



February 3, 2025

Dockets Operations  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE, West Building, Ground Floor  
Washington, DC 20590

**Re: Docket Number FMCSA-2024-0121**

To Whom It May Concern:

The National Agricultural Aviation Association (NAAA) appreciates the opportunity to comment on the Federal Motor Carrier Safety Administration's (FMCSA) proposed rule enabling states to allow agricultural aviation operations to transport limited quantities of aviation grade jet fuel without a hazardous materials (HM) endorsement.<sup>1</sup> NAAA has actively advocated for multiple years for this rule change to enable needed regulatory relief to ensure drivers are available to the agricultural aviation industry in their mission to protect an international supply of food, fiber and biofuel while maintaining road transportation safety. The comments that follow will underscore the importance of the U.S. aerial application industry and provide justification for the rule change.

### **U.S. Aerial Application Industry Background**

NAAA represents the interests of the 1,560 aerial application industry owner/operators and 2,028 non-operator agricultural pilots throughout the United States licensed as commercial applicators that use aircraft to enhance the production of food, fiber and bioenergy; protect forestry; protect waterways and ranchland from invasive species; and provide services to agencies and homeowner groups for the control of mosquitoes and other health-threatening pests. Within agriculture and other pest control situations aerial application is an important method for applying pesticides, for it permits large areas to be covered rapidly—by far the fastest application method of crop inputs—when it matters most. It takes advantage, more than any other form of application, of the often too-brief periods of acceptable weather for spraying and allows timely treatment of pests while they are in critical developmental stages, often over terrain that is too wet or otherwise inaccessible for terrestrial applications. It also treats above the crop canopy, thereby not disrupting the crop and damaging it. Aerial application has greater productivity, accuracy, speed, and is unobtrusive to the crop compared to ground application.<sup>2</sup> Although the average aerial application company is comprised of but six employees and two aircraft, as an industry these small businesses treat nearly 127 million acres of U.S. cropland each season, which is about 28% of all cropland used for crop production in the U.S.

In addition to the cropland acres, aerial applicators annually apply to 5.1 million acres of forest land, 7.9 million acres of pasture and rangeland, and 4.8 million acres for mosquito control and other public health concerns. While there are alternatives to making aerial applications of pesticides, aerial application has several advantages. In addition to the speed and timeliness advantage aerial application has over other forms of application, there is also a yield difference. Driving a ground sprayer through a standing crop results in a significant yield loss. Research from Purdue University<sup>3</sup> found that yield loss from ground sprayer wheel tracks varied from 1.3% to 4.9% depending on boom width. While this study was conducted in soybeans, similar results could be expected in other crops as well. Data from a Texas A&M University<sup>4</sup> economics study and the 2019 NAAA industry survey were used to calculate that the aerial application industry is directly responsible for the production of 1.69 billion

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<sup>1</sup> <https://www.federalregister.gov/documents/2024/12/04/2024-28097/transportation-of-fuel-for-agricultural-aircraft-operations>

<sup>2</sup> Kováčik, L., and A. Novák, 2020. "Comparison of Aerial Application vs. Ground Application." *Transportation Research Procedia* 44 (2020) 264–270.

<sup>3</sup> Hanna, S., S. Conley, J. Santini, and G. Shaner. 2007. "Managing Fungicide Applications in Soybean." Purdue University Extension Soybean Production Systems SPS-103-W. <https://www.extension.purdue.edu/extmedia/sps/sps-103-w.pdf>.

