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Exemption No. 5243

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056

In the matter of the petition of **BRITISH AEROSPACE COMMERCIAL AIRCRAFT LIMITED** **for an exemption from § 121.312(a)(2) of the Federal Aviation Regulations**	**Regulatory Docket No. 26353**

GRANT OF EXEMPTION

By letters TAW/LMD/0973/90 dated September 10, 1990, and DMG/LMD/1063/90 dated October 1, 1990, Mr. T. A. Wood, Principal Airworthiness Engineer, and Mr. D. M. Gibbons, Chief Airworthiness Engineer, British Aerospace Commercial Aircraft Limited, petitioned for exemption from § 121.312(a)(2) of the Federal Aviation Regulations (FAR) on behalf of Air Wisconsin, a future U.S. operator of the ATP airplane, to permit operation of three airplanes which do not fully comply with the heat release and smoke density requirements for interior materials as specified in the regulation. This exemption would permit the operation of three airplanes, whose dates of manufacture are after August 20, 1990, with certain specified interior components that do not comply with the heat release and smoke emissions requirements of § 121.312(a)(2).

The ATP is a twin engine turbopropeller-powered airplane approved for a maximum seating capacity of 72 passengers. The type certification basis of the airplane does not include Amendment 25-66 to Part 25 of the FAR.

Section of the FAR affected:

Section 121.312, as amended by Amendment 121-198, requires, in part, that certain large surface-area cabin interior components of certain airplanes used in U.S. air carrier service must comply with the flammability and smoke emission standards of § 25.853 of Part 25 of the FAR. Airplanes manufactured on or after August 20, 1990, must comply with definitive standards of a maximum peak heat release rate of 65 kilowatts per square meter, a maximum total heat release of 65 kilowatt-minutes per square meter, and specific optical smoke density, D_s, of 200 (65/65/200). Those manufactured on or after August 20, 1988, but prior to August 20, 1990, are not required to meet the 65/65/200 standards of

§ 25.853; however, they must comply with interim standards of a maximum

peak heat release rate of 100 kilowatts per square meter and a maximum total heat release of 100 kilowatt-minutes per square meter (100/100) in order to be used in U.S. air carrier service. The date of manufacture, as used in § 121.312, is the date on which inspection records show that an airplane is in a condition for safe flight. This is not necessarily the date on which an airplane is in conformity to the approved type design or the date on which a certificate of airworthiness is issued since some items not relevant to safe flight, such as passenger seats, may not be installed at that time. It could be earlier, but would certainly be no later than the date on which the first flight of the airplane occurs.

Related sections of the FAR:

Section 135.169 of Part 135 of the FAR, as amended by Amendment 135-31, requires, in part, that large airplanes, except for commuter category airplanes, must meet the requirements of § 121.312. Any exemption from the provisions of § 121.312 would provide the same relief for Part 135 operators.

Section 25.853 of Part 25 of the FAR, as amended by Amendment 25-66, requires, in part, that airplanes for which an application for type certificate is made after September 26, 1988, must comply with the 65/65/200 standards described above using the test apparatus and procedures specified in Parts IV and V of Appendix F.

Parts IV and V of Appendix F of Part 25 specify the test apparatus and procedures to be used in showing compliance with the rate of heat release and smoke emission requirements of § 25.853, respectively. Heat release testing must be conducted using the Ohio State University (OSU) radiant rate of heat release apparatus; smoke testing must be conducted using the National Bureau of Standards (NBS) smoke chamber.

The petitioner's supportive information is as follows:

"In order to demonstrate compliance with § 121.312(a)(2) heat release testing has been undertaken on the materials used in the BAe ATP cabin interior. The testing has been completed in accordance with Parts IV and V to Appendix F of FAR Part 25."

The "Tapis" decorative material, which is used to cover large areas of the galleys and forward bulkheads, had previously been applied to other types of substrate on earlier deliveries of ATP airplanes. Initial indications were that this type of decorative material exhibited properties which significantly lowered the heat release values. Testing conducted previously with similar constructions was within the compliance limits. However, when applied to the substrates specified for Air Wisconsin airplanes, the expected reduction was not achieved. Lead times for the affected components are such that BAe is currently only able to install items manufactured from non-compliant materials.

