

## SIZE STANDARDS BY SIC INDUSTRY

SIC code and description	Size standards in number of employees or millions of dollars
* * * *	*
DIVISION I—SERVICES .....	\$5.0
* * * *	*
EXCEPT:	
* * * *	*
7363 Help Supply Services .....	10.0
* * * *	*

Dated: May 30, 2000.

Aida Alvarez,  
Administrator.

[FR Doc. 00-14015 Filed 6-5-00; 8:45 am]

BILLING CODE 8025-01-P

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 25

[Docket No. NM170; Special Conditions No. 25-162-SC]

**Special Conditions: Raytheon Aircraft Company Model 4000; High Intensity Radiated Fields (HIRF)**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Raytheon Aircraft Company Model 4000 airplane. This airplane will utilize new avionics/electronics and electrical systems that will perform critical functions. The applicable regulations do not contain adequate or appropriate safety standards for the protection of these systems from the effects of high-intensity radiated fields (HIRF). These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that provided by the existing airworthiness standards.

**EFFECTIVE DATE:** July 6, 2000.

**FOR FURTHER INFORMATION CONTACT:** Mark Quam, FAA, Standardization Branch, ANM-113, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98055-4056; telephone (425) 227-2145; facsimile (425) 227-1149.

## SUPPLEMENTARY INFORMATION:

## Background

On May 3, 1996, Raytheon Aircraft Company, PO Box 85, Wichita, Kansas 67201-0085, submitted an application for a new type certificate for the Raytheon Model 4000. The significant aircraft design features include an 84 inch diameter graphite composite fuselage, new metal wing and a graphite composite skin on aluminum sub-structure empennage. The Model 4000 is 69 feet, 2 inches in length and 61 feet, 9 inches in width. It has a Primus Epic flightdeck, and two aft mounted PW308A engines. There are 12 forward-facing seats and a forward observer seat. The significant systems features include a new state of the art integrated avionics/electronics and electrical systems suite. The avionics/electronics and electrical systems installed in this airplane have the potential to be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

## Type Certification Basis

Under the provisions of 14 CFR § 21.17, Raytheon Aircraft Company must show that the Model 4000 meets the applicable provisions of part 25, as amended by Amendment 25-1 through Amendment 25-87 thereto.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for the Raytheon Aircraft Company Model 4000 airplane because of novel or unusual design features, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Model 4000 must comply with the fuel vent and exhaust emission requirements of part 34 and the noise certification requirements of part 36, and the FAA must issue a finding of regulatory adequacy pursuant to § 611 of Public Law 92-574, the "Noise Control Act of 1972."

Special conditions, as appropriate, are issued in accordance with § 11.49, after public notice, as required by §§ 11.28 and 11.29(b), and become part of the type certification basis in accordance with § 21.17(a)(2).

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, the special conditions would also apply to the other model under the provisions of § 21.101(a)(1).

## Novel or Unusual Design Features

The Raytheon Aircraft Company Model 4000 airplanes will utilize new avionics/electronics and electrical systems that will perform critical functions. These systems may be vulnerable to HIRF external to the airplane. The significant systems features include a new state of the art integrated avionics/electronics and electrical systems suite. The avionics/electronics and electrical systems installed in this aircraft have the potential to be vulnerable to high-intensity radiated fields (HIRF) external to the airplane.

## Discussion

There is no specific regulation that addresses protection requirements for electrical and electronic systems from HIRF. Increased power levels from ground-based radio transmitters and the growing use of sensitive avionics/electronics and electrical systems to command and control airplanes have made it necessary to provide adequate protection.

To ensure that a level of safety is achieved equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the Raytheon Aircraft Company Model 4000. These special conditions require that new avionics/electronics and electrical systems that perform critical functions be designed and installed to preclude component damage and interruption of function due to both the direct and indirect effects of HIRF.

## High-Intensity Radiated Fields (HIRF)

With the trend toward increased power levels from ground-based transmitters, plus the advent of space and satellite communications coupled with electronic command and control of the airplane, and the use of composite material in the airplane structure, the immunity of critical avionics/electronics and electrical systems to HIRF must be established.

It is not possible to precisely define the HIRF to which the airplane will be exposed in service. There is also uncertainty concerning the effectiveness of airframe shielding for HIRF. Furthermore, coupling of electromagnetic energy to cockpit-installed equipment through the cockpit window apertures is undefined. Based on surveys and analysis of existing HIRF emitters, an adequate level of protection exists when compliance with the HIRF protection special condition is shown with either paragraph 1, or 2 below:

1. A minimum threat of 100 volts rms per meter electric field strength from 10 KHz to 18 GHz.

a. The threat must be applied to the system elements and their associated wiring harnesses without the benefit of airframe shielding.

b. Demonstration of this level of protection is established through system tests and analysis.

