



FEDERAL AVIATION AGENCY
CENTRAL REGION
Federal Building
601 East 12th Street
Kansas City, Missouri 64106

MAR 1 1967

IN REPLY
REFER TO CE-212

Mr. Don J. Grommesh
Chief Engineer
Lear Jet Industries, Inc.
P. O. Box 1280, Municipal Airport
Wichita, Kansas 67201

RECEIVED

MAR 2 1967

LEARJET CORP.
Engineering Dept.

Dear Mr. Grommesh:

This letter summarizes the special conditions applicable to your Model 25 airplane.

As indicated in the minutes of the Preliminary Type Certification Board meeting held September 14, 1966, the certification basis would include the following:

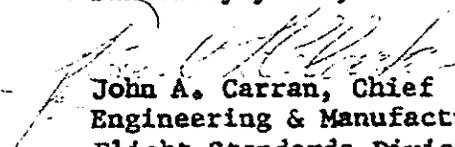
1. FAR 25 as amended to May 13, 1965 plus special conditions applicable to the Model 24 as outlined in FAA letters of August 5 and November 19, 1965.
2. Additional special conditions if applicable, one of which was agreed to at that meeting which would cover crashworthiness of propulsion systems. This special condition was transmitted to you in our letter dated 12/28/66.

Since the Preliminary TCB meeting, we have also determined that the proposed oxygen system special condition applicable to the Model 24 must be revised to provide for operation above 41,000 feet but not over 45,000 feet. Our letter dated February 17, 1967 includes the revised wording for this special condition.

In accordance with the above, we have enclosed three copies of the special conditions which are now applicable to your Model 25 airplane.

Any new design concepts which you may wish to incorporate or changes which may result from your type certification program will require further consideration. We will be pleased to discuss any phase of the certification program and to revise the special conditions, if necessary, as your type certification program progresses.

Sincerely yours,


John A. Carran, Chief
Engineering & Manufacturing Branch
Flight Standards Division

Enclosure

FEDERAL AVIATION AGENCY
FLIGHT STANDARDS DIVISION
KANSAS CITY, MISSOURI 64106

LEAR JET MODEL 25 SPECIAL CONDITIONS

These Special Conditions, established in accordance with FAR 21.21 and FAR 25, as amended to May 13, 1965, provide the certification basis for the Lear Jet Model 25.

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SPECIAL CONDITIONS FOR THE LEAR JET MODEL 251. Reference FAR 25.1441(d) - Oxygen Equipment and Supply

If certification for operation above 41,000 feet, but not above 45,000 feet, is requested, an oxygen system must be provided and the following criteria complied with:

- a. All occupants must wear an oxygen mask secured to the face and connected to the oxygen system at all times above 41,000 feet.
- b. Supplemental oxygen must be provided automatically to the donned mask at a cabin altitude above 15,000 feet.
- c. A diluter demand system for the crew and a continuous flow system for the passengers are acceptable if an immediate descent to 30,000 feet or below is an operational requirement in the event of cabin decompression resulting in a cabin pressure altitude above 15,000 feet.
- d. If a separate oxygen system is provided for compliance with the above requirements, its design and operating instructions must preclude any confusion which might result from the automatic presentation of a second mask during cabin depressurization.

2. Add: FAR 25.903(d)(3) - Vibration

Turbine engine installation shall not result in vibration characteristics of the engine exceeding those established in accordance with CAR 13 or FAR 33.

3. Replace: FAR 25.955(b) - Turbine Engine Fuel Feeding

The fuel system shall provide for continuous supply of fuel to the engines for normal operation without interruption due to depletion of fuel in any tank other than the main tank.

4. Add: FAR 25.1121(h) - Turbine Engine Exhaust System

Turbine engine exhaust system shall incorporate drains discharging clear of the airplane in normal ground and flight attitudes to prevent the accumulation of fuel after the failure of an attempted engine start.

5. Add paragraph to: FAR 25.1002 - Lightning Strike Protection

The fuel system shall be designed to provide protection against the ignition of flammable vapors occurring in the fuel tanks or the vent systems from lightning strikes or other sources.

6. Add: FAR 25.12 - General

Exposure of the airplane to negative accelerations resulting from air turbulence or airplane maneuvers shall not result in unsafe conditions occurring in the power plant installation or other airplane systems or components.

7. Reference FAR 21.21(b)(2) - Electrical System Inoperative

Demonstrate in flight, satisfactory operation of the airplane for a period of not less than five minutes with the electrical generating systems inoperative.

8. Reference FAR 21.21(b)(2) - Environmental Testing

An investigation shall be made in turbulence to determine the aircraft's dynamic response with the primary considerations for controllability and the pilot's physiological reactions which may affect his ability to see and use the flight instruments. This evaluation shall be conducted with the yaw damper both operative and inoperative.

9. Reference FAR 21.21(b)(2) - Out-of-Trim Conditions

Controllability and maneuvering stability tests with the stabilizer trim in reasonable out-of-trim condition within the normal limit load factor shall be made. These tests shall include the effects of maximum tolerances on the rigging of the various control elements.

10. Reference FAR 21.21(b)(2) - Propulsion Systems Crashworthiness

Flammable fluid systems within the fuselage must be designed, constructed, located, and installed so that in the event of a survivable crash:

- a. The release of hazardous quantities of flammable fluids from failure or damage of components is remote.
- b. Isolation with electric system components is maintained to the extent electrical burn-through of fuel system components and ignition of released fuel is remote.