U.S. Department
of Transportation
**Federal Aviation
Administration**

Aviation Safety

800 Independence Ave
Washington, DC 20591

September 6, 2023

Exemption No. 18339D
Regulatory Docket No. FAA-2019-0628

Mr. Eric Johan Bergesen
Director of Operations
UPS Flight Forward, Inc
311 Clark Station Rd
Suite 102
Fisherville, KY 40023

Dear Mr. Bergesen:

This letter is to inform you that the Federal Aviation Administration (FAA) has granted your petition to amend Exemption No. 18339C. This letter transmits the FAA's decision, explains the basis for the decision, and provides the revised conditions and limitations of the exemption, including the date the exemption ends.

Background

By letter dated March 13, 2023, you petitioned the FAA on behalf of UPS Flight Forward, Inc (hereinafter, "UPSFF" or "the petitioner") for an amendment to Exemption No. 18339C. That exemption from 14 CFR §§ 61.3; 91.7; 91.9(b); 91.109(a); 91.119(b) and (c); 91.121(a)(1); 91.151(b); 91.203(a)(1); 91.205(c)(2) and (4); 91.209(a)(1); 135.21(f); 135.25(a)(1) and (2); 135.63(c) and (d); 135.65(a) and (d); 135.95(a); 135.143(a); 135.149(a); 135.161(a); 135.203(b); 135.209(b); 135.243(b)(1) and (2); 135.267; 135.337(b)(1); 135.338(b)(1); 135.339(e)(3) and (4); 135.340(e)(3) and (4) allows the petitioner to conduct part 135 air carrier operations for commercial package delivery using an unmanned aircraft system (UAS).

In your petition, you request amendments to Conditions and Limitations Nos. 40, 43, 48, 58, and 63, in Exemption No. 18339C. These amendments would be consistent with the updated UPSFF Concept of Operations (CONOPS) described in the petition for the Matternet Mission Control System. In the new CONOPS, UPSFF plans to relocate its currently onsite PICs to a Remote Operations Center (ROC) in Kentucky. PICs will conduct flights physically occurring in distant locations (i.e., North Carolina, Florida, Ohio) from the ROC. UPSFF will conduct two distinct types of beyond visual line-of- sight (BVLOS) operations from the ROC: (1) using traditional VOs to observe the airspace, and (2) using a ground-based surveillance system (GBSS) that will

display potential air risks to the RPIC via an electronic display providing the RPIC with the necessary situational awareness for effective aeronautical decision making to mitigate the air risk.

You also request amendments to Condition and Limitation No. 66 and 76 in Exemption No. 18339C. These amendments would change the medical requirements for PICs, flight instructors, and check pilots from a second-class to a third-class medical certificate.

The FAA sent a Request for Information (RFI) regarding UPSFF safety risk assessment and test results for its GBSS on June 23, 2023. UPSFF responded to the requests with additional risk assessment details on July 6, 2023, and test result data on July 11, 2023.

In their petition, UPSFF stated that this amendment is in the public interest because it will permit UPSFF to continue to support the FAA's goals of fully integrating UAS into the National Airspace System (NAS) and enabling the development of safe, scalable, economically viable, and environmentally advantageous UAS operations.

The petitioner supports its request with the following information:

Unmanned Aircraft System (UAS)

Matternet M2

UPSFF explains that the Matternet M2 was the first civilian-use small UAS to achieve Type Certification (TC), and describes it as a quad-copter. According to UPSFF, the Matternet M2 uses a "self-testing" autoflight system for flight control and navigation that prohibits flight if inoperable. According to UPSFF, the Matternet M2 flies an approved, pre-determined route that is uploaded into their system along with a pre-determined geofence for the route of flight. UPSFF also indicates that the M2 contains a dual GPS system that provides redundancy should one system fail.

UPSFF states that, in addition to geo-fence safeguards, the Matternet M2 also has a Flight Termination System (FTS). According to UPSFF, if a malfunction occurs that puts the Matternet M2 outside of safe flight parameters, the FTS will automatically deploy the safety parachute. UPSFF explains that the Matternet M2 automatically determines, via its onboard fault management system, when it can no longer maintain safe flight parameters. UPSFF adds that the FTS has a dedicated battery, which ensures that parachute ejection and flight telemetry can continue in the event of primary power failure.