2. A threat external to the airframe for both of the following field strengths for the frequency ranges indicated. Both peak and average field strength components from the Table are to be demonstrated.

Frequency	Field strength (volts per meter)	
	Peak	Average
10 kHz–100 kHz .....	50	50
100 kHz–500 kHz .....	50	50
500 kHz–2 MHz .....	50	50
2 MHz–30 MHz .....	100	100
30 MHz–70 MHz .....	50	50
70 MHz–100 MHz .....	50	50
100 MHz–200 MHz .....	100	100
200 MHz–400 MHz .....	100	100
400 MHz–700 MHz .....	700	50
700 MHz–1 GHz .....	700	100
1 GHz–2 GHz .....	2000	200
2 GHz–4 GHz .....	3000	200
4 GHz–6 GHz .....	3000	200
6 GHz–8 GHz .....	1000	200
8 GHz–12 GHz .....	3000	300
12 GHz–18 GHz .....	2000	200
18 GHz–40 GHz .....	600	200

The field strengths are expressed in terms of peak of the root-mean-square (rms) over the complete modulation period.

The threat levels identified above are the result of an FAA review of existing studies on the subject of HIRF, in light of the ongoing work of the Electromagnetic Effects Harmonization Working Group of the Aviation Rulemaking Advisory Committee.

#### Discussion of Comments

Notice of proposed special conditions No. 25–00–01–SC for the Raytheon Aircraft Model 4000 airplanes was published in the **Federal Register** on March 14, 2000 (65 FR 13703). No comments were received, and the special conditions are adopted as proposed.

#### Applicability

As discussed above, these special conditions are applicable to the Model 4000 airplane. Should Raytheon Aircraft Company apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design features, these special conditions would apply to that model as well under the provisions of § 21.101(a)(1).

#### Conclusion

This action affects only certain design features on the Raytheon Aircraft Company Model 4000 airplanes. It is not a rule of general applicability and affects only the applicant who applied to the FAA for approval of these features on the airplane.

#### 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 Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Raytheon Aircraft Company Model 4000 airplanes.

1. *Protection from Unwanted Effects of High-Intensity Radiated Fields (HIRF).* Each electrical and electronic system that performs critical functions must be designed and installed to ensure that the operation and operational capability of these systems to perform critical functions are not adversely affected when the airplane is exposed to high intensity radiated fields.

2. For the purpose of this special condition, the following definition applies:

*Critical Functions.* Functions whose failure would contribute to or cause a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Renton, Washington, on May 22, 2000.

**Donald L. Riggins,**

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

[FR Doc. 00–14156 Filed 6–5–00; 8:45 am]

**BILLING CODE 4910–13–U**

#### DEPARTMENT OF TRANSPORTATION

#### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 94–ANE–16–AD; Amendment 39–11758; AD 2000–11–10]

**RIN 2120–AA64**

#### Airworthiness Directives; Rolls-Royce plc RB211 Series Turbofan Engines

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD) applicable to certain Rolls-Royce plc (R–R) RB211 series turbofan engines. That AD currently requires the removal from service of intermediate pressure (IP) compressor stage 6–7 rotor shafts that exceed reduced cyclic life limits. This amendment requires further reduction of cyclic life limits and introduction of new reduced cyclic bands for rework. This action is prompted by additional stress analysis conducted following failure of an IP compressor stage 6 disk. The actions specified by this AD are intended to prevent an uncontained engine failure due to rupture of an IP compressor stage 6–7 rotor shaft.

**DATES:** Effective August 7, 2000. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of August 7, 2000.

**ADDRESSES:** The service information referenced in this AD may be obtained from Rolls-Royce plc, Technical Publications Department, P.O. Box 31, Derby, DE24 8BJ, UK, telephone 011–44–1332–242424. This information may be examined at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Jason Yang, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803–5299; telephone (781) 238–7747, fax (781) 238–7199.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 94–18–03, Amendment 39–9016 (59 FR 46536), applicable to R–R RB211–22B and –524 series turbofan engines, was published in the **Federal Register** on August 31, 1999 (64 FR 47447). That action proposed to require the removal from service of IP compressor stage 6–7 rotor shafts that exceed reduced cyclic life limits.

#### Conclusion

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposal or the FAA's determination of the cost to the public. The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.