"The above situation has been compounded by a late request from the Aircraft Customer to install a new left hand forward stowage unit. This replaces a much larger storage compartment and has the benefit of allowing much improved direct view of the passenger cabin from the forward attendant's seat. However, once the actual test results were obtained, BAe was unable to manufacture a compliant stowage unit in the time available."

British Aerospace considers that this petition is warranted and is in the public interest for the following reasons:

1. The degree of non-compliance is small.

2. The airplanes are of a higher standard than most existing in-service airplanes.

3. The ATP is a quieter airplane than the airplane it is replacing.

If the petition were not granted, it would not be possible to introduce the airplane into service as proposed which would result in hardship on the operator and would have an adverse effect on both the travelling public and those living close to airports.

In addition, the components that would be affected by the exemption comprise only five percent of the cabin surface. Therefore, the overall effect in the event of a fire is likely to be negligible. Also, a grant of this exemption will permit delivery and operation of three airplanes which would otherwise be grounded because of the non-compliant materials.

British Aerospace proposes to replace or recover the large surface area items with materials which comply with the regulations by August 1991. British Aerospace also proposes to begin production with the replacement materials in the second and third quarters of 1991. Their schedule would result in three airplanes being produced with non-compliant components.

The FAA finds, for good cause, that action on this petition should not be delayed by publication and comment procedures for the following reasons: (1) a grant of exemption would not set a precedent in that this matter involves unique circumstances of this manufacturer's efforts to achieve compliance prior to the deadline established by the regulation, and (2) delay in acting on the petition would be detrimental to the petitioner in that it would necessarily delay delivery of airplanes.

The FAA's analysis/summary is as follows:

The FAA has carefully reviewed the petitioner's arguments and has determined that there is sufficient merit to warrant a grant of exemption. Many of the components originally requested for exemption were components for which compliance was not required. By eliminating

these components from the request, the total non-compliant area is reduced to approximately five percent of the cabin surface required to comply with the regulation, as noted by BAe. In addition, the materials exceed the regulatory requirements by only about ten percent, with the exception of one material construction, which exceeds the requirement by 25 percent. Therefore, for those parts there is minimal impact on safety in granting an exemption.

The FAA considers that due to the large surface areas of the components, a permanent exemption from the requirement is not in keeping with the intent of the regulation. Therefore, while the airplanes will be permitted to enter service on schedule with the large surface area components which do not comply, the FAA will require that these items be replaced or recovered as appropriate with parts that are in compliance. Two of the items included in this exemption are relatively small parts whose test performance is only marginally above the required level, and will not be required to be replaced. In reviewing information provided by the petitioner, the FAA concurs that August 20, 1991, is an acceptable date for completion of the retrofit. Airplanes which are granted relief under the terms of this exemption will be required to be in compliance on that date to remain in service.

In consideration of the foregoing, I find that a grant of exemption is in the public interest, and will allow operation of the ATP airplanes for a limited period without an adverse impact on safety. Therefore, pursuant to the authority contained in §§ 313(a) and 601(c) of the Federal Aviation Act of 1958, delegated to me by the Administrator (14 CFR 11.53), the petition of British Aerospace Commercial Airplanes to exempt them from compliance with § 121.312(a)(2) of the FAR is granted, with the following provisions:

1. This exemption is limited to three airplanes to be delivered after August 20, 1990, with aircraft constructors numbers as follows:

   2028, 2029, 2032

2. The authority to operate the above airplanes with large interior panels that do not comply with § 121.312(a)(2) expires on August 20, 1991. The panels which must be brought into compliance are the left hand forward bulkhead, the left hand forward stowage unit, the left and right galley aisle panels and forward and aft faces and the forward face of the aft galley.

3. The components which are exempted are limited to those contained in BAe report ADE-SCG-R-ATP-25-B061.

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