

Issued in Des Plaines, Illinois on June 21, 2001.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Notice of Intent To Rule on Application To Impose and Use the Revenue From a Passenger Facility Charge (PFC) at Hector International Airport, Fargo, ND

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of intent to rule on application.

SUMMARY: The FAA proposes to rule and invites public comment on the application to impose and use the revenue from a PFC at Hector International under the provisions of the Aviation Safety and Capacity Expansion Act of 1990 (Title IX of the Omnibus Budget Reconciliation Act of 1990) (Public Law 101-508) and Part 158 of the Federal Aviation Regulations (14 CFR Part 158).

DATES: Comments must be received on or before August 1, 2001.

ADDRESSES: Comments on this application may be mailed or delivered in triplicate to the FAA at the following address: Bismarck Airports District Office, 2301 University Drive, Building 23B, Bismarck, North Dakota 58504. In addition, one copy of any comments submitted to the FAA must be mailed or delivered to Shawn A. Dobberstein, Executive Director of Hector International Airport at the following address: P.O. Box 2845, Fargo, North Dakota 58108.

Air carriers and foreign air carriers may submit copies of written comments previously provided to the City of Fargo Municipal Airport Authority under section 158.23 of Part 158.

FOR FURTHER INFORMATION CONTACT: Tom Schauer, Acting Manager, Bismarck Airports District Office, 2301 University Drive, Building 23B, Bismarck, North Dakota 58504 (701-323-7380). The application may be reviewed in person at this same location.

SUPPLEMENTARY INFORMATION: The FAA proposes to rule and invites public comment on the application to impose and use the revenue from a PFC at Hector International Airport under the provisions of the Aviation Safety and Capacity Expansion Act of 1990 (Title

IX of the Omnibus Budget Reconciliation Act of 1990) (Public Law 101-508) and part 158 of the Federal Aviation Regulations (14 CFR part 158).

On June 11, 2001 the FAA determined that the application to impose and use the revenue from a PFC submitted by City of Fargo Municipal Airport Authority was substantially complete within the requirements of section 158.25 of Part 158. The FAA will approve or disapprove the application, in whole or in part, no later than September 14, 2001.

The following is a brief overview of the application.

PFC application number: 01-05-C-00-FAR.

Level of the proposed PFC: \$4.50.

Proposed charge effective date: September 1, 2002.

Proposed charge expiration date: January 1, 2004.

Total estimated PFC revenue: \$1,942,080.00.

Brief description of proposed projects: Emergency electrical generator for the passenger terminal facility, jet bridge conversion equipment, UHF frequency airport radio system, security announcement system, automated passenger boarding bridges, rehabilitate passenger terminal exterior and upgrade heating, ventilating and air conditioner system, emergency generator in snow removal equipment maintenance facility, airport signage, PFC development costs, purchase snow removal equipment, security system modifications, passenger lift and stairs, PFC audit fees and administrative reimbursement for years 1997, 1998 and 1999, flight information and display system, forward looking infrared system for aircraft rescue and fire fighting vehicle, rehabilitate runway 17 threshold lights, purchase runway pavement friction measuring device, terminal apron rehabilitation, taxiway B3 reconstruction, eastside general aviation apron improvements, eastside general aviation storm sewer rehabilitation, eastside commercial apron improvements, year 2000 upgrade of security access control and runway surface sensor systems, rehabilitate runway 13/31, improve drainage along taxiway A, install runway threshold lights on runway 8/26, construct county drain 10, construct perimeter road, prepare plans and specifications for runway 8/26 extension and perimeter road, master plan update.

Class or classes of air carriers which the public agency has requested not be required to collect PFCs: Air taxi/commercial operators filing FAA form 1800-31.

Any person may inspect the application in person at the FAA office listed above under **FOR FURTHER INFORMATION CONTACT**.

In addition, any person may, upon request, inspect the application, notice and other documents germane to the application in person at Hector International Airport.

Issued in Des Plaines, Illinois on June 21, 2001.

