Executive Orders 13563 and 12866, Regulatory Review

This rule has been reviewed by the Office of Management and Budget in accordance with Executive Orders 13563 and 12866.

Federalism

We have examined this rule in accordance with Executive Order 13132, “Federalism,” and have determined that this rule will not have any negative impact on the rights, roles and responsibilities of State, local, or tribal governments.

List of Subjects in 5 CFR Part 890

Administrative practice and procedure, Government employees, Health facilities, Health insurance, Health professions, Hostages, Iraq, Kuwait, Lebanon, Military personnel, Reporting and recordkeeping requirements, Retirement.

Beth F. Cobert,
Acting Director.

Accordingly, OPM is amending 5 CFR part 890 as follows:

PART 890—FEDERAL EMPLOYEES HEALTH BENEFITS PROGRAM

§ 890.102 Coverage.

(h) Notwithstanding paragraphs (c)(1) and (2) of this section, an employee who is in a position identified by OPM that provides emergency response services for wildland fire protection is eligible to be enrolled in a health benefits plan under this part.

(i) Notwithstanding paragraphs (c)(1) through (3) of this section, upon request by the employing agency, OPM may grant eligibility to employees performing similar types of emergency response services to enroll in a health benefits plan under this part. In granting

adequate requirements for the application of rechargeable lithium batteries in airborne applications. This type of battery possesses certain failure and operational characteristics with maintenance requirements that differ significantly from that of the nickel-cadmium (Ni-Cd) and lead-acid rechargeable batteries currently approved in other normal, utility, acrobatic, and commuter category airplanes. Therefore, the FAA is issuing this special condition to address (1) all characteristics of the rechargeable lithium batteries and their installation that could affect safe operation of the modified Model PC–12, PC–12/45, and PC–12/47 airplanes, and (2) appropriate Instructions for Continued Airworthiness (ICAW) that include maintenance requirements to ensure the availability of electrical power from the batteries when needed.

Type Certification Basis

Under the provisions of § 21.101, Finnoff Aviation must show that the Model PC–12, PC–12/45, and PC–12/47 airplanes, as changed, continue to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A78EU 1 or the applicable regulations in effect on the date of application for the change.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 23) do not contain adequate or appropriate safety standards for the Model PC–12, PC–12/45, and PC–12/47 airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Model PC–12, PC–12/45, and PC–12/47 airplanes must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same or similar novel or unusual design feature, the special conditions would

also apply to the other model under § 21.101.

Novel or Unusual Design Features

The Model PC–12, PC–12/45, and PC–12/47 airplanes will incorporate the following novel or unusual design features: Installation of a rechargeable lithium battery as the main or engine start aircraft battery.

Discussion

Presently, there is limited experience with use of rechargeable lithium batteries and rechargeable lithium battery systems in applications involving commercial aviation. However, other users of this technology, ranging from personal computers, wireless telephone manufacturers to the electric vehicle industry, have noted safety problems with rechargeable lithium batteries. These problems include overcharging, over-discharging, flammability of cell components, cell internal defects, and during exposure to extreme temperatures that are described in the following paragraphs.

1. Overcharging: In general, rechargeable lithium batteries are significantly more susceptible than their Ni-Cd or lead-acid counterparts to thermal runaway, which is an internal failure that can result in self-sustaining increases in temperature and pressure. (This is especially true for overcharging which causes heating and destabilization of the components of the cell, leading to the formation (by plating) of highly unstable metallic lithium. The metallic lithium can ignite, resulting in a self-sustaining fire or explosion. Finally, the severity of thermal runaway due to overcharging increases with increasing battery capacity due to the higher amount of electrolyte in large batteries.

2. Over-discharging: Discharge of some types of lithium battery cells beyond a certain voltage (typically 2.4 volts) can cause corrosion of the electrodes of the cell, resulting in loss of battery capacity that cannot be reversed by recharging. This loss of capacity may not be detected by the simple voltage measurements commonly available to flight crews as a means of checking battery status, which is a problem shared with Ni-Cd batteries. In addition, over-discharging has the potential to lead to an unsafe condition (creation of dendrites that could result in internal short circuit during the recharging cycle).

3. Flammability of Cell Components: Unlike Ni-Cd and lead-acid batteries, some types of lithium batteries use liquid electrolytes that are flammable. The electrolyte may serve as a source of fuel for an external fire, if there is a breach of the battery container.

4. Cell Internal Defects: The rechargeable lithium batteries and rechargeable battery systems have a history of undetected cell internal defects. These defects may or may not be detected during normal operational evaluation, test, and validation. This may lead to unsafe conditions when operating in service.

5. Extreme Temperatures: Exposure to an extreme temperature environment has the potential to create major hazards. Care must be taken to ensure that the lithium battery remains within the manufacturer’s recommended specification.

