

August 14, 2020

Federal Aviation Administration
800 Independence Avenue SW
C/O Marc Tonnacliff
Airport Safety and Standards
AAS-300 Room 618
Washington DC 20591

RE: NBAA Comments on FAA Draft Advisory Circular AC 150/5230-4C - Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports

The National Business Aviation Association (NBAA) represents the interests of 12,000 members who own, operate, and maintain business aircraft, including a number of airports, companies that provide aircraft fueling services and organizations that are otherwise involved in the storage, handling and dispensing of aviation fuel. NBAA holds safety as a core value and we continue to work with the FAA and industry to address the hazard of diesel exhaust fluid (DEF) contamination of aviation fuel. On behalf of NBAA and the business aviation community, we submit these comments in response to the FAA's draft Advisory Circular 150/5230-4C.

NBAA's comments on this issue look at this advisory circular (AC) through the lens of the multiple DEF contamination of aircraft fuel events that have taken place in the last few years. Our comments are offered to reduce the likelihood of these events, and thus the risk associated with this hazard. We welcome efforts by the FAA to better educate and make aware the global aviation community on these issues.

NBAA supports the additional clarity on Applicability of this advisory circular.

The additions to paragraph 3, Applicability, are welcomed by NBAA in order to address the potential for fuel contamination events at Part 139 certificated airports, projects funded under the Airport Improvement Program, and projects funded by the Passenger Facility Charge program. NBAA also supports the continued inclusion of language that highlights the FAA's recommendation that non-certificated airports use the guidance in this AC to develop such standards for the continued enhancement of aviation safety.

Additions to the Advisory Circular Focused on DEF Contamination of Aviation Fuel

NBAA welcomes the additions to this advisory circular focused on the hazard of DEF contamination of aviation fuel and encourages the FAA to consider additional elements related to DEF contamination in order to more fully address this hazard and the severity of its risk.

NBAA recommends the following enhancements to section 3.1.2.b.

- Remove “, and” from 3.1.2.b.i
- Add a new 3.1.2.b.ii with the following content “Securing and limiting inventory of DEF, and”
- Moving the content in the existing 3.1.2.b.ii to 3.1.2.b.iii

NBAA recommends the following enhancement to section 3.1.9.a.i

- Add a new 3.1.9.a.i.4 with the following content “Fuel additives to be included as part of the fuel upload.” This would allow an operator to explicitly specify whether they would like or would not like approved additives such as Fuel System Icing Inhibitor to be added to the fuel upon upload.

NBAA recommends the following enhancement to section 3.1.9.b.

- Add a new 3.1.9.b.iii.3 with the following content “Implications of DEF-contaminated fuel.”
- Add a new 3.1.9.b.iii.4 with the following content “Procedures for the safe resupply of fueling equipment reservoirs with FSII.”
- Add a new 3.1.9.b.ii.5 with the following content “Procedures for the safe resupply of DEF in fueling, ground support, and other equipment requiring its use.”

Definitions and Acronyms

NBAA supports the addition of the acronyms Airport Improvement Program (AIP), Diesel Exhaust Fluid (DEF), Fuel System Icing Inhibitor (FSII), Hands-on Training (HOT) and Passenger Facility Charge (PFC) listed in Appendix A.2. Given the significance of the DEF contamination events, NBAA would welcome the addition of the terms Diesel Exhaust Fluid and Fuel System Icing Inhibitor in Appendix A.1 Definitions to provide additional context to these terms for the readers of this advisory circular.

Diesel Exhaust Fluid

A urea-based chemical reductant that is appropriately used in selective catalytic reduction systems on diesel-engine vehicles and equipment to meet stringent emissions standards for nitrogen oxides and particulate matter. Diesel Exhaust Fluid is not approved for use in jet fuel as it reacts with certain jet fuel chemical components to form crystalline deposits in the fuel system. These deposits will flow through the aircraft fuel system and may accumulate on filters, fuel metering components, other fuel system components, or engine fuel nozzles. Aircraft having received DEF-contaminated fuel have experienced clogged fuel filters and fuel nozzle deposits that led to service difficulties, unplanned diversions, and in one case shutdowns of all engines on the aircraft while still in flight.

Fuel System Icing Inhibitor

An approved aviation fuel additive designed to prevent the formation of ice crystals in fuel system components.

Additional Resources

NBAA suggests adding the following resources to the existing list in Appendix B.

FAA Safety Alert for Operators 18015, Jet Fuel Contaminated with Diesel Exhaust Fluid (DEF)
SAFO 18015 alerts and advises aircraft operators, Fixed Base Operators (FBO), Federal Aviation Administration (FAA)-certificated repair stations, Flight Standard District Offices (FSDO), and foreign civil aviation authorities that certain aircraft refueled with jet fuel contaminated with DEF or used in refueling equipment that was exposed to DEF. This SAFO is available online at https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2018/SAFO18015.pdf.

NTSB Safety Alert, Fuel Providers: Prevent DEF Jet Fuel Contamination

This NTSB Safety Alert is available online at

https://www.nts.gov/safety/safety-alerts/Documents/SA_079.pdf

Aircraft Diesel Exhaust Fluid Contamination Working Group Collaborative Industry Report on the Hazard of Diesel Exhaust Fluid Contamination of Aircraft Fuel

This industry report is available online at

<https://nbaa.org/wp-content/uploads/aircraft-operations/safety/DEF/20190611-Aircraft-DEF-Contamination-Working-Group-Report.pdf>

National Air Transportation Association General Aviation Misfueling Prevention Program

A misfueling prevention awareness program for pilots, line service professionals, general managers, and customer service representatives.

<https://www.nata.aero/education-and-training/misfueling-prevention-program>

We also noted that getting to the Addendum of Authorized Fuel Safety Training Courses took a number of steps online, instead of a direct link. NBAA recommends including a more direct link to the current version of this list in the FAA's web application for Advisory Circulars.

Alternatively, the FAA could create a web page on its web site specific to the issue of Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports that includes a direct link to the current list of courses, among other relevant information and resources.

A Typographic Error

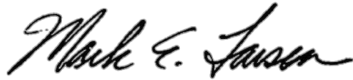
NBAA also notes a typographic error in line 140. The word "handing" is currently listed on that line, and we believe that the word "handling" is the intended word in that sentence.

Conclusion

NBAA believes that training providers in this space are in a position to include FSII handling and storage as well as DEF contamination prevention in their course offerings, if they have not already done so. The updates to this advisory circular help in taking another step to ensure compliance with best practices to minimize the likelihood of aviation fuel contamination by DEF.

Education of flight and ground crews and keeping this issue at the forefront is crucial to preventing further DEF fuel contamination events. The industry needs to remain diligent in its efforts to eliminate any fuel contamination opportunities. NBAA appreciates the FAA's consideration of these comments. We look forward to continuing to work with the FAA and industry towards our shared goal of enhancing safety.

Sincerely,

A handwritten signature in black ink that reads "Mark E. Larsen". The signature is written in a cursive, flowing style.

Mark E. Larsen, CAM
Senior Manager, Safety & Flight Operations
mlarsen@nbaa.org