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**U.S. Department of Transportation
Docket Management System, Docket Operations
West Building Ground Floor, Room W12-140,
1200 New Jersey Ave., SE
Washington, DC 20590**

Subject: Amendment to Exemption 18162 to support operations with type certification candidate aircraft

References:

1. FAA Exemption No. 18162B, dated April 29, 2021; Regulatory Docket No. FAA-2018-0835
2. Wing petition for exemption dated August 31, 2018; Regulatory Docket No. FAA-2018-0835
3. FAA Policy "Type Certification of Certain Unmanned Aircraft Systems", Vol. 85, No. 182 Federal Register, dated September 18, 2020
4. Wing petition for Amendment to Exemption 18163 dated March 27, 2021; Regulatory Docket No. FAA-2018-0835
5. Public Law 115–254 (codified at 49 U.S.C. 44807)

To Whom It May Concern:

Wing was recently informed of delays in the FAA's certification basis for Durability & Reliability Type Certification of low risk sUAS. To support our continued operations in Virginia and future expansion, we are requesting amendment to the 49 U.S.C. 44807-based exemption (18162B) to accommodate the type design configuration and are providing substantiation materials and previously FAA accepted manuals in support of this request. Timely grant of this amendment will allow Wing to continue commercial delivery operations while the FAA completes the certification basis activities for Wing and other low-risk sUAS Type Certification applicants.

Pursuant to 14 C.F.R. Part 11, Wing Aviation LLC ("Wing") applies for an amendment to exemption 18162B regarding Federal Aviation Regulations ("FARs") in order to incorporate an additional variant of its Hummingbird aircraft in its UAS delivery services under 14 CFR Part 135 ("Part 135"). The proposed amendment to include the additional variant are supported by the completion of demonstrations of the aircraft's durability & reliability (D&R) and Operational Suitability Demonstrations (OSD) witnessed by members of the FAA Aircraft Certification (ACO) office, FAA Manufacturing Inspection District Office (MIDO) and FAA Flight Standards Aircraft Evaluation Division (AED) offices. The additional variant will allow Wing to continue to serve

households in its existing operations, and will support future service opportunities outlined in the separate exemption amendment to 18163 submitted on March 27, 2021.

Wing is seeking amendment to the conditions and limitations in Exemption 18162. Wing is not seeking new regulatory relief to existing regulations.

Amendment requested:

Regulation	No additional
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Modification requested:

Condition & Limitations	1, 2, 3, 11
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I. Background

Wing aims to offer drone delivery as a safer, faster, and cleaner alternative to delivery by road. Today, our communities rely on delivery for everyday basics like food, medication, and household supplies. Likewise, delivery is a lifeline for local businesses. As part of a multimodal transport system, drone delivery can help to better connect communities, support local businesses, and offer a sustainable and contactless alternative to transport by road.¹

Since completing full Air Carrier certification in October 2019, Wing has safely provided ongoing direct-to-home and on-demand delivery service to residents in Christiansburg, VA. During COVID-19, our service has helped residents to obtain essential goods; enabled local businesses to continue operating through restrictions; and demonstrated how UAS can help to improve safety and sustainability in transportation. For example, we continue to deliver a range of goods to meet the needs of local families, from Walgreens health products to school library books.² A Virginian business delivered 25 percent of its total sales via Wing during the early phase of the pandemic. Globally, use of our service grew 500 percent in 2020.

To date, Wing has completed several thousand deliveries directly to customers' homes across Christiansburg. Over these thousands of deliveries, there have been **zero accidents, incidents, or other significant events affecting the safety of Wing's operations**. Based on these results and experiences, Wing is seeking allowances to use substantially similar derivative aircraft that have completed compliance testing to continue to offer service.

Wing has successfully employed this same aircraft variant intended for Type Certification in our commercial operations in Australia where we have conducted tens of thousands of deliveries to thousands of customers over the past year. Wing now seeks to bring this same aircraft into its US commercial operations.

II. Discussion

¹ Virginia Tech, *Measuring the Effects of Drone Delivery in the United States*, 2020.

² *New York Times*, 'Kept out of the library, a school district tries summer reading by drone', 2020.



1. Additional aircraft variant

The requested aircraft variant has completed the FAA's process for demonstrating the durability and reliability of aircraft using a standardized aircraft Type Certification process (reference 3). These tests have been successfully completed and the UA has been shown to be durable and reliable for its intended operations.

The following Conditions and Limitations in the exemption repeat specific references to make/model/series-specific information that are already contained in the FAA approved manuals and operations specifications for air carriers, including Wing. We would suggest making these references less specific in the exemption itself, in favor of controlling these aspects within the normal air carrier certification process.

Reference aircraft designation information:

	Candidate aircraft variant	Current aircraft variant
Make	Wing Aviation LLC	Wing Aviation LLC
Model	Hummingbird	Hummingbird V2
Series	7000	7000
Variant	7000W-A	7000-A

Reference Exemption 18162 Conditions & Limitations: 1, 2, 3, 11.

C. Requested modifications

Regulation and/or Exemption	C&L	Modification Requested
18162B	1	Update to include new variant.
18162B	2, 11	Remove aircraft designator information that does not contribute to the meaning of the section.
18162B	3	Remove specific manual part number references. Note: Provides result analogous to 14 CFR 91.9(a) and 91.403(c) which are not waived or exempted for Wing's operations. Thus requiring the operator to use the FAA approved or accepted flight and maintenance manual information for that aircraft.

Wing is also submitting the following proprietary documents in support of this Petition for Exemption amendment:

- 102900 OSD flight test report
- 102840 UAS Flight Manual (7000W-A)



- 990-04140 UAS Maintenance Manual (Volumes 1, 2, 3) (7000W-A)

These documents are being submitted on a confidential basis under separate cover pursuant to 14 C.F.R. §11.35(b), as the documents contain confidential commercial and proprietary information that Wing has not and will not share with others. The information contained in this material is not generally available to the public and is protected from release under the Freedom of Information Act, 5 U.S.C. § 552 et seq.

IV. Public interest

Wing provides a valuable delivery service that has helped to support American communities through the COVID-19 pandemic. Our service has helped residents to obtain essential goods on-demand; enabled local businesses to continue operating through restrictions; and demonstrated how UAS can help to improve safety, connectivity, and sustainability in the transportation of small goods.

Virginia Tech has released a report³ studying the economic impact of drone delivery across the United States. The university modeled the effects of drone delivery on three metropolitan areas within five years of launch, representing a cross-section of U.S. cities: Christiansburg in Virginia, Austin in Texas and Columbus in Ohio. The study found that by adopting drone delivery at scale, a single metropolitan area could experience significant social, economic, and mobility benefits. For example, in a single US metropolitan area, drone delivery could help to:

- avoid up to 294 million miles per year in avoidable road use;
- avoid up to 580 road accidents per year;
- reduce up to 113,900 tons of CO2 emissions per year;
- save residents up to 56 hours per year in avoidable travel;
- improve pharmaceutical access for 22,000 people who cannot adhere to prescription medication due to transportation challenges.

Realizing the benefits of UAS delivery depends on safe, responsible, and scalable operations. Wing has demonstrated safe operations through 19 months of continuous service, and extensive testing. Wing continues to demonstrate our commitment to responsible flying, including through an extensive community engagement program.⁴

³ Virginia Tech, *Measuring the Effects of Drone Delivery in the United States*, 2020.

⁴ Wing and Mid-Atlantic Aviation Partnership, *Community Engagement: Best Practices for Drone Operators*, 2020.



We respectfully request timely evaluation of this amendment request.

Sincerely,

Chris Jackman

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