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DOCKETS  
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March 17, 2000

U.S. Department of Transportation Dockets  
Docket No. FAA-1999-6411 - 34  
400 Seventh Street, SW.,  
Room Plaza 401,  
Washington, DC 20590

**Subject:** Transport Airplane Fuel Tank System Design Review, Flammability Reduction, and Maintenance and Inspection Requirements - Notice of Proposed Rulemaking  
(~~NPRM~~)

**Reference:** (A) 64 Fed. Reg. 58644 (1999) (to be codified at 14 C.F.R. Parts 21, 25, 91, 121, 125, and 129) (proposed October 29, 1999)  
(B) 65 Fed. Reg. 8006 (2000) (to be codified at 14 C.F.R. Parts 21, 25, 91, 121, 125, and 129) (proposed February 16, 2000)

In the reference (A), the FAA published a **NPRM** which, if adopted:

would require design approval holders of certain turbine-powered transport category airplanes to submit substantiation to the FAA that the design of the **fuel** tank system of previously certificated airplanes precludes the existence of ignition sources within the airplane **fuel** tanks. It would also require the affected design approval holders to develop specific **fuel** tank system maintenance and inspection instructions for any items in the fuel tank system that are determined to require repetitive inspections or maintenance, to assure the safety of the **fuel** tank system. In addition, the proposed rule would require certain operators of those airplanes to incorporate FAA-approved **fuel** tank system maintenance and inspection instructions into their current maintenance or inspection program. Three amendments to the airworthiness standards for transport category airplanes are also proposed.

In the reference (B), the FAA reopened the comment period for the reference (A) **NPRM**, and extended the deadline for comments to March 27, 2000.

My background includes a Bachelor's degree in Mechanical Engineering, and over 11 years experience working for an FAR 121 certificated air carrier in the areas of Engineering, Quality Assurance, and Regulatory Compliance. I have reviewed the references (A) and (B), and have the following comments to offer.

Agreement with Intent: As an employee and stockholder of an FAR 121 certificated air carrier, and a frequent passenger in commercial air transportation, I support rational rulemaking designed to improve the outstanding safety record of U.S. air carriers. Consequently, I agree with the stated intent of the **NPRM**, which is to enhance fuel system safety. My comments are intended to assist in this regard by identifying potential problems in this **NPRM** for correction so that the proposed rule will be implemented in a manner which will maximize the safety benefits it provides while minimizing the impact on the affected aviation community.

Insufficient Compliance Time for Design Approval Holders to Perform the Required Design

~~The~~ proposed rule would require certain design approval holders (i.e., the holders of an FAA type certificate (**TC**), or holders of a supplemental type certificate (**STC**) affecting aircraft fuel tank systems) to accomplish the following steps, within twelve months after adoption of the rule:

1. undertake an extensive safety review of all existing fuel system configurations by applying newly designed safety criteria;
2. develop a detailed maintenance and inspection program to enhance fuel tank system safety, and;
3. submit a report detailing the results of the above requirements to the FAA for approval.

The FAA has presented no logical basis for its conclusion that all of these activities can be accomplished on all **TCs** and certain **STCs** within a 12-month window. The number of fuel system configurations that will require review is staggering. For example, Boeing has produced over 2000 **B-737** aircraft during its long production run. These aircraft have been produced in eight different primary series [**B-737-100** through **-800** series, broadly defined as “classic” (out-of-production series aircraft) and “new-generation” (currently produced aircraft)]. The aircraft were produced over a 30-year time span, during which time the design for each series shared some level of commonality with its predecessor, but also included many upgrades or improvements. Other families of aircraft [e.g., **B-747-100/-200/-300/-400** series, and; **DC-9-10** through **-50** series, **MD-80/MD-90**, **B-717** variants] exhibit the same difficulties: long production runs; multiple variants of the same model (with associated history of design changes); differences between in-production and out-of-production series aircraft, etc. It is neither feasible nor reasonable to believe the activities required by the proposed Special Federal Aviation Regulation (**SFAR**) detailed in the **NPRM** can be accomplished on all aircraft within twelve months.

Furthermore, Boeing is currently experiencing a labor action by their engineering personnel. This fact is currently delaying much of Boeing’s engineering activity, and will significantly impair Boeing’s ability to comply with the proposed rule.

The activities required by this **NPRM** will generate a substantial volume of data requiring FAA approval. FAA is ill-prepared to review and approve such a tremendous amount of information in a compressed time **frame**.