Robert Benko,

Acting Manager, Planning and Programming Branch, Airports Division, Great Lakes Region.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Policy Statement Number ANM-01-04; System Wiring Policy for Certification of Part 25 Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of policy statement; request for comments.

SUMMARY: This notice announces the FAA's policy with respect to the type design data needed for the certification of wiring installed on transport category airplanes. The policy is necessary to correct deficiencies associated with the submittal of design data and instructions for continuing airworthiness involving airplane system wiring for type design, amended design, and supplemental design changes. This notice advises the public, in particular applicants for type certificates, amended type certificates, supplemental type certificates, or type design changes, of the range and quality of type design data that the FAA will expect applicants to submit as part of any certification project. This notice is necessary to advise the public of FAA policy and give all interested persons an opportunity to present their views on the policy statement.

DATES: Send your comments on or before August 1, 2001.

ADDRESSES: Address your comments to the individual identified under **FOR FURTHER INFORMATION CONTACT**.

FOR FURTHER INFORMATION CONTACT: Gregory Dunn, Federal Aviation Administration, Transport Airplane Directorate, Transport Standards Staff, Airplane and Flight Crew Interface Branch, ANM-111, 1601 Lind Avenue SW., Renton, WA 98055-4056; telephone (425) 227-2799; fax (425)

227-1320; e-mail:
gregory.dunn@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites your comments on this proposed general statement of policy. We will accept your comments, data, views, or arguments by letter, fax, or e-mail. Send your comments to the person indicated in **FOR FURTHER INFORMATION CONTACT**. Mark your comments, "Comments to Policy Statement ANM-01-04."

Use the following format when preparing your comments:

- Organize your comments issue-by-issue.
 - For each issue, state what specific change you are requesting to the proposed general statement of policy.
 - Include justification, reasons, or data for each change you are requesting.
- We also welcome comments in support of the proposed policy.

We will consider all communications received on or before the closing date for comments. We may change the proposals contained in this notice because of the comments received.

Background

The safety standards for civil transport category airplanes are specified in Title 14, Code of Federal Regulations (CFR), part 25. If an applicant demonstrates that a particular design (i.e., a particular model) complies with these standards, the FAA issues it a design approval. The drawings and other data that describe that design are known as the "type design." When an applicant submits the necessary documents required for type certification to the FAA for approval, the compilation of those documents is known as the "type design data package."

Certification projects submitted to the FAA for approval generally fall into two different categories:

1. **Multiple Approvals:** Multiple approvals are approvals for modifications that may be installed on any airplane of a specific type. These approvals require a data package that defines the installation so that it may be duplicated on another airplane by an installer. It is FAA's policy to require that type design data packages for multiple approvals include the following:

- A drawing package that completely defines the configuration, material, and production processes necessary to produce each part in accordance with the certification basis of the product.
- Any specifications referenced by the required drawings.

- Drawings that completely define the location, installation, and routing, as appropriate, of all equipment in accordance with the certification basis of the product. If the modification being approved is a change to a type certificated product, the modification must be equivalent to and compatible with the previously approved type design standards.

In addition, any applicant for a type certificate (TC), supplemental type certificate (STC), or type design change must submit Instructions for Continued Airworthiness in accordance with § 21.50 ("Instructions for continued airworthiness and manufacturer's maintenance manuals having airworthiness limitations sections").

2. **One-Only Approvals:** Some modification approvals are specific to only one airplane by serial number. These modifications are often referred to as "one-only approvals." For one-only approvals, duplication of the installation is not necessary and different (i.e., lesser) data standards may apply. The certification regulations for one-only approvals permit the use of photographs and other similar data to document the modification. The degree of compliance of the policy statement herein for one-only design approvals is left to discretion of the certification engineer.

Based on certification projects submitted to the FAA for review in recent years, the FAA has become aware that there is some confusion among applicants as to the definition of "type design," especially with respect to the inclusion of drawings and specifications necessary to define the wiring configuration associated with equipment installation. In a number of recent certification projects, type design data packages that were submitted did not include wiring diagrams showing the source and destination of all wire associated with the installation. Also, wire installation drawings showing airplane wire routing, grounding, shielding, clamping, conduits, etc., either were missing or lacked sufficient detail. The wiring diagrams and installation drawings did not contain the necessary information intended by the relevant regulations. These drawing packages did not adequately and clearly define the configuration of the model to be certificated. In addition, Instructions for Continued Airworthiness, as required by the regulations, were not defined.

