HOUSE OF REPRESENTATIVES STAFF FINAL BILL ANALYSIS

BILL #: CS/HB 77 Diesel Exhaust Fluid
SPONSOR(S): Commerce Committee, Overdorf and others
TIED BILLS: **IDEN./SIM. BILLS:** CS/CS/SB 1082

FINAL HOUSE FLOOR ACTION: 114 **Y's** 0 **N's** **GOVERNOR'S ACTION:** Pending

SUMMARY ANALYSIS

CS/HB 77 passed the House on April 21, 2021. The bill was amended in the Senate on April 26, 2021, and returned to the House. The House concurred in the Senate amendments and subsequently passed the bill as amended on April 29, 2021.

The United States Environmental Protection Agency requires diesel exhaust fluid (DEF) to be used in newer diesel engines, including diesel-powered vehicles used for aircraft and airport support. DEF is an exhaust additive that reduces diesel emissions by neutralizing nitrogen oxide into harmless nitrogen gas and water.

In recent years, aircraft have experienced engine shutdowns and other engine operability issues resulting from the contamination of jet fuel due to the inadvertent filling of an aircraft fuel truck's anti-icing injection system reservoirs with DEF instead of a fuel system icing inhibitor. The Federal Aviation Administration has made preliminary safety recommendations regarding the use of DEF at airports, including additional training and the adoption of best management practices.

The bill provides that certain public airports must require a DEF safety mitigation and exclusion plan for each fixed base operator that performs onsite treatment of aviation fuel. The bill provides minimum requirements for each plan. The plans must be available for inspection by the Department of Transportation (DOT). The bill also requires DOT to convene a work group to develop uniform industry standards regarding DEF and provides DOT with rulemaking authority to adopt those standards.

The bill may have an indeterminate but likely insignificant, negative fiscal impact on state government. Fixed base operators operating at public airports may incur expenditures associated with developing DEF safety mitigation and exclusion plans. *See* Fiscal Analysis for details.

Subject to the Governor's veto powers, the effective date of this bill is October 1, 2021.

I. SUBSTANTIVE INFORMATION

A. EFFECT OF CHANGES:

Current Situation

Diesel Exhaust Fluid

Under the Clean Air Act of 1990, the United States Environmental Protection Agency (EPA), in order to curb air pollution, has mandated stronger emission control standards for vehicle engines. Nitrogen oxide (NOx) emissions can be a major pollutant from diesel engines and the EPA has targeted them for significant reductions. In 2007, the EPA mandated that all new on-road heavy duty vehicles manufactured after 2010 meet certain requirements, with light duty vehicles to meet these requirements in 2014. In order to meet these standards, technologies such as selective catalytic reduction have been developed.[1]

In diesel vehicles, selective catalytic reduction reduces NOx emissions by injecting diesel exhaust fluid (DEF) into ammonia, which in the presence of the catalyst, reacts with the exhaust NOx to neutralize it into harmless nitrogen gas and water.[2]

DEF is a nontoxic, nonhazardous, and colorless aqueous solution of automotive grade Urea in deionized water.[3]

Airport Use of Diesel Exhaust Fluid

At public airports, the airport and its tenants use DEF in various diesel-powered vehicles including aircraft refueling equipment, diesel aircraft fire-fighting equipment, life-saving equipment, and emergency generators.[4]

In recent years, aircraft have experienced engine shutdowns and other engine operability issues due to the contamination of jet fuel as a result of the inadvertent filling of aircraft fuel trucks anti-icing injection system with DEF instead of fuel system icing inhibitor.[5]

Due to fuel system designs, some aircraft require fuel system icing inhibitor to prevent engine operability issues in cold weather. Due to this requirement, for many years, airport refueling trucks have been equipped with fuel system icing inhibitor injection systems, which require a fuel system icing inhibitor fluid reservoir mounted on the truck to supply the injection system during refueling. Newer refueling trucks contain a DEF reservoir in addition to the fuel system icing inhibitor reservoir. Since the EPA's mandate for selective catalytic reduction on non-road diesel trucks began in 2014, airport refueling trucks with two reservoirs have begun appearing at airports.[6]

Between November 2017 and May 2019, there were three instances, two in Florida, in which multiple aircraft had jet fuel contaminated with DEF or were refueled using equipment exposed to DEF. Because of these instances, numerous aircraft had to perform emergency landings. The Federal Aviation Administration (FAA) conducted a hazard analysis and issued preliminary recommendations to address the problem, including additional training for ground support crews, adoption of best

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[1] Aircraft Diesel Exhaust Fluid Contamination Working Group, *A Collaborative Industry Report on the Hazard of Diesel Exhaust Fluid Contamination of Aircraft Fuel*, June 11, 2019, pp. 3-4, https://download.aopa.org/advocacy/2019/2019_06_11_Aircraft_DEF_Contamination_Working_Group_Report_FINAL.pdf#:~:text=AIRCRAFT%20DIESEL%20EXHAUST%20FLUID%20CONTAMINATION%20WORKING%20GROUP%20REPORT,events%20that%20have%20occurred%20to%20date;%20to%20immediately (last visited Feb. 3, 2021).