These problems experienced by users of lithium batteries raise concern about the use of these batteries in commercial aviation. The intent of the special condition is to establish appropriate airworthiness standards for lithium battery installations in the Model PC–12, PC–12/45, and PC–12/47 airplanes and to ensure, as required by §§ 23.1309 and 23.601, that these battery installations are neither hazardous nor unreliable.

In summary, the lithium battery installation will consider the following items:

(a) The flammable fluid fire protection requirement is § 23.863. In the past, this rule was not applied to batteries of normal, utility, acrobatic, and commuter category airplanes since the electrolytes utilized in Ni-Cd and lead-acid batteries are not flammable.

(b) New Instructions for Continuous Airworthiness that include maintenance requirements to ensure that batteries used as spares have been maintained in an appropriate state of charge and installed lithium batteries have been sufficiently charged at appropriate intervals. These instructions must also describe proper repairs, if allowed, and battery part number configuration control.

(c) The applicant must conduct a system safety assessment for the failure condition classification of a failure of the battery charging and monitoring functionality (per Advisory Circular AC 23.1309–1E),2 and develop mitigation to preclude any adverse safety effects. Mitigation may include software, Airborne Electronic Hardware (AEH) or a combination of software and hardware, which should be developed to the appropriate Design Assurance Level(s) (DALs), respectively (per Advisory Circular AC 20–115C,3 and Advisory Circular AC 20–152).4

(d) New requirements, in the special conditions section, address the hazards of overcharging and over-discharging that are unique to lithium batteries, which should be applied to all rechargeable lithium battery and battery installations on the Model PC–12, PC–12/45, and PC–12/47 airplanes in lieu of the requirements of § 23.1535(a)(b)(c)(d)(e), amendment 23–49.

These special conditions are not intended to replace § 23.1535(a)(b)(c)(d)(e) at amendment 23–49 in the certification basis of Model PC–12, PC–12/45, and PC–12/47 airplanes. These special conditions apply only to rechargeable lithium batteries and lithium battery systems and their installations. The requirements of § 25.1535 at amendment 23–49 remains in effect for batteries and battery installations on Model PC–12, PC–12/45, and PC–12/47 airplanes that do not use rechargeable lithium batteries.

Discussion of Comments

Notice of proposed special conditions No. 23–16–02–SC for the Pilatus Aircraft, Ltd., Model PC–12, PC–12/45, and PC–12/47 Airplanes, Lithium Batteries was published in the Federal Register on August 24, 2016 (81 FR 57810). No comments were received, and the special conditions are adopted as proposed.

Applicability

The special conditions are applicable to the Model PC–12, PC–12/45, and PC–12/47 airplanes. Should Pilatus Aviation apply at a later date for a supplemental type certificate to modify any other model included on Type Certificate No. A78EU5 to incorporate the same novel or unusual design feature, the special conditions would apply to that model as well.

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the Federal Register; however, as the certification date for the Pilatus Aircraft, Ltd., Model PC–12, PC–12/45, and PC–12/47 airplanes is imminent, the FAA finds that good cause exists to make
this rule modifies the Commerce Control List (CCL) entries for two types of items: Military aircraft and related items, and military gas turbine engines and related items. The rule adds clarifying text to the descriptions of the types of military aircraft controlled on the CCL. The lists of items that are subject only to the anti-terrorism reasons for control are clarified and expanded. This rule, which is being published simultaneously with a rule by the Department of State, is based on a review of Categories VIII and XIX of the United States Munitions List (USML). This rule and the related Department of State rule are part of a plan to review rules published as part of the Export Control Reform Initiative (ECRI). This rule also furthers the retrospective regulatory review directed by the President in Executive Order 13563.

DEPARTMENT OF COMMERCE
Bureau of Industry and Security
15 CFR Parts 770 and 774
 [Docket No. 151030999–6552–02]
RIN 0969–AG76

Clarifications and Revisions to Military Aircraft, Gas Turbine Engines and Related Items License Requirements
AGENCY: Bureau of Industry and Security, Department of Commerce.
ACTION: Final rule.
SUMMARY: This rule modifies the Commerce Control List (CCL) entries for two types of items: Military aircraft and related items, and military gas turbine engines and related items. The rule adds clarifying text to the descriptions of the types of military aircraft controlled on the CCL. The lists of items that are subject only to the anti-terrorism reasons for control are clarified and expanded. This rule, which is being published simultaneously with a rule by the Department of State, is based on a review of Categories VIII and XIX of the United States Munitions List (USML). This rule and the related Department of State rule are part of a plan to review rules published as part of the Export Control Reform Initiative (ECRI). This rule also furthers the retrospective regulatory review directed by the President in Executive Order 13563.