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United States Department of Transportation
1200 New Jersey Avenue, SE
West Building Ground Floor, Room W12-140
Washington, DC 20590

Re: CDA Comments in Response to "Modernizing Regulations to Facilitate Transportation of Hazardous Materials Using Highly Automated Transportation Systems" (Docket No. PHMSA-2024-0064)

To Whom It May Concern:

The Commercial Drone Alliance (CDA) appreciates the opportunity to submit comments in response to the Pipeline and Hazardous Materials Safety Administration's (PHMSA) advance notice of proposed rulemaking (ANPRM) titled "Modernizing Regulations to Facilitate Transportation of Hazardous Materials Using Highly Automated Transportation Systems." The commercial unmanned aircraft systems (UAS or drones) industry is at the forefront of automation technologies that will revolutionize the way critical goods and supplies are delivered to millions of Americans.

Thousands of commercial drone package delivery operations occur safely in the United States each day, including deliveries of commodities and household goods that contain hazardous materials (hazmat). The commercial drone industry has long been plagued by an overly burdensome regulatory framework, including for transport of hazmat, which does not account for the lower risk profile of commercial drones carrying limited quantities of hazmat. Current regulations stifle domestic innovation and progress while international peers and competitors forge ahead in benefiting from commercial drone delivery operations.

I. About the Commercial Drone Alliance

The CDA advocates for U.S. leadership in advanced aviation and actively participates in legislative, regulatory, and policy efforts to facilitate the safe and secure development and expansion of domestic commercial drone operations. The CDA works with all levels of government to collaborate on policies for industry growth and educates the public on the safe and responsible use of commercial drones to achieve economic benefits and humanitarian gains. We bring together commercial drone manufacturers, end-users, service providers, advanced air mobility companies, drone security

companies, and vertical markets including oil and gas, precision agriculture, construction, security, communications technology, infrastructure, newsgathering, filmmaking, and more.

Several CDA member companies, including those serving on the CDA Board, are Part 135 drone package delivery operators that are authorized by the Federal Aviation Administration (FAA) to accept, handle, and transport hazardous materials via UAS. Modernization of the hazmat regulatory framework applicable to drone package delivery operations has been a key policy priority of the CDA for several years.

II. The Urgent Need for Regulatory Reform

Highly automated and autonomous drone package delivery operations have the potential to significantly enhance the safety, efficiency, and reliability of transporting goods, including everyday household goods which contain fairly limited amounts of hazmat. We concur with and appreciate PHMSA's recognition that the emergence of highly automated technologies, including those in the drone package delivery space, necessitate updates to the current hazmat regulatory framework. The current regulatory requirements for air transport of hazmat were designed for large manned aircraft carrying significant quantities of hazmat, whereas the transport of limited amounts of consumer goods containing hazmat with commercial drones clearly has a much lower risk profile. In doing so, the current regulatory framework suppresses realization of the significant safety, environmental, and efficiency benefits that highly automated and autonomous drone package delivery operations can bring to hazmat supply chains and the American public more broadly.

CDA has previously advocated that PHMSA adopt a risk-based approach to regulating hazmat transport by highly automated package delivery drones. In comments to PHMSA and FAA as part of PHMSA's and FAA's public meeting to solicit input on implementing Section 933 of the FAA Reauthorization Act of 2024, titled "Special Authority for Transport of Hazardous Materials by Commercial Package Delivery Unmanned Aircraft Systems"[1], the CDA encouraged PHMSA and FAA to account for the vast differences between the types and quantities of hazmat being transported by highly automated package delivery drones and larger traditional manned aircraft. Similarly, in comments filed to PHMSA's ANPRM titled "Hazardous Materials: Mandatory Regulatory Reviews to Unleash American Energy and Improve Government Efficiency"[2], CDA also highlighted how the current Hazardous Materials Regulations (HMR) fails to adequately address the differing risks and policy objectives between drones and large crewed aircraft. The result is a regulatory framework that does not consider the different operating environment in which drones fly, leading to illogical outcomes that fail to enhance safety. This rulemaking provides PHMSA with an opportunity to address this disconnect and eliminate HMR requirements that are intended to mitigate risks that do not exist in the context of highly-automated drone delivery operations.

