These systems may be vulnerable to HIRF external to the airplane. The current airworthiness standards of part 25 do not contain adequate or appropriate safety standards for the protection of this equipment from the adverse effects of HIRF. Accordingly, these systems are considered to be novel or unusual design features.

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 that is equivalent to that intended by the regulations incorporated by reference, special conditions are needed for the Fairchild Dornier GmbH Model 728–100. These proposed 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, 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 in accordance with either paragraph 1 OR 2 below:

1. A minimum threat of 100 volts rms (root-mean-square) 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 of the field strengths indicated in Table 1 for the frequency ranges indicated. Both peak and average field strength components from Table 1 are to be demonstrated.

TABLE 1

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–30MHz	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.

Applicability

As discussed above, these special conditions are applicable to the Fairchild Dornier GmbH Model 728–100. Should Fairchild Dornier apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101(a)(1). Fairchild Dornier has submitted applications for certification of both increased and reduced passenger capacity derivatives of the 728–100. These derivative models are designated the 928–100, and the 528–100, respectively. As currently proposed, these derivative models share the same design features of an electronic flight control system as well as advanced avionics for the display and control of critical airplane functions as the 728–100, and it is anticipated that they will be be included in the applicability of this proposed special condition.

Conclusion

This action affects only certain novel or unusual design features on the Fairchild Dornier GmbH Model 728–100 airplane. 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 Proposed Special Conditions

Accordingly, the Federal Aviation Administration (FAA) proposes the following special conditions as part of the type certification basis for Fairchild Dornier GmbH Model 728–100 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 these special conditions, 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 January 9, 2002.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

National Airspace Redesign—Potential Revisions of Air Traffic Control (ATC) Services, Procedures, and Airspace, Juneau Area, Juneau, AK; Public Meeting 02–AAL–1

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of public meeting.

SUMMARY: The FAA will hold a public meeting in support of the National Airspace Redesign (NAR) on ATC airspace, service, and procedures affecting the Juneau area, Juneau, AK. The objective of this meeting is to provide interested persons an opportunity to review proposed ATC services and procedures that are under consideration in conjunction with the FAA Alaska Region Capstone Program. The overall Capstone goal is to maximize efficiency and improve safety for aircraft operating in the Juneau area. ATC is exploring ways to implement new technology as it becomes certified for use in the National Airspace System.

DATES: The meeting will be on Thursday, March 7, 2002, 5:30 pm to 9:00 pm.

ADDRESSES: Ray Renshaw Room, Guest House Inn and Suites, 1800 Shell Simmons Drive, Juneau, AK, 99801; phone (907) 790–6435.

FOR FURTHER INFORMATION CONTACT: Ray Collins, Federal Aviation Administration, AAL–539, 222 W. 7th Ave., Box #14, Anchorage, AK 99513–7587; telephone: (907) 271–1664; fax: (907) 271–2850; email: ray.collins@faa.gov.

SUPPLEMENTARY INFORMATION:

History and Background

The Alaskan Region's Capstone program is an accelerated effort to improve aviation safety and efficiency through installation of government-furnished Global Positioning System (GPS)-based avionics and data link communications suites. The initial Capstone location was Bethel, Alaska and Capstone activities may be viewed at: http://www.alaska.faa.gov/capstone/. In addition to the avionics suites, Capstone will install a ground infrastructure for weather observation, data link communications, surveillance, and Flight Information Services (FIS) to improve safety. Under Capstone, it is anticipated that most of the commercial aircraft based in the Juneau area will be equipped, on a voluntary basis, with government-furnished avionics; certain other commercial and government aircraft regularly operating in the area will also be equipped. Services provided through the avionics suite will improve the pilot's flight capabilities and situational awareness.

There have been several user meetings concerning expanding the Capstone program into the Juneau area; the most recent have had Air Traffic Division representation that briefed a range of potential ATC services that might be provided using Capstone technology. These range from Bright Radar Indicator Tower Equipment (BRITE) displays in the Juneau airport traffic control tower, surveillance services for IFR aircraft, ground aircraft/vehicle surveillance, enhanced traffic information in the airport traffic area, and search and rescue services from the AFSS in Southeast Alaska.

Today, the National Airspace Redesign mandates a review of airspace and efficiency nationwide. It is the goal of the Alaskan Region's Air Traffic Division to address airspace, ATC Capstone enhancements, and services from an overall systems perspective in the Juneau area.

Meeting Procedures

(a) The meeting will be informal in nature and will be conducted by representatives of the FAA Alaskan Region Air Traffic Division. The meeting will not be formally recorded.

(b) The meeting will be open to all persons on a space-available basis. Every effort was made to provide a meeting site with sufficient capacity for expected participation. There will be neither admission fee nor other charge to attend and participate.

(c) Any person who wishes to present a position paper to FAA representatives pertinent to the revision of ATC services, airspace or procedures may do so.

(d) An official verbatim transcript or minutes of the informal airspace meeting will not be made. However, a list of the attendees, written statements received from attendees during and after the meeting and a digest of discussions during the meeting will be included in the administrative record for the project.

(e) Every reasonable effort will be made to hear all concerns of interested persons consistent with a reasonable closing time for the meeting. Written materials may also be submitted to the team for up to two weeks (14 days) after the close of the meeting.

Agenda

a. Opening remarks and discussion of meeting procedures

b. Presentation of areas under consideration, user feedback, and aircraft airborne avionics equipment:

(1) Tower BRITE-like Display: Tower surveillance display that depicts ADS–B and transponder Mode A/C and Mode S equipped aircraft. Provides situational awareness for tower controllers. DRAWBACK: Unable to see primary target (non-equipped) aircraft and new transponder display technology must be certified prior to use.

(2) Terminal IFR surveillance service: Discussion has taken place within the Air Traffic Division concerning providing ''low level'' terminal approach control services in the Juneau area to support an IFR structure. As the concept developed, several constraints became obvious: vectors below 5,500 feet MSL are not possible; IFR traffic count does not support the establishment of an approach control facility, and ATC delays, while increasing, are not a significant issue at Juneau. Informal discussion with several operators in the Juneau area reveals these operators do not forsee changes in the way they conduct operations in the near or long term—they operate VFR and do not see this changing. Feedback: will operators equip and fly in an IFR structure.

(3) ARTCC: The potential exists to provide continuous radar like coverage for IFR aircraft operating into and from Juneau. Procedures could possibly be developed to reduce delays using this seamless coverage, however, delays will continue to occur due to terrain limitations effecting aircraft and ATC procedures.

(4) AFSS Display(s): Three areas are under consideration—an airport ground surveillance system where AFSS personnel will be able to ''see'' equipped aircraft and vehicles operating on the ground when the tower is closed; a BRITE type display where specialist can ''see'' equipped aircraft operating in the pattern area when the tower is closed; a monitor system where ADS–B aircraft are displayed and are able to be located at the last known position in the event contact is lost. The AFSS display(s) are contingent on aircraft/vehicle equipage. Additionally, use of display equipment is a significant departure from established FSS functions and extensive coordination and approval with FAA Headquarters and the workforce would be required. Finally, there are technical challenges ahead for any automated flight following system.

(5) Airspace: Currently, Juneau has Class D airspace. Expansion or change to this airspace is not anticipated, however, this meeting is part of the National Airspace Review process.

(c) Question and answer period.

(d) Closing comments.

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Issued in Anchorage, AK, on January 11, 2002.

Stephen P. Creamer,

Assistant Manager, Air Traffic Division, Alaskan Region.

[FR Doc. 02–1508 Filed 1–18–02; 8:45 am]

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