[2] *Id.*

[3] *Id.*

[4] Email from Lisa Waters, President/CEO Florida Airports Council, Diesel Exhaust Fluid, Nov. 4, 2019.

[5] Federal Aviation Administration, *Safety Assessment for Jet Fuel Contamination with Diesel Exhaust Fluid.* August 30, 2019, p.4, https://www.nata.aero/assets/Site_18/files/GIA/NATA_News/2019-08-30_Safety_Risk_Assessment_Report_DEF-Final.pdf (last visited Feb. 3, 2021).

[6] *Id.*

management practices, and dyeing either DEF or fuel system icing inhibitor so they can be distinguished from each other.[7] One recommendation called for the aviation industry to request that EPA issue permanent relief from emission control/system performance inducements (which require the use of DEF) for any non-road diesel powered vehicles at or on airports.[8]

The National Air Transportation Association (NATA) has adopted an operational best practice to reduce the risk of aircraft misfueling with DEF. Procedures include keeping original manufacturer labels on DEF, labeling DEF tanks, and staff training.[9]

Effect of the Bill

The bill provides that certain public airports[10] must require a DEF safety mitigation and exclusion plan for each fixed-base operator[11] that performs onsite treatment of aviation fuel with a fuel system icing inhibitor. This requirement applies to public airports at which:

- Aviation fuels receive onsite treatment with fuel system icing inhibitors;
- Aviation fuel is delivered by a publicly or privately owned fixed-base operator; and
- Any aircraft fuel delivery vehicle or ground service equipment that uses DEF is operated within 150 feet of any aircraft.

At a minimum, each operator's plan must include:

- A full inventory of each fixed-base operator's DEF on the airport's premises.
- Designation of specific areas where the fixed-base operator's DEF may be stored on the airport's premises. To the extent practicable, such areas may not be located within or on a vehicle operated for the fueling or servicing of aircraft or at any aviation fuel transfer facility or bulk aviation fuel storage facility.
- Designation of specific areas where DEF may be added to vehicles. Such areas may not be located in aircraft operating areas.
- Incorporation of best practices for ensuring the proper labeling and storage of diesel exhaust fluid.
- Training in the proper use and storage of DEF for all employees of the fixed-base operator who may come in contact with such fluid in the ordinary course of their duties.
- Designation of specific areas where the fixed-base operator's fuel system icing inhibitor may be stored on the airport's premises.
- Best practices for ensuring the proper labeling and storage of the fixed-base operator's fuel system icing inhibitor.
- Training in the proper use and storage of fuel system icing inhibitors for all employees of the fixed-base operator who may come in contact with fuel system icing inhibitors in the ordinary course of their duties.
- Physical measures to secure fuel system icing inhibitor fill points on the fixed-base operator's aircraft fuel delivery vehicles. Such measures must prevent the addition of any fluid to the fuel system icing inhibitor fill point by unauthorized personnel.

Each airport, by January 1, 2022, must make the DEF safety mitigation and exclusion plan for each fixed-base operator available for review during inspections by the Department of Transportation (DOT).

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[7] *Id.*
[8] *Id.* at 2
[9] NATA, Operational Best Practices No. 36, DEF Handling and Contamination, https://www.nata.aero/assets/Site_18/files/DEF/OBP%2036%20-%20DEF%20Handling%20and%20Contamination%20Prevention.pdf (last visited May 4, 2021).
[10] Section 330.37(6), F.S., defines the term "public airport" as an airport, publicly or privately owned, which is open for use by the public.
[11] The term "fixed base operator" refers to commercial businesses allowed to operate on airport grounds in order to provide services to the airport. Fixed based operators include, but are not limited to, fueling service, aircraft maintenance services and baggage handling. https://www.presidential-aviation.com/fbo/ (last visited Dec. 21, 2020).

DOT, by November 1, 2021, must convene a work group of public airport representatives to develop uniform industry standards based upon the requirements listed above and the National Air Transportation Association's[12] Operational Best Practices No. 36, DEF Handling and Contamination, to ensure consistency of industry standards.

The bill authorizes DOT to adopt rules to develop a uniform industry standards form for the DEF safety mitigation and exclusion plan based upon the workgroup's recommendations.

The bill has an effective date of October 1, 2021.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

   None.

2. Expenditures:

   There is an indeterminate but likely insignificant fiscal impact to DOT associated with the expense of convening the workgroup. These expenditures can be absorbed within existing resources.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

   None.

2. Expenditures:

   None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

Fixed-base operators at public airports, including fuel providers, will incur expenditures associated with creating the DEF safety mitigation and exclusion plans; however, the economic impact is indeterminate.

The bill may reduce costs associated with aircraft engine damages caused by DEF contamination and emergency response related to engine failures.

D. FISCAL COMMENTS:

None.

[12] The National Air Transportation Association is the leading national trade association representing the business interests of general aviation service companies on legislative and regulatory matters at the federal level, https://www.nata.aero/about-nata (last visited May 12, 2021).