UPSFF elaborates that its RPIC[1] has the capability to override the automated flight system should hazards arise. UPSFF states that four maneuvers are available through the ground control station (GCS)[2]—Hold, Reverse Course, Resume, and Emergency Land. According to UPSFF,

[1] The FAA uses the term "PIC" instead of RPIC, the term used by the petitioner. See Table 1 for details regarding positions and duties, including the terminology used.Table 1
[2] The FAA uses the term "pilot interface" instead of GCS, the term used by the petitioner.

safety zones[3] at various positions on a route can also be utilized with varying capabilities based on the GCS. Furthermore, as explained by UPSFF, the RPIC's decision to maneuver is based on information received from either a VO or the GBSS display alert and the flight path of the intruder aircraft, based on the system being utilized, and the RPIC's aeronautical decision making. UPSFF asserts that these maneuver options were vetted during three years of ongoing operations and were further validated with the GBSS during Phase 2b testing for BVLOS.

Matternet Mission Control System

The petitioner notes that Matternet has made technological and software improvements to its Matternet M2 UAS that will support remote operations using its mission control system.[4] UPSFF states its new CONOPS will incorporate this new Matternet mission control system into its planned ROC, and it will also update its training, enhanced systems, and procedures. UPSFF states that these additional capabilities will further enhance the safety of operations. UPSFF also states that it has already incorporated these changes into its configuration control document and will use the Matternet M2 with this new capability either under Exemption No. 18338, as amended, issued under Title 49 U.S.C. § 44807[5] or under the TC with an airworthiness certificate.

UPSFF states that within its ROC there will be multiple RPIC stations and a ROC supervisor station, all within a sterile and secure operating area. According to UPSFF, each of the stations will have the mission control technology described in the Matternet Unmanned Aircraft Flight Manual (UFM) and UPSFF ROC CONOPS.

Ground-Based Surveillance System

UPSFF desires to commence BVLOS part 135 operations utilizing the Matternet M2 and the Raytheon "Skylar" GBSS. UPSFF explains that the GBSS and associated display tool will replace the use of VOs for its BVLOS operations.

UPSFF explains that the GBSS will display potential air risks to the RPIC via an electronic display. UPSFF asserts that this display will provide the RPIC with the necessary situational awareness for effective aeronautical decision making to mitigate the air risk. According to UPSFF, through data collected during its testing of its systems and procedures, it has found that the electronic systems provide an equal or greater level of safety to the operation when compared to the use of a VO.

[3] The FAA uses the term "alternate landing areas" instead of safety zones, the term used by the petitioner.
[4] The petitioner references Matternet, Inc.'s change request, CR-M2-SEP2021, Revision 1, dated September 29, 2021, submitted on October 1, 2021, for the UPS Flight Forward, Inc. § 44807 exemption. According to the petitioner, Matternet received FAA approval of this change request for its Matternet Mission Control System, as well as technological and software improvements. The FAA approved the change request on October 28, 2021.
[5] The latest version of the petitioner's § 44807 exemption is Exemption No. 18338E, which was published concurrently with this exemption.

UPSFF refers to industry standards in its account of development work with Raytheon and note that Appendix A of RTCA standard DO-381[6] was used for volume calculations to the extent practical for low altitude operations with small UA. Also, the "inside-out" approach per section A.1.2 was used, insofar as small UA routes are predetermined and do not change. According to UPSFF, deviations from DO-381 and RTCA standard DO-365[7] are the result of the difference in low altitude small UA vehicles, mission requirements, and airspace assessment.

UPSFF elaborates that its approach with Raytheon to achieving operations has consisted of three phases of testing. UPSFF states that, working with Raytheon, it has completed Phase 1, Phase 2a, and Phase 2b testing. According to UPSFF, Phase 1 testing focused on testing the relevant DO-381 requirements for the GBSS and testing the GBSS to the operational area. UPSFF asserts that results confirmed that the GBSS can sufficiently detect and track intruder aircraft with positional accuracy performance compliant to DO-381, adding that its results showed track continuity and minimal false tracks. According to UPSFF, Phase 2a focused on integration of GBSS into the operational environment with the UAS and RPIC utilizing test cards and collection of data and timing analysis. According to UPSFF, Phase 2a confirmed overall integration of the GBSS with the RPIC's display, tested communication procedures, and demonstrated the usefulness of the collective system. UPSFF states, in addition, that as part of the findings from Phase 2a, several recommendations were made, including to establish a Phase 2b that would verify enhancements such as reducing the UA altitude, removal of a "radar observer," and completing an airspace analysis.