Current Regulatory Requirements

The type and quality of data required for type design data packages and requirements for Instructions for

Continuing Airworthiness are indicated in the regulations. The pertinent sections of 14 CFR are as follows:

§ 21.31 ("Type design"): This section defines and describes "type design."

§ 21.33 ("Inspection and tests"): This section, specifically § 21.33(b), provides additional insight as to the contents of the type design data package.

§ 21.21 ("Issue of type certificate: normal, utility, acrobatic, commuter, and transport category aircraft; manned free balloons, special classes of aircraft, aircraft engines; propellers"): This section lists pertinent requirements for a type certificate.

§ 21.50 ("Instructions for continued airworthiness and manufacturer's maintenance manuals having airworthiness limitations sections"): This section requires applicants to submit instructions for continued airworthiness as part of their type design data package. Paragraph 21.50(b) is relevant to this policy statement.

§ 21.101 ("Designation of applicable regulations") and § 21.115 ("Applicable requirements"): These sections make it clear that these data requirements apply to changes to type certificates.

Procedures for accomplishing the evaluation and approval of airplane type design data can be found in FAA Order 8110.4B, "Type Certification," dated April 24, 2000. This document gives comprehensive guidance on what constitutes a design package and what is necessary to make acceptable findings of compliance.

Identified Problems

Ambiguous Definition of Configuration: As mentioned above, the FAA has identified a number of recently submitted type design data packages that did not meet the intent of § 21.31(a). Specifically, these packages did not completely define the certification configuration. For example, these packages did not completely define specific routing and installation of wiring on the airplane, which then left an inordinate portion of the installation to the discretion of the installer.

The routing of wiring is an important aspect not only to the system being modified, but also to other systems that can be affected by that wiring. It is important that the routing of wiring strictly follow the criteria established by the FAA in the certification basis, as reflected in the holder's original or subsequently approved type design. This requires installation drawings and instructions that completely define the required routing and installation with sufficient detail to allow repeatability of the installation.

System Safety Assessment: A system safety assessment is done as part of the installation of any equipment on the airplane. This typically consists of a functional hazard analysis, failure mode and effects analysis, zonal analysis, or other safety analyses appropriate to the system being installed. In the past, insufficient emphasis has been placed on an examination of failures of wiring external to the actual line replaceable units being installed. Failure of wiring in bundles due to chaffing, contamination, or other causes may affect the continued safe operation of the airplane.

References to General Guidance: Problems occur when applicants over rely on "standard practices" or other general guidance for installation details. Often, type design data packages make references to FAA Advisory Circular (AC) 43-13, "Acceptable Methods, Techniques, and Practices—Aircraft Inspection and Repair," for installation instructions. That guidance is general in nature and offers applicants multiple options for compliance. Because the installer can choose from a number of options for installation details, it is difficult for the FAA to find that the configuration complies with the criteria established by the FAA in the certification basis for a previously approved type design. An installer could make inappropriate choices of method, depending upon his or her previous experience and training.

The practice of referencing general guidance, on those occasions when safety assurances and certification criteria necessitate strict adherence to specified certification standards, could result in an incomplete definition of the installation configuration.

Omission of Manufacturing Process Specifications: There also have been cases where crucial manufacturing process specifications were omitted in the type design data packages pertaining to wiring installation details. This has led to insufficient control of the production of parts, and consequent airworthiness problems related to faulty parts manufacturing. This omission error frequently occurs when the type design approval holder routinely uses a complex process, but has not carefully defined the process in the type design data. As a consequence, it can result in approval of replacement parts that may not comply with necessary but undefined processing requirements.

Modifications Not Compatible With Original Type Design Standards: Another common problem occurs when a modifier is unaware of, or does not specify, installation and routing practices that are compatible with the

certification standards established for the original type design.

