



Federal Aviation Administration

National Part 139 CertAlert

AdvisoryCautionary**Non-Directive**Advisory**Cautionary**Non-Directive**Advisory**Cautionary**Non-Directive**

Date: 10/27/2016 **No. 16-09**

To: All Title 14 CFR Part 139 Airport Operators, All Aircraft Rescue and Fire Fighting (ARFF) Departments and FAA Airport Certification Safety Inspectors (ACSIIs)

Subject: Particles in Aqueous Film Forming Foam (AFFF) Tanks on Aircraft Rescue Fire Fighting (ARFF) Vehicles and AFFF Storage Tanks

Point of Contact: Keith Bagot, ANG-E261, 609-485-6383, or Marc Tonnacliff, AAS-300, 202-267-8732
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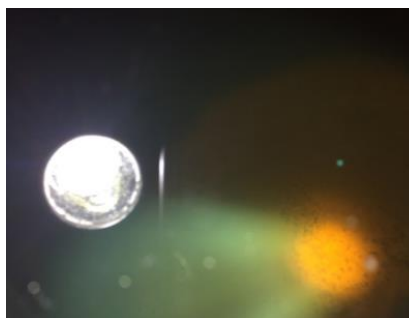
- 1. Purpose.** This CertAlert is to make airport operators and ARFF departments aware that particulates have been found in some AFFF tanks on ARFF vehicles. The FAA is asking airports to check their vehicles, foam trailers, and bulk storage tanks to help us determine if this is a widespread issue.
- 2. Background.** Some ARFF Departments are finding crystalized particulates in the AFFF tank on their ARFF vehicles. This issue was initially identified several years ago at Oklahoma City Airport (OKC,) but it was found in their reserve AFFF storage tank. The issue has resurfaced again and has been found at at least four different ARFF stations around the country. To date, these crystals have not been found to affect the firefighting capabilities of the AFFF. The concern is that the crystallization might possibly restrict the AFFF proportioning system and alter the AFFF production or nozzle discharge.
- 3. Recommendations.** The FAA is asking Certificated Part 139 airports to proactively inspect the AFFF tanks on all ARFF vehicles, foam trailers, and bulk AFFF storage tanks as soon as possible. Any potential particles found will be grey/white in color and have a crystallization structure. (See pictures below) The crystals are hard to the touch. If there is a high concentration of particulates, they will be settled in the bottom of the tank. With a strong flash light you may be able to see them on the bottom of the tank. Particulates floating on the top of the AFFF concentrate may simply be dried foam falling off the walls and lid. While dried foam may settle to the bottom of the foam tank, our primary concern is with large volumes of crystal formations that have settled at the bottom of the AFFF tank.

4. Actions.

- a. Inspect all AFFF tanks on ARFF vehicles, AFFF tank trailers, and AFFF bulk storage tanks. **For ARFF vehicles and AFFF tank trailers**, conduct this inspection after the vehicle has been sitting still. Vehicle movement can cause suds on the surface from agitation.
 - i. Remove the top fill AFFF tank cover.
 - ii. Remove the mesh screen.
 - iii. Use caution to avoid the sharp edges of the AFFF can cutter (if equipped).
 - iv. Inspect the area under the cover.
 - v. Use a bright light to look into the tank.
- b. If no particles are visible from the top of the tank, place a clean 5 gallon bucket under the AFFF tank fill / drain. Open the drain valve slowly and drain 2 - 3 gallons of the solution into the bucket. If no particles are visible, pour the AFFF back into the AFFF tank.
- c. If particles are found, contact the AFFF manufacturer for guidance.
 - i. Be prepared to provide the following information: make, model, manufacturer and in-service date of ARFF vehicle. AFFF tanks and AFFF trailers should be identified based on department designation, (i.e., Foam Trailer 1 or Station 2 AFFF tank).
 - ii. Provide as much history as possible about the AFFF used in the vehicle, tank, or trailer and AFFF manufacturer(s), product name, year product was purchased, and batch number.
 - iii. If applicable, provide additional manufacturer information if you have mixed multiple AFFF brands in your tanks.



Actual pieces of crystallized particulates




Particulates may be visible using a flashlight



Drained AFFF tank

- d. Once you have completed your vehicle and tank inspection(s), please complete the FAA's survey (even if no crystals were found) at www.faa.gov/airports/airport_safety/aircraft_rescue_fire_fighting/aff_survey/
- e. Submitted surveys go directly to Keith Bagot at the FAA William J. Hughes Technical Center. The FAA will use the information to help determine how widespread the issue is. We will also share the data with foam manufacturers to assist them in developing any necessary remedies.
- f. **If you find particulates**, please send us a small sample of both the liquid AFFF concentrate and the particles. Place each sample in an air sealed jar and label as follows:
 - i. Airport Name
 - ii. Person Sending Sample
 - iii. Vehicle Sample Was Taken From
 - iv. Foam Manufacturer, %, Batch, and Lot Number
- g. Wrap each jar in bubble wrap and ship to the following address:

Keith Bagot
FAA William J. Hughes Technical Center
BLDG 296, ANG-E261
Atlantic City International Airport
Atlantic City NJ 08405



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