<sup>4</sup> Dharmasena, S. 2020. "How Much is the Aerial Application Industry Worth in the United States?" Research presented at the 2020 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/2020aatresearchpapers>.

bushels of corn, 199 million bushels of wheat, 548 million pounds of cotton, 295 million bushels of soybeans, and 3.33 billion pounds of rice annually that would be lost every year without the aerial application of pesticides. The value in additional crop yield that the aerial application industry brings to farmers, input suppliers, processors, and agricultural transportation and storage industries for corn, wheat, cotton, soybean, and rice production in the U.S. is estimated to be about \$37 billion. Aerial applicators treat a multitude of different crops other than these five, as well. Research summarized by the University of Minnesota<sup>5</sup> describes how soil compaction from ground rigs can negatively affect crop yields due to nitrogen loss, reduced potassium availability, inhibition of root respiration due to reduced soil aeration, decreased water infiltration and storage, and decreased root growth. Aerial application offers the only means of applying crop protection products when the ground is wet and when time is crucial during a pest outbreak. A study on the application efficacy of fungicides on corn applied by ground, aerial, and chemigation applications further demonstrates that aerial application exceeds ground and chemigation application methods in terms of yield response. The aerial application of crop protection products results in greater harvest yields of crops. This in turn results in less land being used for agricultural production, preserving more wetlands for natural water filtration, forest ecosystems for carbon sequestration and habitat for threatened and endangered species. The Texas A&M study<sup>6</sup> revealed that the total area of cropland needed to replace the yield lost if aerial application was not available for corn, wheat, soybean, cotton, and rice production is 27.4 million acres, an area roughly the size of Tennessee. Aerial applicators seed 3.8 million acres of cover crops annually.<sup>7</sup> This means that aerial applicators are responsible for helping to sequester 1.9 million metric tons of CO<sub>2</sub> equivalent annually, which according to the EPA would be the equivalent of removing approximately 412,000 cars with carbon-combustion engines from the roads each year.

#### **Justification for Docket No. FMCSA-2024-0121 Proposal to Transport 1,000 gal. Jet A Without HM Endorsement**

The FMCSA in its proposed rule thoroughly lays out—both economically and through existing safeguards—NAAA’s justification for the agricultural aviation industry to be granted an HM exemption for transporting limited quantities of jet fuel for states. To reiterate the agricultural aviation industry’s justification from a safeguard perspective, currently diesel is allowed to be transported in limited quantities without an HM endorsement for certain agricultural related entities. Jet A has nearly identical properties to diesel. Jet A has a flashpoint of between 100°F and 150°F, and diesel has a flashpoint of between 100°F and 130°F. Additionally, both diesel fuel and Jet A have the same autoignition temperature of 410°F. The properties between diesel fuel and jet fuel are so similar that diesel engines can, and often do, run on jet fuel, so allowing the exemption for the nearly identical fuels makes logical sense.

In the event states allow a Class A commercial driver’s license (CDL) driver to transport up to 1,000 gallons of jet fuel without an HM endorsement, all CDL drivers are still tested and must be knowledgeable about hazardous material basics, including what is a hazardous material; the responsibilities that are associated with hazardous material transportation; the different hazard classes, and divisions of hazardous material; precautions and special steps that must be taken when loading and unloading hazardous materials; and requirements pertaining to hazmat transportation. Basic CDL license preparation coursework includes this curriculum.<sup>8</sup>

Another safeguard is that aerial application operations typically take place in rural areas with minimal traffic. Also driving would more likely occur in dry, fair-weather conditions when applications are typically made so as not to runoff or dilute the applied product. Agricultural aircraft fly only under Federal Aviation Administration Visual Flight Rules (VFR) conditions. Furthermore, pesticide labels always include a wind speed range that usually does not exceed 12 miles per hour. These are all meteorological conditions that are preferable in which to drive and conditions when there are fewer highway related traffic accidents. Again, it is also the period in which commercial motor vehicles (CMV) supporting agricultural aircraft operations will be using public roads. Moreover, agricultural land is typically located on flat land with few curves making for safer highway transportation conditions compared to mountainous, curvy conditions. When transporting chemicals or fuel an agricultural aviation operation vehicle travels an average of 57.81 miles per day. It is important to note that they do not travel this many miles every day. In many cases, driving is done only once or twice a week to a satellite facility and only during certain

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<sup>5</sup> University of Minnesota. “Soil Compaction.” Accessed April 29, 2021. <https://extension.umn.edu/soilmanagement-and-health/soil-compaction>