In support of PHMSA's efforts to modernize the HMR, we provide the below recommendations for amending the HMR to better reflect the low-risk profile of highly-automated and autonomous commercial drone delivery operations. These changes will enable beneficial commercial drone operations while ensuring no adverse effect on safety.

[1] FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 933, 138 Stat. 1025, 1368–69 (2024).

[2] Hazardous Materials: Mandatory Regulatory Reviews to Unleash American Energy and Improve Government Efficiency, 90 Fed. Reg. 23656 (Jun. 4, 2025).

III. Key Recommended Changes to the HMR

A. Distinguish Package Delivery Drones from Manned Aircraft

Drone delivery operations differ substantially from traditionally manned aviation operations in several aspects relevant for hazmat risk evaluation. Unlike traditional manned aircraft, drones typically operate at or below 400 feet above ground level (AGL), where pressure differentials and temperature changes are not an issue. Flight duration is another consideration when assessing risk. Most drone package delivery flights last only minutes, further minimizing certain environmental considerations and significantly reducing the risk profile if a hazmat incident does occur. Given these important differences, the risk considerations analyzed by PHMSA for air transport are generally not applicable to drone package delivery operations and the HMR requirements should be revised to reflect this distinction.

There are several approaches PHMSA could take to distinguish between package delivery drones from traditional manned aircraft in the HMR. One option would be to exclude the transportation of hazmat by all unmanned aircraft from the existing carriage by aircraft rules in Part 175. If necessary, the scope of an exclusion from Part 175 could be limited based on a drone's overall weight or payload capacity. For example, the HMR could be revised to exclude operations occurring under the anticipated Part 108 rule for beyond visual line of sight (BVLOS) operations. The proposed Part 108 rule would limit the weight of package delivery drones, including anything attached to or carried by the drone, to 110 pounds or less. Another approach could be to exclude drone package delivery operations involving payloads of 20-25 pounds or less, which reflects roughly the maximum payload that could be achievable under the FAA's proposed Part 108 operating rules. The exclusion from Part 175 could also be scoped to exclude limited quantities of low-risk hazmat. PHMSA could also develop a UAS-specific, tailored rule establishing requirements for commercial drone transport that are commensurate with the risk and exempt this transport from all other requirements in Subchapter C of the HMR. This would be similar to the approach that PHMSA has taken with respect to reverse logistics. These approaches need not be mutually exclusive.

B. Broaden Limited Quantity Exceptions to Include Transport by Package Delivery Drones

Taking into consideration that there are multiple regulatory options for excluding drones from compliance with Part 175, the HMR must at least be amended to expressly permit the transportation of limited quantities of hazmat by highly automated and autonomous package delivery drones. Limited quantity shipments, by definition, involve small amounts of hazmat that present a greatly reduced transportation risk. Limited quantity ground shipments enjoy the most expansive scope of relief from the HMR as compared to other modes. When shipped by highway or rail, limited quantity hazmat shipments are generally excepted from hazard class labeling and placarding, the need for specification packaging, and shipping paper requirements, among other HMR requirements. In contrast, the transport of limited quantities by aircraft is more restricted and often prohibited.

By grouping commercial drone delivery in with traditional air transport, the HMR imposes unnecessary and undue burdens on drone delivery operations. As noted above, the environmental and operating conditions of commercial delivery drones is more akin to transport by motor vehicle over domestic highways than transport by traditional manned aircraft. It is also important to consider the types and quantities of goods being transported and how they would otherwise be transported.

