

# DORNIER LUFTFAHRT

A Fairchild Aerospace Company

DEPT. OF TRANSPORTATION

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US Department of Transportation  
Docket No. FAA-1999-6411, -13  
400 Seventh Street SW.,  
Room Plaza 401

Washington DC 20590 - USA

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## Manufacturer Position to NPRM 99-18

Please find enclosed the manufacturers position to NPRM 99-18, dated October 29<sup>th</sup>, 1999.

Please let us know if you need any additional information or if we could be of any further assistance.

Kind Regards

DORNIER LUFTFAHRT GmbH  
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To the: US Department of Transportation, Dockets  
Docket No. FAA-I 999-6411,  
400 Seventh Street SW.,  
Room Plaza 401,  
Washington DC 20590

Fairchild Dornier is pleased to provide the following comments in response to the FAA's publication in the October 29<sup>th</sup>, 1999 Federal Register of the Proposed rule :

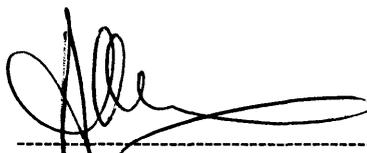
*Transport Airplane Fuel tank System Design Review , Flammability Reduction , and Maintenance and Inspection Requirements*

## **NPRM No.99-18**



Franz Maucher

Head of Certification 728 Jet



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Airworthiness Office Specialist

Date: 17.01.2000

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# MANUFACTURERS POSITION TO NPRM 99-18

## **1. Part 25 Proposed changes to FAR 25.981**

Dornier Luftfahrt agrees with the principles behind the NPRM however it is not understood the need of an additional Part 25.981(a)(3) and new (b) and (c) subparagraphs whilst, however, it is considered of far greater immediate relevance the introduction of the proposed Part 21 SFAR No.XX as well the need of a new AC to 25.981 in place of the existing AC25.981-1A (mentioned within the NPRM).

### **1.1. Part 25.981(a)(3)**

Dornier Luftfahrt sees as more appropriate that by proper application of FAR25.1309 requirements and related AC 25.1309-1A to the Fuel Tank System -and a more comprehensive AC 25.981-1B the Applicant would be driven into considering the specific cases that were overlooked in the past. AC25.1309-1A also clearly states already that CMRs (Certification Maintenance Requirements) may be needed to help show compliance with Sec. 25.1309(b) and (d)(2) for significant latent failures .

The new Advisory should also collect and embody some of the recommendations of other related advisories like AC 25-8 and AC 20-53A which would be better located within an AC to FAR 25.981 . This would avoid unnecessary regulatory cluttering and possible confusion or oversight.

### **1.2. Part 25.981(b)**

This proposal also includes a new subparagraph **25.981(b)** to add critical inspections to the Airworthiness Limitations Document.

In the opinion of Dornier Luftfahrt if the appropriate maintenance requirements are developed through MSG-3, there is no need to include them in the Airworthiness Limitations Document. If they are considered mandatory, then they should be mandated by AD with an appropriate Service Bulletin that would include the mandatory repetitive inspections.

The requirement of adding placards ,decals or other visible means to be located in areas where erroneous design practices would lead to violations of the integrity of the original fuel tank design , appears like a non realistic approach since decals could be in positions difficult to see in the installed condition and may be misplaced , unreadable.

Paragraph 2 (a) of the proposed SFAR No.XX would anyway impose that the STC design meets the Safety requirements .

### **1.3. Part 25.981(c)**

The newly introduced Subpara 25.981(c) is introducing terms like " minimize" and "mitigate" of subjective nature , without a definition of the expected target . **The forthcoming AC 25.981-1B should define these targets** and a criterion similar to the ruled out 7% of the Operational Time recommended by the ARAC FTHWG may then have to be introduced .

Minimization criteria could be introduced like locating the Fuel pumps fully submerged on the bottom of the Fuel Tanks holding the aircraft standard reserves, a Fuel Quantity signal conditioning Hardware fully compliant to the requirement of MIL-STD-882C and additional specific but clearly identified guidelines within the AC.

The concept of Risk Minimization , like in the case of the Rotor Burst AC20-128A , is also introduced and is exhaustively and clearly addressed by an AC whilst the Regulatory paragraph 25.903(d)(1) generically states " . . Design precautions must be taken to minimize the hazards" .

## **2. PART 21 SFAR No.XX**

Dornier Luftfahrt concurs with the NPRM that a fuel tank system review of the existing designs , fuel system related STCs and field approvals should be performed but again this should be done revisiting the existing safety analysis to Part **25.1309** and using the forthcoming **AC 25.981-1B** for criteria and lists of design causes and prevention criteria .

**Dornier Luftfahrt Comments  
To NPRM**

**Notice  
No.:**

**99-18**

**Page:**

**2**

**Docket  
No.**

**FAA-1999**

Airworthiness Directives should then resolve any unsafe condition. Therefore the Para 2 of SFAR No.XX should more appropriately refer only to FAR 25.901 or directly 25.1309 in the perspective of our above comments .

### **3. Conclusions**

The proposal is seen by the Administrator as an **interim** measure to preclude , in new designs , the use of design methods that result in a relatively high likelihood of development of flammable fuel vapors.

It appears unnecessary to generate new rules without a firm base of understanding since FAA has not completed "the necessary research and identified an **appropriate** definitive standard to address this issue " as stated within the text of the NPRM ,admitting the non-maturity of the Part 25 Change proposal .

In our opinion the tools already exist within the Part 25 requirements except they have never been used since there was no acquired understanding of the safety risks until the unfortunate event of **TWA 800** flight .

The peculiarity in addressing the Fuel Tank System with respect to the Safety Assessment is unclear and seems unbalanced with respect to other equally critical systems .

It is finally recommended that the consideration of such a major step be accomplished in an appropriate international forum, with harmonized results, rather than by unilateral action of one authority.

The criteria generated by the ARAC FTHWG provided a reference quantitative criterion and it appears that the NPRM should have used the ARAC FTHWG Criterion e.g. differentiating its application on the Basis of the Operations (in the case of very short haul operations the 7% criterion may not be practical to achieve).

**Dornier Luftfahrt Comments  
To NPRM**

**Notice  
No.:** 99-18

**Page:** 3

**Docket  
No.** FAA-1999

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