<sup>6</sup> National Agricultural Aviation Association. May 2019. “2019 NAAA Aerial Application Industry Survey: Operators.” <https://www.agaviation.org/Files/Comments/NAAA%202019%20Operator%20Survey.pdf>

<sup>7</sup> Dharmasena, S. 2021. “Value of the Agricultural Aerial Application Industry in the United States” Research presented at the 2021 Ag Aviation Expo, Savannah, GA. <https://www.agaviation.org/2021aatresearchpapers>

<sup>8</sup> [https://www.unk.edu/offices/safety\\_center/\\_files/ptdt\\_syllabus.pdf](https://www.unk.edu/offices/safety_center/_files/ptdt_syllabus.pdf)

times of year. For more information on transporting to satellite facilities during a growing season see NAAA’s response to the FMCSA’ NPRM charge question (f.) below on issues in which the FMCSA is seeking further comment.

In the NAAA survey referenced in FMCSA-2024-0121 that our association conducted in 2005 to better understand how obtaining loader truck drivers with CDLs effects U.S. aerial application operations a question asked was “What type of roads would you use to transport fuels and chemicals for your aerial application business? The responses were as follows:

	<u>Response Percent</u>
Roads in rural areas with minimal traffic	92.9
Roads in residential areas with moderate traffic	20
Roads in cities and towns with considerable traffic	9.4

The responses underscore two things: (1) that the roads these drivers will be operating upon will not be heavily trafficked; and (2) the response rate to the survey was low—9.53%. Our 2019 industry survey had a 35.2% response rate. We conclude, based on this response rate, that many fewer operators in the industry are transporting fuel and crop protection products on the roads hence they did not respond to the survey.

Another question asked in the survey was “Has a vehicle owned by your company been involved in any type of accident while transporting fuel and/or chemical?” The responses were as follows:

<u>Response</u>	<u>Response Percent</u>
Yes	4.7
No	95.3

This response shows there is a very low chance that any roadway accident would occur based on historical evidence.

Operators of agricultural aviation businesses’ greatest fixed expenses is insurance, whether for their road vehicles or their aircraft. As such, they are very careful to vet their drivers for experience, check references and do criminal background checks. This is also required per regulation 49 CFR 383.3 (f)(3)(i) dictating that “Applicants must have a good driving record; ...Has not had any license suspended, revoked, or canceled;...Has not had any conviction for any type of motor vehicle for the disqualifying offenses contained in § 383.51(b);...Has not had any conviction for any type of motor vehicle for serious traffic violations; ...[and] Has not had any conviction for a violation of State or local law relating to motor vehicle traffic control (other than a parking violation) arising in connection with any traffic accident, and has no record of an accident in which he/she was at fault. In addition, 49 CFR 383.3 (f)(3)(vii) states, “Restricted CDL holders may not operate a CMV beyond 241 kilometers (150 miles) from the place of business or the farm currently being served.” This last provision will limit the radius in which an agricultural aviation operation driver will travel, adding another layer of safety.

NAAA would also like to note that 49 CFR 383.3 (f)(1)(i-iv) already allows agri-chemical businesses, custom harvesters, farm retail outlets and suppliers, and livestock feeders to transport these same quantities of diesel fuel which, to reiterate, has nearly the identical chemical properties as jet fuel. Furthermore, agri-chemical businesses, custom harvesters, farm retail outlets and suppliers, and livestock feeders are traveling the same limited distances, seasonally—not year-round—on the same rural, lightly-trafficked roads in which farm-related industries are traveling. NAAA’s request for exemption would simply allow parity between these similar industries and transportation patterns.

NAAA is also in a strong position to provide meaningful continuing education on highway safety to a large portion of the small business owners of agricultural aviation operations throughout the country through its sister organization the National Agricultural Aviation Research & Education Foundation’s educational program known as the Professional Aerial Application Support System (PAASS). The focus of the PAASS program is to educate individuals in the aerial application industry on the latest techniques and technologies to mitigate agricultural aviation flying accidents and off-target application incidents, in addition to enhancing the security of aerial application operations. The PAASS program is taught to approximately 1,500 individuals in the aerial application industry each year which is nearly the same number of aerial application businesses in the U.S. In addition to educating the industry on security, environmental stewardship and pilot safety, PAASS can also be used to further educate its members on highway transportation safety issues. The PAASS program has received acknowledgements,

endorsements and/or financial support from other federal agencies including the Federal Aviation Administration, the Environmental Protection Agency, the Transportation Security Administration and the Government Accountability Office.