UPSFF states that Phase 2b tested and measured the effectiveness of maneuvers associated with the collision avoidance strategy with the RPIC utilizing the management display tool. UPSFF states that data from this phase is being compiled and will be submitted in support of this petition.

UAS Operating Parameters

CONOPS

UPSFF states that it will conduct its flight operations from the ROC, which will be located in Fisherville, KY. From the ROC, the RPICs will operate flights in distant locations in North Carolina, Florida, and Ohio, and potentially other states. Under USPFF's current operations, the RPIC is located at one takeoff/landing point and the VO is located at the other, with additional VOs located along the route if needed. However, in the new CONOPS, the RPIC is located remotely at the ROC and, in situations where VOs will be involved in the operation, two VOs will be used, one at each takeoff/landing point. In UPSFF's example, a route that currently requires two VOs and one RPIC will have one remotely sited RPIC and three VOs onsite when

[6] RTCA, Inc. "Minimum Operational Performance Standards (MOPS) for Ground Based Surveillance Systems (GBSS) for Traffic Surveillance." RTCA DO-381. March 26, 2020.
[7] RTCA, Inc. "Minimum Operational Performance Standards MOPS for Detect and Avoid (DAA) Systems." RTCA DO-365A. March 20, 2020.

the RPIC is relocated to the ROC. UPSFF states that this ratio modification will require amendment of its existing RPIC letters of authorization (LOA).

During its planned GBSS operations, UPSFF will use personnel called "ground support crewmembers" (GSC) to perform duties currently performed by the VOs. According to UPSFF, their GSCs will essentially perform all the duties formerly accomplished by a VO except for the monitoring for air hazards. UPSFF also states that its GSCs will preflight duties currently performed by the RPICs onsite. The petitioner states for operations using GBSS, it will not be necessary for it GSCs to scan the airspace.

UPSFF further explains that initially, operations will be UA-to-RPIC ratio of 1:1 and RPIC-to-GSC ratio of 1:2 ratio depending on routes. UPSFF states that its routes are planned at approximately 275 ft. above ground level (AGL) and within class G airspace in accordance with the existing processes and approvals. UPSFF asserts that its radar and system processes will have FAA approval, and operations will be conducted within the FAA approved conditions and limitations.

UPSFF explains that, when the GBSS is utilized for operations, collision avoidance maneuvers that the RPIC may take are triggered off the automated alerts received in the management display tool. UPSFF elaborates that the aircraft icon will display blue when a target is detected within the radar contact area, providing situational awareness to the RPIC. According to UPSFF, the aircraft icon will display white when the radar target enters the surveillance volume[8] and is projected to enter the declaration volume (DV). Then, according to UPSFF, the petitioner aircraft icon will display yellow and an audible alert of "caution, caution" when the radar target is within the DV and projected to maintain well clear. UPSFF states that the RPIC may maneuver at any time, if determined appropriate, based on their aeronautical decision-making.

UPSFF states that the aircraft icon will display red and an audible alert of "warning, warning" when the radar target is within the DV and is not projected to maintain well clear. UPSFF states that the RPIC shall then maneuver in accordance with UPSFF collision avoidance strategy. For UPSFF, "well clear" is currently defined as 250 ft. vertical separation or 2000 ft. horizontal separation.

UPSFF contends that, once approval for GBSS operations is granted, its process for conducting BVLOS flights without VOs could be repeated in other locations. USPFF states that this could be done with similar technology through an operational approval process without the need for further exemptions. UPSFF states will evaluate the results at the Villages location and request expansion to other operating areas as defined in the Operations Specifications (OpSpec).

[8] As represented by UPS FF, the surveillance volume includes the area where radar targets are tracked. The declaration volume is the area where alerts are generated.

Command and Control

UPSFF states that its RPICs will have communication with the crewmembers when required while the crewmembers are performing duties in the operations. According to UPSFF, all required communication will be in real time and from a reliable software communication system.

UPSFF states that its ROC network was designed by UPS Global Network Services professionals to provide the redundancy, reliability, separation from UPS systems, connectivity, and bandwidth to safely and successfully complete remote, BVLOS Flights from the ROC. UPSFF states that the ROC network will feature a fiber primary circuit, cable broadband circuit and cellular tertiary for redundancy.