Commercial delivery drones generally deliver consumer goods, medications and healthcare related products, substances, and specimens. Some of these consumer goods are classified by regulation as "dangerous goods," but in small quantities and in their normal commercial packaging have extremely low risk profiles—e.g., nail polish, hand sanitizer, Sharpie markers, individual packs of AA batteries, dry ice used to cool medical samples or refrigerated products, and small consumer electronics containing or packaged with small lithium batteries. These goods would not otherwise be transported by commercial carriers, but rather by personally occupied vehicles where groceries are often mixed with these same "hazardous materials" without forethought and with limited effect because of their packaging and small quantity. Delivery by drone can provide greater package protection simply due to smaller cargo volumes which naturally constrain movement and completely avoid exposure to persons in moving vehicles. Given that transport by drone presents a lower risk profile than personal ground transportation of goods containing hazmat, commercial drone delivery of limited quantity hazmat should be afforded the same scope of relief that is extended to ground transportation of the same commodities.

C. Codify Exemptions Commonly Granted to Package Delivery Drone Operators Via Special Permits.

Several Part 135 drone package delivery operators currently hold PHMSA Special Permits which provide exemptions to various HMR requirements. See e.g., DOT-SP 22087 issued to Zipline International Inc.:

> **REGULATIONS FROM WHICH EXEMPTED:** 49 CFR Part 172 Subparts C — H, in that shipments of certain hazardous materials are not subject to the documentation, hazard communication and training requirements of the HMR when transported to or from a distribution center, retail outlet, or an end-user, except as specified herein; 49 CFR § 173.24 and 173.24a in that requirements for outer packagings, shifting, closures, and package testing do not apply; 49 CFR § 173.27(c) - (f)(2) and § 173.167 in that application of the air limited quantities system is amended as described herein; 49 CFR § 173.185(c), in that a proprietary outer packaging without hazard communication; is authorized; and 49 CFR Part 175, in that alternative procedures are specified herein.

To help eliminate unnecessary, redundant, and inefficient requirements for drone transport, the HMR should be revised to incorporate exemptions that have already been granted to drone delivery operators via Special Permits.

D. Eliminate Unnecessary Labeling, Marking and Shipping Paper Requirements

The transport of consumer goods and other low risk hazmat via UA should also be excepted from compliance with current hazmat labeling, marking, and shipping paper requirements when products and goods are transported directly to the ordering customer. When a customer places an order, the customer knows exactly what is in the package, including the presence of any low-risk hazmat, the same way they would picking the item off a shelf at the store. In addition to the product itself serving as a verification, records also can be sought if needed through customer service, and the catalogue from which the customer ordered already lists the product information for the item ordered. Moreover, unlike traditional supply chains, there is no intervening human interaction with hazmat transported via UA directly to a customer. Since the only person interacting with the package being

transported is the customer that already has knowledge of its content, labeling and marking requirements intended to communicate hazmat contents of a package are unnecessary.

To the extent that hazmat transported via drones is subject to marking, labeling and shipping paper requirements, the HMR should be revised to allow for digital communication of information that would traditionally be included in package labelling, marking and shipping papers.

E. Reduce Training Requirements for Low-risk Hazmat Transported Via Package Delivery Drones

PHMSA should scope the HMR to reduce and tailor hazmat training requirements for UA hazmat transport. Not every individual that loads, picks, or otherwise interacts with a consumer good or other item containing low-risk hazmat should be subject to full hazmat employee training. Given the low-risk nature of hazmat transported via drones, the current training requirements are overly burdensome and provide no additional safety benefits. Under current HMR requirements, a picker who packs a shipment containing nail polish would likely be required to receive hazmat training. In the context of drone package deliveries, the picker's function is akin to a store employee bagging the customer's nail polish. The role of the Part 135 drone delivery operator is akin to an Uber or Instacart deliverer driving the nail polish order to a customer. The same level of care should be applied whether confirming product quality and safe handling when loading the drone or when handling in one's own home. Businesses dealing in such materials already have handling precautions and training appropriate to the materials they sell and the additional handover to a drone (vs. directly to a customer) should not require a separate training program. The HMR training requirements should balance safety with practicality for low-risk drone package deliveries and be tailored to the package delivery operator's specific concept of operations. The scope of drone package delivery operator employees subject to hazmat training requirements should be narrowed to only capture individuals that directly handle non-consumer hazmat such as certain medical devices (e.g. large mercury thermometers) or certain types of samples or specimens.