Some manufacturers provide an abbreviated version of their installation and routing specifications in the maintenance manual that they prepare for their products. These specifications may not be readily available to modifiers. This can result in "inadvertent non-compliance" with certification requirements. One example of this kind of inadvertent non-compliance would be the installation of a power wire for a modification in a wire bundle containing critical wiring that the original manufacturer was required to isolate from other systems. This type of situation can be prevented by the applicant using experienced design engineers, doing physical inspections of the airplanes to be modified to ensure compatibility, and using the original airplane manufacturer's wiring installation guidelines.

Instructions for Continued Airworthiness: A review of past certification projects indicates that the maintenance aspects of system wire external to the installed equipment is not being adequately addressed. The integrity of the wiring is typically left to those doing general airplane maintenance that relies on visual inspections. However, visual inspections may not be adequate for wiring routed in metal or opaque conduits, wire in high vibration areas, or wire located in difficult to inspect areas. Equipment installers need to address any special maintenance requirements for the airplane wiring associated with equipment installation.

Statement of FAA Policy

Unambiguous Definition of Configurations: Type design data packages should meet the intent of § 21.31(a). These packages should completely define the certification configuration. Specifically, routing and installation of wiring on the airplane should be addressed. It is important that the routing of wiring strictly follow the intent of the criteria established by the FAA in the certification basis as reflected in the original or subsequently approved type design approval holder's design. The installer should provide with each application for design approval the following:

- Wiring diagrams showing source and destination of all airplane wiring associated with equipment installation;
 - Installation drawings.
- Installation drawings that completely defines the configuration typically will identify:
- Equipment locations,

- Wiring routings,
- Mounting and support details, and
- Other such details of features.

System Safety Assessment: Certain airworthiness criteria require failure analyses (i.e., failure mode and effect analysis, zonal analysis, or other safety analysis) to demonstrate that a failure of the system under consideration:

- Does not, in itself, constitute an unacceptable hazard, and
- Does not result in damage to other systems that are essential to safety.

The system safety assessment should include an assessment of the effects of failures of the airplane wire and its associated wire bundle for equipment installed on the airplane. The analysis should consider the possible effects wire system failures would have on systems required for safe flight and landing due to damage in collocated wiring bundles and the possibility of smoke and/or fire events.

Failure of other systems must not damage a system being modified if the modified system is essential to safety. Such analysis requires that any possible interaction between systems be examined. This, in turn, requires definitive knowledge of the configuration through design control and an understanding of the airplane manufacturer's wire installation rules, especially any requirements that pertain to wire separation.

Specific Installation Drawings Instead of General References: The FAA expects the applicant to provide definitive drawings instead of merely statements such as "install in accordance with industry standard practices," or "install in accordance with AC 43.13." The FAA considers such statements inadequate because the standard practices cannot define the precise location or routing of the wiring.

Process Specifications and Modifications Compatible with Original Standards: As noted in § 21.21, certain of the airworthiness requirements require analysis or tests to define the strength, durability, and life of components associated with the installation of wiring in the airplane (i.e., connectors, brackets, wire constraints, grommets, ground terminations, etc.). These tests and analyses require complete definition of the parts so that:

- Conformity of the parts to the type design may be verified, and
- The characteristics of the parts important for test or analysis may be determined.

The airplane wiring parts specification provides the basis for necessary stress, durability, and life analysis. A complete definition of the

parts, including wiring and wire installation hardware, requires a drawing package that clearly and completely identifies:

- Shape,
- Material,
- Production processes,
- Any other properties affecting strength or functionality of each part, and
- The arrangement of each part in the final assembly.

As an example, the FAA expects drawings to identify the material specification, heat treat, corrosion protection or other finish, and any other important characteristic of each part subject to test or analysis for showing compliance with the airworthiness requirements. Much of this information can be provided by reference on the drawings to material or process specifications; the references then become part of the drawing and, consequently, part of the type design data package.