Regarding the economics of proposed rule FMCSA-2024-0121, it does remedy costly and manpower burdens and efficiency problems for agricultural aviation operators. To reiterate, almost all agricultural aviation operations are exclusively small businesses, and it is a challenge to obtain or pay for the training of an HM endorsement for a driver who already has the knowledge and skills associated with a commercial driver’s license (CDL). Exacerbating the problem with finding potential employees to transport commercial motor vehicles (CMV) for agricultural aircraft operators, difficulties also arise in finding state driver’s licensing agencies (SDLA) locations and scheduling testing times to obtain the HM endorsement and be properly fingerprinted. Operating in rural areas, the closest SDLA could be several hundred miles away and fingerprinting facilities that are required for the HM endorsement may be ever further away. Moreover, the retention of drivers with both a CDL and HM endorsement is extremely difficult due to the seasonal nature of aerial application work. When an individual possesses this much training, they are more likely to opt for consistent, non-seasonal work, leaving aerial application operations without the necessary drivers during the application season. Three other question asked in the NAAA survey to better understand how obtaining loader truck drivers with Commercial Drivers Licenses (CDLs) effects U.S. aerial application operations were as follows:

**Have you found yourself without a CDL driver for vehicles used to transport fuel and chemicals during your aerial application season?**

<u>Response</u>	<u>Response Percent</u>
Yes	90.8
No	9.2

**Have you experienced difficulties finding drivers with CDLs for vehicles used to transport fuel and chemicals to satellite application strips?**

<u>Response</u>	<u>Response Percent</u>
Yes	95.4
No	4.6

**Have you ever suffered an economic hardship as a result of not having a qualified driver available to transport fuel and/or chemical for your aerial application business?**

<u>Response</u>	<u>Response Percent</u>
Yes	67.9
No	32.1

These responses clearly indicate that there is a shortage of drivers for aerial application operations and that has resulted in negatively affecting these business operations. Exempting CDL drivers from the HM endorsement would help increase the supply of available drivers.

There is also environmental efficiency that comes with using commercial vehicles in aerial application work. Commercial motor vehicle drivers are needed to operate vehicles with aircraft fuel and crop protection products to satellite airstrips nearer to the field(s) that need applications. This is necessary to save on the quantity of fuel consumed by ag aircraft and to save aircraft flight time between the loading facility and the application site. A shortage of available drivers may prevent use of a satellite airstrip closer to the application site. This results in an aircraft having to travel back to its home base for each load instead of using a closer landing area. In this case more fuel is burned to travel to the application site and more time elapses, resulting in fewer application jobs performed during the day. The granting of the exemption would save considerably on fuel costs, which have increased significantly over the past several years. The average wholesale cost of jet fuel/aviation grade kerosene (Jet A) used for turbine engine agricultural aircraft can range significantly to approximately \$2.61 per gallon presently to easily double that amount. For more information on these cost savings to aerial application operations and environmental efficiencies see NAAA’s response to charge questions (f.) below on issues in which the FMCSA is seeking further comment.