F. Allow for Packaging Requirements That Conform to Recognized Consensus Standards for Dropped Deliveries

The HMR should be revised to allow the use of UAS-specific packaging requirements (for intentionally dropped deliveries) that conform to recognized consensus standards, rather than relying solely on packaging frameworks developed for traditional manned aircraft and surface transportation. Highly automated and autonomous package delivery drones present distinct operational characteristics—including smaller payloads, shorter transit times, automated handling, and different crash and containment risk profiles—that warrant packaging solutions purpose-built for those conditions. Allowing compliance through established consensus standards would ensure that UAS packaging is rigorously tested, performance-based, and responsive to evolving technology, while preserving the HMR's core safety objectives. Such an approach would promote innovation, regulatory flexibility, and harmonization with aviation safety oversight, enabling safe deployment of hazardous materials by UAS without compromising public or environmental protection.

G. Strive to Avoid Duplicative and Overlapping Bureaucracy

The transport of hazmat by commercial delivery drones is regulated by both the FAA and PHMSA. In its efforts to modernize the HMR, PHMSA should look for opportunities to reduce regulatory overlap and redundant provisions that address the same risks already mitigated under FAA authority. More broadly, we encourage both agencies to coordinate their respective roles, align compliance obligations, and ensure that hazmat requirements applicable to UAS operations are complementary rather than duplicative. Such coordination would preserve safety, reduce unnecessary regulatory burden, and provide regulatory clarity for operators while respecting each agency's statutory expertise and jurisdiction.

IV. Responses to Specific Questions in the ANPRM

In addition to and consistent with the key recommended changes to the HMR discussed in Section II, CDA offers the following comments in response to certain specific questions raised by PHMSA in the ANPRM.

A. General Questions

1. How should PHMSA address the transportation of hazardous materials using highly automated transportation systems (*e.g.,* revisions to the HMR, corresponding guidance, other resources)?

The current regulatory framework for air transport of hazmat fails to differentiate the vastly different risk profiles of drones versus large traditional passenger and cargo aircraft carrying hazmat. By grouping commercial drone delivery in with traditional air transport, the HMR imposes undue burdens on drone delivery operations and hinders the ability of industry to scale operations. The HMR must be revised to reflect a risk-based regulatory framework that accounts for the low-risk types and quantities of hazmat being transported.

2. Should PHMSA consider specific automation use cases when revising the HMR? Or should requirements be scoped to various system automation use cases and performance capabilities remain with the appropriate modal administration?

CDA recommends that PHMSA develop a tailored exception for drone delivery of limited quantities of hazmat items to reduce the difference in regulatory burden between drone delivery and ground transportation. PHMSA should assess the type and quantity of hazmat transported and fully remove all restrictions on certain household items/consumer commodities that contain or are considered hazmat when carried by drones. For example, lithium-ion batteries with a Watt-hour (Wh) rating not exceeding 100 Wh are permitted onboard passenger aircraft and lithium-ion batteries having between 101-160 Wh are also authorized with approval of the operator.[3] Transporting these types of lithium-ion batteries on drones in limited quantities represents a lower risk profile than carriage onboard a passenger aircraft and should be permitted under the HMR.

[3] 49 CFR § 175.10(a)(2)(ii) and (a)(18)(ii).

3. What specific safety concerns do you foresee with the use of highly automated transportation systems for hazardous materials? What specific safety benefits do you foresee with the use of highly automated transportation systems for hazardous materials?

The transport of goods containing hazmat via highly automated drones will improve safety by preventing risk of harm associated with human error. Highly automated systems also require less human involvement in the transport supply chain, and this improves safety by reducing the likelihood of a person being harmed by exposure to hazmat.

