



Kreckie's FleetChek Advisor *June 2016 / Volume 1 Edition 2*

FleetChek's Fueler Checklist System

Provides a secure, paperless solution that provides for accountability, consistency and automatic generation of tamperproof records and reports to satisfy all FAA requirements for quarterly and random fueler inspections.

Record Temperatures Affect Airport Safety - Aviation Fuel Releases

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Weather events at airports create challenges to airport operations, construction activity and aircraft re-servicing. Airport and airline personnel plan for the normal weather extremes in their regions. From time to time, extreme weather events increase risks to aircraft movement, fueling operations, and employee health and safety. Recently, extreme temperatures in major cities, including Phoenix, Las Vegas, Tucson, as well as parts of Kansas and Oklahoma, have prompted the National Weather Service to issue widespread excessive heat warnings. Temperatures reaching 115° to 120°F are considered rare, dangerous and even deadly.



The health risks associated with extreme temperatures are very real. According to the CDC, an estimated 500 people die of heat related causes each year in the US. Airports, by design, tend to retain heat for a long time. Concrete, bituminous, steel and aluminum retain heat

much longer than areas with shade, soil and vegetation. Pavement temperatures on an airport ramp in the southwestern United States can reach as high as 160°F.

Aviation fuels, when stored and handled properly, are very safe. These same fuels present the greatest risk to life and property when uncontained and exposed to potential ignition sources. Flash point is defined as "the temperature at which an organic compound (fuel) gives off sufficient vapor to ignite in air". Jet A turbine fuels do not produce flammable vapors in ignitable amounts unless the fuel temperature is above 100°F (38°C). A study published by the University of Arizona indicates that pavement surface temperatures in the southwestern United States in July and August remain about 110°F for 40% of the time, temperatures above 130°F roughly for 25% of the time, and temperatures above 140°F for 7 to 22% of the time. These extreme temperatures must be factored into the assessment/risk analysis for aviation fuel releases.

During fuel spills, fuel released on the pavement is heated. Higher temperatures increase the rate at which flammable vapors are released. In simple terms, that means that there are more flammable vapors searching for an ignition source. Responding to a fuel release under an aircraft or fuel service vehicle must always be handled with great care and caution. During periods of high surface temperatures, additional precautionary measures should be considered. As always, the actions taken must be scalable to the incident. Circumstances to consider should include, but not be limited to:

- Size of Spill
- Type of Fuel
- Temperature
- Grade
- Aircraft occupancy
- Location
- Ignition Sources
- Is Fuel Still Flowing?
- Wind/Precipitation Are Drains Involved?

Actions (scalable) performed per the department's SOP should include (as applicable):

- Establish safety area, secure the area of the spill as well as the area down grade and down wind
- Consider request for HazMat team
- Full PPE in vapor area
- Make use of combustible gas meters

- Eliminate potential ignition sources
- Disconnect electrical from remote location
- Monitor temperatures of aircraft undercarriage and pavement
- Emergency shutoff
- Cover spill
- Secure drains
- Deplane or evacuate aircraft
- Apply foam blanket
- Environmental notifications/cleanup/disposal

Detailed inspections of aircraft fueling equipment and fuel farms are an important step in preventing fuel releases and potentially catastrophic aircraft fires. Fire safety training for fueling personnel and random inspections of fueling operations assist airport ARFF and operations personnel in maintaining an optimum level of safety and proficiency of fuel handling.

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