Exacerbating the problem with finding potential employees to transport commercial motor vehicles for agricultural aircraft operations, difficulties also arise in finding state driver’s licensing agencies (SDLA) locations and scheduling testing times to

earn the HM endorsement. These operations are primarily located in rural areas a considerable distance from SDLAs, let alone finger printing facilities. One operator located in Corning, Arkansas informed NAAA that the nearest SDLA offering the HM endorsement was 50 miles from his operation and the fingerprinting location was 100 miles from his operation. Two other questions asked in the NAAA survey to better understand the difficulty and even costliness associated with the great distances of SDLAs from U.S. aerial application operations were as follows:

**Have you found that there is only a select number of Department of Motor Vehicle (DMV) locations available in your state(s) that offer services to obtain Commercial Driver’s Licenses?**

<u>Response</u>	<u>Response Percent</u>
Yes	76.7
No	23.3

**Have you found it difficult to schedule a time with a DMV location to test a potential driver for a CDL and that this has resulted in a hardship for your aerial application business?**

<u>Response</u>	<u>Response Percent</u>
Yes	80.5
No	19.5

NAAA’s Responses to FMCSA Charge Questions Which the Agency Seeks Further Comment

As part of the proposed rule to Docket No. FMCSA-2024-0121, NAAA is providing responses to the FMCSA’s charge questions in which the agency is seeking further comment. Aforementioned material also provides insight and responses to these following questions.

(a). FMCSA believes that States with economies heavily dependent on agriculture would be most likely to exercise a jet fuel exemption. Is this an accurate assumption?

According to NAAA’s 2019 Industry Survey<sup>9</sup>, the states with the greatest number of agricultural aviation operations are as follows: 1. Texas, 2. Minnesota, 3. Arkansas, 4. Louisiana, 5. California, 6. North Dakota, 7. Mississippi, 8. Kansas, 9. Illinois, 10. South Dakota. NAAA supposes, based on precedent, that the 16 states that currently grant the HM exemption for diesel would be the states that grant an HM exemption for jet fuel. The following are those 16 states with the percentage and the estimated number of agricultural aviation operations in that state according to NAAA’s 2019 Industry Survey relative to the nation’s total of 1,560 operations: Alabama (0.7%, 11), Connecticut (0.0%), Iowa (3.1%, 48), Kansas (4.2%, 66), Kentucky (0.0%), Minnesota (7.6%, 119), Mississippi (4.7%, 73), Nebraska (5.1%, 80), North Dakota (4.9, 76), New Mexico (0.4%, 6), New Jersey (0.7%, 11), Oklahoma (2.7%, 42), Pennsylvania (0.4%, 6), South Dakota (3.6%, 56), Texas (8.9%, 139), and Wisconsin (1.6%, 25). There would be a potential population of 758 agricultural aviation operations throughout the U.S. that could utilize this proposed rule if the states allowing for an HM exemption for diesel followed suit and allowed an HM exemption for jet fuel. It is highly unlikely, however, that all of these ag aviation operations would utilize the exemption since many only operate out of a single airport and would have no need to transport fuel and crop inputs to a satellite runway.

(b.) Will this proposal lead to additional burdens or costs to SDLAs and/or roadside officers and any other law enforcement officials responsible for enforcing CDL and HM endorsement compliance?

SDLA’s and highway enforcement officials would be best at determining the burden and costs associated with a state allowing the exemption to the HM endorsement proposed by the FMCSA. However, NAAA will add that most agricultural aviation businesses commonly include large company decals on their trucks as a means of identification and marketing their services (see illustration below). As such, if a highway enforcement official in a state that granted the HM exemption were to see an agricultural aviation operation truck with such a decal

<sup>9</sup> National Agricultural Aviation Association. May 2019. “2019 NAAA Aerial Application Industry Survey: Operators.” <https://www.agaviation.org/Files/Comments/NAAA%202019%20Operator%20Survey.pdf>



or such a vehicle pulling into an airport or landing strip with an agricultural aircraft it could easily assume it qualified for the exemption and focus on monitoring other, more important traffic safety issues.



As is typical in the agricultural aviation industry, supply trucks will have the logo of the aerial application company in a place of easy and quick recognition for highway patrol to see as is the case with this placarded augur truck equipped with an 800-gallon fuel tank.

(c.) How many Class A CDL holders with HM endorsements are currently involved in transporting jet fuel in quantities of 1,000 gallons or less for agriculture aviation operations?

See NAAA's response to the FMCSA's charge question (a.) above.