It should not go unstated that the transportation method we are comparing to is the transport of hazardous materials in personal vehicles. This transportation often involves loose shopping bags placed in the occupied area of a personal vehicle without restraint. Systems designed for transportation of small packages have inherent benefits in product restraint in those small packages and a direct motivation to ensure product integrity all the way to the consumer.

4. How should PHMSA and modal administrations evaluate and mitigate risks associated with these systems?

The environmental considerations (pressure, temperature, vibration, etc.) for hazmat transported via drone differ substantially from traditionally manned aviation operations in several aspects relevant for hazmat risk evaluation. Most drone package delivery flights only take a few minutes, which further minimizes any potential environmental impact on the hazmat being transported. Commercial drone operations are more akin to transport by motor vehicle over domestic highways in that they operate in unpressurized environments and are not subject to the same weather and environmental conditions as traditional, higher-altitude air transport. Package handling characteristics are also more aligned with ground transport, whereby products transported via drone move from origin to destination without passing through layers of ground handlers and without needing to withstand the wear and tear typically associated with cargo passing through one or more airports. Should an incident occur during drone delivery operations, it will essentially be addressed on the ground, and therefore in the same manner as a ground incident, because there is no crew on board and the programmed flight will cease.

Given the similarities between ground transport and drone package delivery, the HMR requirements for mitigating risks in the drone package delivery context should more closely align with existing HMR requirements for mitigating risks associated with ground transport of hazmat.

7. Are current packaging requirements in 49 CFR parts 173 and 178 adequate for highly automated transportation systems? If not, in what ways are they not adequate, and what new regulations or amendments would you recommend?

The current packaging requirements for air transport of hazmat are overly burdensome and inappropriate for the transport of hazmat via highly automated drones. The current HMR packaging requirements are focused on mitigating occupied air transport risks that do not exist when the transport occurs using drones. The HMR packaging requirements should reflect the low-risk environment in which package delivery drones operate. CDA urges PHMSA to develop specific exceptions that recognize drone transporters direct motivation to ensure product integrity and quality and fully remove all packaging requirements for hazmat transported via drones.

Drone delivery operations are taking place every day and each operator takes product integrity and quality seriously. When considering consumer goods, standard consumer packaging is designed to provide adequate protection when transported in small quantities whether by drone or by human carried shopping bag. This is as true for hazardous materials as it is for normal retail items. Our members provided the following product integrity data on items shipped without damage

- 80,000 cups of coffee or prepared drinks (standard inserts used to keep product upright).
- 6,000 packages of uncooked eggs (no special packaging).
- 3,000 glass bottles (no special packaging).

The safe transport of the above items would likewise extend to the transport of goods containing low-risk hazardous materials. While anecdotal in nature, these examples illustrate that standard consumer packaging can enable safe carriage of small quantities of hazardous materials by small drones.

8. Are current packaging exceptions in 49 CFR part 173 adequate for highly automated transportation systems? If not, in what ways are they not adequate, and what new exceptions or amendments would you recommend?

The current packaging exceptions in 49 CFR Part 173 are not adequate when applied to the transport of goods containing hazmat by highly automated drones as they do not account for the specific risk profile of commercial drone transport and instead treat all air transport identically. PHMSA should review the exceptions set forth in 49 C.F.R. §§ 173.150 through 173.156 and distinguish transport by drone from other air transportation where appropriate, such that these exceptions would be applicable to drone transport even if they are otherwise inapplicable to air transport. The exceptions available for highway and rail transport of goods containing hazmat should also be available to drone transport. By aligning hazmat regulations with the low-risk environment in which drone delivery operations occur, PHMSA can enhance safety and increase competition by reducing the regulatory burden on drone delivery operators.

19. How do unmanned highly automated transportation systems (e.g., absence of passengers, crewmembers, drivers) affect the current level of safety of the HMR?

Commercial package delivery drones provide inherent risk reductions in hazmat transport because there are no humans (pilots or passengers) onboard with a risk of exposure to the hazmat during an incident or accident. Furthermore, they remove the potential exposure to spilled or otherwise liberated materials that the consumer or courier would encounter during their own ground transport.