***Recommendation:*** Due to the insufficient compliance period for design approval holders to perform the required actions, coupled with the difficulty that FAA would experience in attempting to review and approve a large volume of safety reviews and maintenance and inspection programs, revision to the compliance period appears warranted. A phased-in approach will permit design approval holders the necessary time to conduct the required activities, while distributing the review and approval burden on the FAA over a longer period of time.

Accordingly, I recommend that the compliance period listed in proposed **SFAR XX**, Section 2, be revised as follows.

- Within 6 months **after** the effective date of the proposed rule, require all design holders to seek FAA approval of a schedule for accomplishing the required tasks (i.e., perform safety reviews, develop maintenance and inspection programs, and submit a report summarizing the results of these activities to FAA for approval).
- Within the FAA-approved schedule established above, require the design holders to perform safety reviews, develop maintenance and inspection programs, and submit a report summarizing the results of these activities to FAA for approval (as currently required in proposed **SFAR XX**, Section 2).

Insufficient Compliance Time for Aircraft Operators to Revise Their FAA-Annroved Maintenance and Inspection Programs: The proposed rule would require certain aircraft operators revise their FAA-approved maintenance program to include an FAA-approved fuel tank maintenance and inspection program within **18** months **after** the effective date of the proposed rule. Presumably, the intent of this requirement is to give operators 6 months to revise their program after the design approval holder has completed its requirements (described above). In practice, however, the design approval holder need only submit the results of its safety review and maintenance/inspection program to FAA within **12** months, with FAA approval to follow. Thus, the time FAA takes to review and approve this data directly reduces the time that aircraft operators have to revise their FAA-approved maintenance programs.

Even if the aircraft operators were provided 6 months for compliance, this time period is much too short. The requirement to include a detailed maintenance and inspection program for fuel tank systems into an existing maintenance program will require extensive correlation between the operator's existing maintenance program and the new requirements. Approximately one year will be necessary to incorporate the fuel tank systems maintenance and inspection program into an operator's existing maintenance program. This time is consistent with the time FAA has permitted for other maintenance program revisions [e.g., in the Airworthiness Directives (ADS) that required implementation of a Corrosion Prevention and Control Program (**CPCP**)].

It should be noted that the design approval holder is the one entity best positioned to develop the required maintenance and inspection program. Aircraft operators, lacking the fuel tank system design data that is possessed by the design approval holder, will be unable to develop an appropriate program. Therefore, the compliance period for operators to revise their FAA-approved maintenance program should begin following FAA approval of a maintenance and inspection program prepared by the design approval holder.

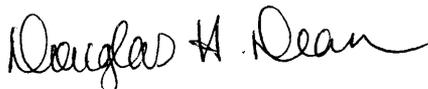
*Recommendation:* Due to the insufficient compliance period for aircraft operators to incorporate the fuel tanks system maintenance inspection program into their existing FAA-approved maintenance program, revision to the compliance period appears warranted. The aircraft operators should be provided one year after an FAA-approved maintenance and inspection program is released to revise their FAA-approved maintenance programs.

Accordingly, I recommend that the compliance period listed in proposed §§ 91.410, 121.370, 125.248, and 129.14, be revised as follows.

- Within 12 months following FAA approval of a fuel tank system maintenance and inspection program developed by the design approval holder, require all affected aircraft operators to revise their FAA-approved maintenance program to include an FAA-approved fuel tank system maintenance and inspection program.

Thank you in advance for your thoughtful consideration of these comments. As requested in the reference (B), two copies of this letter are enclosed. Additionally, as permitted in the reference (B), please find enclosed a copy of a pre-addressed, stamped, postcard containing the statement, "Comments to Docket No. FAA-1999-6411." Please date stamp the postcard and return it, to acknowledge receipt of these comments.

Sincerely,



Douglas H. Dean

Notice of Proposed Rulemaking (NPRM)

Transport Airplane Fuel Tank System Design Review, Flammability Reduction, and  
Maintenance and Inspection Requirements

64 Fed. Reg. 58644 (1999) (to be codified at 14 C.F.R. Parts 21, 25, 91, 121, 125,  
and 129) (proposed October 29, 1999)

Notice of Proposed Rulemaking (NPRM):  
Reopening of the Comment Period

Transport Airplane Fuel Tank System Design Review, Flammability Reduction, and  
Maintenance and Inspection Requirements

65 Fed. Reg. 8006 (2000) (to be codified at 14 C.F.R. Parts 21, 25, 91, 121, 125,  
and 129) (proposed February 16, 2000)

[reopens the comment period for the NPRM originally proposed in 64 Fed. Reg.  
58644 (1999) (to be codified at 14 C.F.R. Parts 21, 25, 91, 121, 125, and 129)  
(proposed October 29, 1999), extending the deadline for comments to that proposal  
to March 27, 2000]