Modifiers of aeronautical products should use practices that reflect the certification criteria applicable to the original airplane manufacturer (OAM). The applicant should demonstrate that installation specifications and routing practices for the wiring used by modifiers is either the same as, or compatible with, those that are used presently for showing compliance to the type design certification requirements. Specifically, wire separation, wire types, wire bundle sizes, brackets, and clamping should be consistent with the approved standards. This may require the applicant and/or modifier to:

- Obtain or determine the applicable OAM design standards and/or practices for a given installation,
- Do a physical inspection of the airplanes to be modified to ensure compatibility, and
- Develop processes and procedures to address compatibility between the original installation and the modification.

Modifiers and installers should use the airplane manufacturer's maintenance manuals, such as Maintenance Manual Chapter 20 ("Standard Practices Airframe"), Maintenance Manual Chapter 70 ("Standard Practices Engines"), or Chapter 20 ("Standard Practices Wiring") as the primary source of wiring installation information.

Instructions for Continued Airworthiness: Paragraph 21.50(b) of the regulations requires that Instructions for Continued Airworthiness (ICA) be supplied by the modifier for modifications to aircraft and related products. The ICA for any specific wiring maintenance should be

addressed where § 25.1529 is included in the certification basis.

Assessment of wire condition relies heavily on visual inspection. Consequently, the ICA should address inspectability of wire in conduits and difficult to inspect areas of the airplane. Where wire cannot be inspected visually, the ICA should address wire removal for inspection, when necessary, and the use of inspection techniques that do not rely on visual inspection alone. For example, wire in metal conduits may require repeated inspections for wear.

The FAA expects applicants for modifications to provide airworthiness instructions for the proposed changes in a format compatible with other maintenance instructions for the aircraft involved.

Effect of This Statement of Policy

The general policy stated in this document is not intended to establish a binding norm. It does not constitute a new regulation and the FAA would not apply or rely upon it as a regulation. Those tasked with the responsibility of airplane certification should generally attempt to follow this policy, when appropriate. In determining compliance with certification standards, each certification office has the discretion not to apply these guidelines where it determines that they are inappropriate. However, the certification office should strive to implement this guidance to the fullest extent possible to facilitate standardization and ensure that wiring installation details are adequately addressed during certification. Applicants should expect that the certifying officials will consider this information when making findings of compliance relevant to certification actions. Applicants also may consider the material contained in this policy statement as supplemental to that currently contained in 14 CFR part 21 when developing a means of compliance with the relevant certification standards.

Finally, as with all advisory material, this statement of policy identifies one means, but not the only means, of compliance.

Issued in Renton, Washington, on June 25, 2001.

Vi L. Lipski,

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

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

RTCA Special Committee 188: Minimum Aviation System Performance Standards for High Frequency Data Link

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of RTCA Special Committee 188 meeting.

SUMMARY: The FAA is issuing this notice to advise the public of a meeting of RTCA Special Committee 188: Minimum Aviation System Performance Standards for High Frequency Data Link.

DATES: The meeting will be held July 10, 2001 starting at 1 pm.

ADDRESSES: The meeting will be held at RTCA, 1140 Connecticut Avenue, NW., Suite 1020, Washington, DC 20036.

FOR FURTHER INFORMATION CONTACT: RTCA Secretariat, 1140 Connecticut Avenue, NW., Washington, DC, 20036; telephone (202) 833-9339; fax (202) 833-9434; web site <http://www.rtca.org>.

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a) (2) of the Federal Advisory Committee Act (Pub.L. 92-463, 5 U.S.C. appendix 2), notice is hereby given for a Special Committee 188 meeting. The agenda will include:

July 10, 2001

- Opening Plenary Session (Chairman's Introductory Remarks, Approval of Previous Meeting Summary, Review of Agenda and Work Plan)
- Working Group 1, Review of High Frequency Data Link (HFDL) Minimum Aviation System Performance Standard (MASPS) Status and Draft Report
- Closing Plenary Session (Review Actions Items, Make Assignments, Other Business, Date, Place and Time of Next Meeting, Adjourn)

Attendance is open to the interested public but limited to space availability. With the approval of the chairman, members of the public may present oral statements at the meeting. Persons wishing to present statements or obtain information should contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section. Members of the public may present a written statement to the committee at any time.