B. Economic Questions

1. What are the broadly anticipated economic benefits of using highly automated transportation systems for hazardous materials?

The drone industry is projected to contribute billions of dollars to the global economy over the next decade, with some projections as high as $90 billion by 2030.[4] Drone delivery is transforming the way consumers receive products and expand businesses' capacity to market and distribute their goods. By accelerating economic growth, reshaping logistics and last-mile transportation, and restoring national leadership in advanced aviation, commercial drone operations—including commercial drone delivery—play a key role in energy dominance and transportation modernization.

7. What types of hazardous materials does the industry expect to transport via highly automated transportation systems in the near future, and by which mode? What commodities are expected to be transported by highly automated transportation systems in high volumes once the technology is more widely deployed?

Commercial delivery drones generally deliver low-risk consumer goods, as well as medications and healthcare related products, substances, and specimens. Some of the most common goods transported are small consumer electronics containing or packaged with small lithium batteries. CDA notes that, as one of the listed materials covered under 49 CFR § 175.10 for transport in crewed aircraft, lithium batteries not only have been flagged as safe to transport for those aboard crewed aircraft, but also are appreciable components of nearly ever federally authorized UAS. Given this federally recognized approval for safe aircraft carriage, PHMSA should scope its regulations to remove currently unnecessary hurdles for drone transport of lithium batteries and other similar low-risk items in small quantities as their additive risk is negligible.

In addition, we expect a wide range of consumer items will be transported and in combinations that are currently prohibited under the HMR. However, these same combinations are perfectly acceptable in personal vehicle transport with limited adverse instances. Drone delivery providers should be permitted to carry basic consumer hazardous material with little impact, as well as support medical applications with appropriate precautions. It would be appropriate for the HMR to require additional precautions for specific categories of hazmat that can create a greater effect in the event of product loss (e.g. radioactive materials, appreciable quantities of flammable liquids).

C. Specific HMR Questions

2. How should PHMSA ensure that highly automated transportation systems comply with the intent of shipping paper requirements in part 172, subpart C (e.g., hazard communication documentation that provides appropriate information to appropriate personnel, including emergency responders)?

The current labeling and shipping paper requirements for goods transported via highly automated drones should be removed or modified. If a drone is making a delivery of a specific customer order, there should not be a requirement to include shipping papers with the product being

[4] *Levitate Capital, The Future of the Drone Economy: A Comprehensive Analysis of the Economic Potential, Market Opportunities, and Strategic Considerations in the Drone Economy 1 (Dec. 2020), https://levitatecap.com/levitate/wpcontent/uploads/2020/12/Levitate-Capital-White-Paper.pdf.*

delivered. In addition to the product itself serving as a verification, records also can be sought if needed through customer service, and the catalogue from which the customer ordered already lists the product information for the ordered item.

4. How can highly automated transportation systems effectively implement the intent of hazard communication requirements, including labeling, marking, and placarding, as specified in part 172, subpart D, E, and F, respectively?

CDA urges PHMSA to develop a specific exception for commercial drone delivery that would allow for greatly reduced packaging, marking, labeling, shipping paper, and training requirements. Such an exception should provide relief from 49 C.F.R. § 173.27 (*General requirements for transport by aircraft*) and Part 175 (*Carriage by Aircraft*), including the requirement to inspect for damaged shipments after unloading. PHMSA has precedent for examining a specific set of operations or activities, such as requirements and exceptions for reverse logistics operations under 49 C.F.R. § 173.157 and thereby developing a streamlined set of hazmat requirements that align with the risk profile of the transport operations. PHMSA should take a similar approach for drone package delivery operations. To the extent operational requirements (e.g., some form of training or notification) are imposed, such requirements should be tailored to the specific low-risk profile of commercial drone delivery operations. Hazmat training requirements should be focused on package delivery operator employees handling non-consumer hazmat.

Additionally, "Cargo Only Label" requirements should be eliminated for highly automated drone transport. Drones are incapable of carrying passengers and the "cargo only" distinction is therefore irrelevant.

