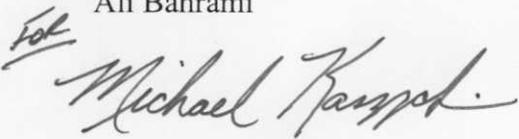
Gulfstream Business Jets (G1159, G1159B, G1159A, G-IV, GIV-X, GV, GV-SP, GVI)
Bombardier Challenger 300 (BD-100-1A10)
Bombardier Challenger (CL-600-1A11, CL-600-2A12, CL-600-2B16)
Bombardier Global Express and Global 5000 (BD-700-1A10, BD-700-1A11)

Applicants for a supplemental type certificate and operators can consider these models to have a maximum payload capacity of less than 7,500 pounds for the purposes of these DAH rules and their corresponding operating rules.

There are other transport category airplane models (e.g., Learjet 24, Cessna 650) that clearly have a maximum payload capacity of less than 7,500 pounds, and thus are not included in the above list. If the FAA becomes aware of other airplane models where the maximum payload capacity hovers around 7,500 pounds, these airplane models will be reviewed, a letter of clarification will be provided, and if appropriate, this memo will be updated to include the airplane model.

For questions regarding the information in this memo, please contact Meghan Gordon, at (425) 227-2138, or via email at meghan.gordon@faa.gov, or Russell (Rusty) Jones at (202) 267-7228 or by email at rusty.jones@faa.gov.

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Attachment: Definition of Key Terms

Definition of Key Terms

Table A-1 defines the use of key terms in this policy statement. The table describes the intended functional impact, and the formatting used to highlight these items.

- The term “must” refers to a regulatory requirement that is mandatory for design approval. Text communicating a requirement is in *italics*.
- The term “should” refers to instructions for a particular method of compliance. If an applicant wants to deviate from these instructions, he has to coordinate the alternate method of compliance with the Transport Standards Staff using an issue paper. There is no special text formatting used for methods of compliance.
- The term “recommend” refers to a recommended practice that is optional. Enclose recommendations in [] brackets.

Table A-1 Definition of Key Terms

	Regulatory Requirements	Acceptable Methods of Compliance	Recommendations
Language	Must	Should	Recommend
Format	<i>Italics</i>	Regular text (No special formatting)	[Square brackets]
Functional Impact	No Design Approval if not met	Alternative has to be approved by issue paper.	None, because it is optional

Examples from policy on Power Supply Systems for Portable Electronic Devices (PSS for PED):

- *Even though PSS for PED systems may use wiring that is produced for the consumer market, the wiring must meet the flammability requirements of § 25.869.*
- Although multiple power control switches may be used (e.g., zonal control of system power), there should be a single master switch that allows for the immediate removal of power to the entire PSS for PED
- [We recommend that you provide a means of indication to enable the cabin crew to determine which outlets are in use or which outlets are available for use.]