UPSFF states that its crewmember communications utilize cellular data/voice networks used for primary and secondary communications. According to UPSFF, it will use different network providers (such as ATT, Verizon, and T-Mobile) as primary and secondary based on its operational area coverage analysis.

In addition, UPSFF states that different hardware devices will be utilized—iPhone, Android, and Zello for primary communications, and iPhone (Matternet GCS) Zoom for secondary communications. UPSFF states that its crewmembers will log on both devices to ensure a seamless transaction. According to UPSFF, Zello, a push-to-talk (PTT) app, allows the crewmembers to converse in real-time and communicate by using a phone like a walkie talkie. UPSFF adds that Zello has a 99.9% historical uptime for the communication platform. According to UPSFF, each crewmember in the operation will have a headset and PTT hardware enabling enhanced user interface.

UPSFF states that, in case of loss of C2 link due to a hard failure of MATE, the system's main flight management computer, lasting for a predetermined duration, its UA will proceed to the nearest safety zone, and then directly to an alternate landing at the nearest safety zone. According to UPSFF, its crewmembers will follow QRH[9] procedures for "Vehicle Disconnected - Inflight."

UPSFF states that, in the case of mission control failure, its ROC RPIC will transfer the UA to the backup GCS and attempt to reconnect or land using the GCS. According to UPSFF, its crewmembers will follow QRH procedures for "mission control failure."

UPSFF states that, in case of loss of line power per the ROC in flight, the ROC RPIC will follow QRH procedures for "loss of line power ROC in flight."

Route Planning and Development

UPSFF states that it wishes to commence BVLOS part 135 operations utilizing the Matternet M2 and a GBSS coupled to a suite of situational awareness tools, beginning with its initial request

[9] This refers to "UPS Flight Forward Part 135 Operations Matternet M2 Remote Operations Center Quick Reference Handbook." See Appendix A.

for validation in the vicinity of The Villages, FL. UPSFF states its intent and desire to be able to repeat this GBSS process at other operating locations with the appropriate FAA operational approvals.

UPSFF also states that it has an FAA-accepted route planning process that ensures ground and air risks are acceptable, and that routes are developed by UPSFF in accordance with this process. According to UPSFF, this route planning process ensures that it can develop pre-planned routes to mitigate flight over people and moving vehicles. According to UPSFF, during the route planning process, multiple factors are considered for evaluation, including operating distance to airports, identification of emergency landing sites, military training routes, airspace designation, and helicopter operations. UPSFF states that these preprogrammed routes are not accessible by crewmembers to alter. In addition, UPSFF states that the geofence on each route will ensure the small UA stays on the preprogrammed route. UPSFF also notes that the FTS will activate if the geofence is compromised.

UPSFF also states that its Safety Management System (SMS) procedures identify hazards and appropriate mitigation solutions to ensure an acceptable level of risk for the organization. Finally, UPSFF notes that its SMS manual, which details UPSFF SMS processes and procedures, has been approved by the FAA.

UPSFF also notes that it submitted an SMS program voluntarily and is the first UAS part 135 air carrier to have an FAA-accepted program. UPSFF asserts that the reliability of the Matternet M2 and UPSFF operational experience achieve a level of safety equivalent to the level of safety provided under regulations for which relief was granted. Finally, UPSFF notes that the operations described are subject to UPSFF air carrier approved and accepted manuals and the operations specifications (OpSpecs) as well as conditions and limitations in the current Exemption Nos. 18339 and 18338.

UPSFF states that its combined operational enhancements and updated training program will ensure that the addition of remote operations utilizing Matternet mission control will not adversely affect safety, nor will the removal of VOs from its BVLOS operations as described above.

UPSFF requests the following relief related to its route planning and development:

Exemption No. 18399C Condition and Limitation No. 48

UPSFF requests modification of Condition and Limitation No. 48 of Exemption No. 18339C. UPSFF states that Condition and Limitation No. 48 provides the following: “The operator must have a VO plan. The plan must provide:

A. Sufficient VOs are used to identify any non-participating aircraft prior to their entry into the planned operational area. Sufficient VOs is defined as the minimum number of VOs required to continuously observe at least a 2-statute mile radius or airspace surrounding the UA in flight; and

B. VOs are physically located such that the remote RPIC receives sufficient notice to ensure the UA remains well clear of all other aircraft."