10. Should additional information be required of a Special Permit applicant for highly automated transportation systems? Or should additional information continue to be requested by PHMSA and modal administrations on an ad hoc basis?

The HMR should be revised to reflect a risk-based framework for regulating the transport of hazmat by highly automated and autonomous package delivery drones to alleviate the need for Special Permits in most scenarios. To address unique scenarios where a Special Permit is needed, CDA urges PHMSA to prepare and publish a list of active Special Permits that drone delivery companies and their partners can apply for party status. Doing so would help the drone industry to scale operations as it awaits future rulemaking in this area.

E. Air-Specific Questions

2. How should PHMSA and FAA address HMR requirements (e.g., accessibility, prohibitions, quantity limits) when no crewmembers are present on cargo aircraft (e.g., UAS, AAM)?

As a general matter, PHMSA should strive to eliminate any HMR requirements that are intended to mitigate risks that do not exist in the context of highly-automated drone delivery operations. CDA urges PHMSA to consider amendments to the HMR that would reduce barriers to the delivery of limited quantities of household goods and healthcare items by drone. In addition to the environmental and operating conditions of commercial delivery drones, it is important to consider the types and quantities of goods being transported. PHMSA should scope its regulations to remove currently

unnecessary hurdles for UAS to transport lithium batteries and other similar low-risk items in small quantities.

4. Should there be new exceptions or revisions to current exceptions from the HMR in part 175 (e.g., §§ 175.8, 175.9) to account for highly automated transportation systems? Should the exceptions be contingent on approval by the FAA and operator safety risk assessments?

Yes, CDA urges PHMSA to except highly-automated drone delivery operations from compliance with Part 175 in its entirety for small package delivery drones operated under 14 CFR Parts 108 or 135.

7. Are there any hazardous materials currently subject to the HMR when transported by aircraft (but not regulated when transported by other modes) that should not be subject when transported by unmanned highly automated air transportation systems?

CDA urges PHMSA to distinguish between hazmat transported via highly-automated delivery drones and traditional manned aircraft. This distinction could be achieved by limiting the application of Part 175 to commercial drone delivery operations. Drone package delivery operations could be excluded entirely from Part 175. An alternative approach would be to scope an exclusion from Part 175 based on a drone's weight or the weight of the payload.

9. How can highly automated transportation systems comply with current inspection requirements (e.g., §§ 175.88, 175.90, for packages of hazardous materials)?

Title 49 CFR § 175.90 stipulates that packages containing hazardous materials must be inspected for damage or leakage immediately after being unloaded from an aircraft. Such an inspection requirement imposed on the operator is not realistic or feasible in a UAS package delivery business model. In practice, consumers make this inspection when they open the package to examine what was delivered and whether their items arrived intact. In nearly all applications, there is no intermediary and this function cannot be completed by an operator. Furthermore, it would be a poor use of time, resources, and logistics to develop the means for a qualified inspector or the operator to evaluate each delivery. There are other means by which customers can alert vendors and operators in the event that a package for any product is damaged, whether involving hazmat or not.

V. Conclusion

Highly automated and autonomous drone package delivery operations are the future of logistics and will revolutionize the way critical goods and supplies are delivered to millions of Americans. Commercial drone delivery operations also have the potential to significantly improve safety in hazmat supply chains. However, the current regulatory framework hinders realization of these significant safety and efficiency benefits that these operations can bring to hazmat supply chains and the American public more broadly. We urge PHMSA to use this rulemaking as an opportunity to modernize the HMR in a way that reflects the lower risk profile and unique nature of drone delivery operations. The HMR should be revised to reduce or eliminate unnecessary regulatory burdens which do not enhance safety and inhibit the public benefits of automated and autonomous drone delivery operations.

Thank you again for the opportunity to provide input on this important matter. We look forward to working with PHMSA and other agencies to reduce red tape and unnecessary regulatory burdens on the commercial drone industry and unlock the enormous benefits of large-scale commercial drone operations for all Americans.

Signed:

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