(d.) How many CMV drivers will enter the market for transporting jet fuel in quantities of 1,000 gallons or less in participating States due to relaxed requirements?

See NAAA's response to the FMCSA's charge question (a.) above.

(e.) As part of the initial petition for rulemaking, the NAAA claimed that a shortage of available drivers may prevent the use of a satellite airstrip closer to the application site. How many satellite airstrips would be available for use if this proposal were to be finalized? How many refueling trips from application sites back to operational bases (mixing-loading sites) do aircraft currently make, and how much fuel do these trips require?

See NAAA's response to the FMCSA's charge question (a.) above.

(f.) How much revenue do agriculture aviation operators lose as a result of not having an available CMV driver with a Class A CDL and HM endorsement?

Referenced in the NPRM for FMCSA-2024-0121 an NAAA survey from 2005 cited that one operator claimed that he loses \$2,500 to \$5,000 per day because of not having an available CDL holder and loses work as a result of this shortage. More recently, NAAA has collected more detailed information on the costs of not having an available CMV driver with a Class A CDL and HM endorsement.

In the Midwest and the South, particularly the Delta region, wheat and rice, respectively, are fertilized commonly by air. The fertilizer is typically dry, not liquid. As such, it takes many more loads to treat a field per day than the average liquid application. In the South's Delta Region, such as Arkansas, Mississippi and Louisiana, rice fertilizer is applied liberally for a 60-day period between May and June. That amount is cut in half for another 6 weeks after May and June. Because of the additional ferrying trips due to these dry loads, satellite runways are preferred to be used by operators that are located closer to the target field, and they average approximately nine miles from the main strip, so a truck is needed to ferry fuel and crop inputs to the satellite

runway. For a single aircraft operation, it might take two trucks to transport those supplies to the satellite strips in a single day, averaging one hour on the road per truck. The number of trucks needed for larger operations is cut in half if it has three aircraft or greater (one aircraft = two supply trucks; three aircraft = five supply trucks). Utilizing satellite strips that are an average of nine miles from the base operation and an 800-gallon capacity ag aircraft will allow an aerial applicator to make 60 loads a day (it is more likely that only 40 loads will be able to be applied if operating from the base operation due to the additional time to ferry to and from). The average price of Jet A (aviation grade kerosene) ranges, but presently it averages approximately \$2.61 per gallon. If an aerial applicator is presently unable to find a CDL driver with an HM endorsement and must ferry from his base operation in this fertilizer application scenario they will use 25.8 gallons of Jet A per load versus 17 per load if utilizing satellite strips nearer to the target field. This will result in a financial cost of an additional \$1,378.08 per day (25.8 gallons x 60 loads x 2.61) – (17 gallons x 60 loads x \$2.61 per gallon) for a single agricultural aircraft. This is if the aircraft can treat 60 loads per day with the available amount of daylight, and endurance of the ag pilot. Neither should be tested for aviation safety purposes. According to NAAA's 2019 Industry Survey there are 2.1 aircraft per agricultural aviation operation.<sup>10</sup>

### Conclusion

NAAA appreciates the work that went into the FMCSA development of this proposed rule to allow states to waive the HM endorsement requirements for holders of Class A CDL's who transport no more than 1,000 gallons of aviation grade jet fuel in support of seasonal agricultural operations. Many safeguards are in place ensuring the equivalent level of highway safety once the rule is in place in states implementing it. In addition, the rule, once in place in states implementing it, will bring more environmental efficiencies into the agricultural aviation industry that will also bring economic efficiencies. As such, we urge the FMCSA to move forward in finalizing the rule as proposed in docket no. FMCSA-0121. A number of other transportation entities also support the proposed rule including the Arkansas Trucking Association.

Thank you for this opportunity to comment.

Sincerely,



Andrew D. Moore  
NAAA CEO

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<sup>10</sup> National Agricultural Aviation Association. May 2019. "2019 NAAA Aerial Application Industry Survey: Operators."  
<https://www.agaviation.org//Files/Comments/NAAA%202019%20Operator%20Survey.pdf>