UPSFF seeks modification to recognize that no VOs will be required in certain operations if its petition for BVLOS without VOs is adjudicated and successful validation is completed. This condition and limitation required that UPSFF have a VO plan. UPSFF suggests that subparagraphs (a) and (b) could be moved into to their proposed revision of Condition and Limitation No. 43. UPSFF asserts that, as this change is procedural and only applicable if its petition is granted, there will be no adverse effect on safety.

Airspace and Operating Environment

UPSFF states that its operations are conducted under visual flight rules (VFR) and within any greater restrictive limitations documented in manuals, waivers or exemptions.

UPSFF states that it has a part 135 delivery network, which operates the Matternet M2 to conduct package deliveries in approved operating areas defined in the OpSpec B050. According to UPSFF, OpSpec A055 authorizes carriage of hazardous material. UPSFF notes, in addition, that it has successfully completed over 10,000 flights.

UAS Pilot in Command (PIC) and Flight Personnel

Positions and Duties

UPSFF states that its RPICs will command the UA assigned to them in Mission Control at the ROC. According to UPSFF, the RPICs are responsible for the safe operation of their assigned UA, and for ensuring that preflight inspections have been completed by onsite personnel (VO or GSC).

UPSFF states that ROC supervisors may supervise multiple ROC RPICs and assist them as needed. The ROC RPIC supervisor's duties and responsibilities are described in UPSFF's CONOPS and GOM.

UPSFF states that VOs are responsible for communicating any new air or ground hazard in the operational area to the ROC RPIC.

According to UPSFF, its UAS Technicians ensure the airworthiness release or appropriate aircraft log entries are executed in accordance with General Maintenance Manual (GMM) procedures and perform repairs and maintenance on the aircraft if specifically trained and authorized to perform that maintenance function.

UPSFF states that, because its current conditions and limitations restrict the preflight duty to either the RPIC or the VO, the addition of the GSC position, which it is introducing, will be necessary to permit BVLOS operations without a VO. UPSFF notes that crewmembers will still be needed to interface with the aircraft and coordinate with the RPIC. UPSFF elaborates that, in essence, a GSC will perform all the duties formerly accomplished by a VO, except for the

monitoring for air hazards, which will be accomplished by the GBSS and management display tool. UPSFF also states that the GCS will perform preflight.

Table 1 – Duty Positions, Functions, and Qualifications, as Explained by UPSFF in their Petition

Duty Position	Functions	Qualifications
Remote Pilot in Command (RPIC)*	Verify the airworthiness of the aircraft and that there is sufficient operating time available to complete the scheduled flight or series of flights before the next required maintenance. Ensure that the aircraft is not operated in a careless or reckless manner to endanger life or property during flight or while on the ground.	• Possess a valid Remote Pilot Certificate issued in accordance with part 107. • Possess a current third-class medical certificate. • Successfully complete all initial and recurrent training requirements before acting as an RPIC in part 135 operations.
ROC RPIC Supervisor	Act as the primary point of contact between the RPIC and the Director of Operations during ROC operations.	• Possess a valid Commercial Pilot Certificate or higher, and a valid Remote Pilot Certificate issued in accordance with part 107. • Possess a current third-class medical certificate. • Complete the appropriate training phases to act as RPIC for the aircraft, including recurrent training.
Visual Observer (VOs)	Complete checklist duties and responsibilities as required. Prior to commencement of a flight, be thoroughly familiar with the route of flight and surroundings. Maintain effective communication with the RPIC. Monitoring assigned airspace for air hazards, and alert the RPIC when at any time, a hazard is identified that could compromise the safety of flight.	• Possess a valid Remote Pilot Certificate issued in accordance with part 107. • Successfully complete the UPSFF training program designed to meet the knowledge requirements of a VO.
Ground Support Crewmember (GSC) (for GBSS operations)	Complete checklist duties and responsibilities as required. Prior to commencement of a flight, be thoroughly familiar with the route of flight and surroundings. Maintain effective communication with the RPIC. Alert the RPIC when at any time, a hazard is identified that could compromise the safety of flight.	• Possess a valid Remote Pilot Certificate issued in accordance with part 107. • Successfully complete the UPSFF training program designed to meet the knowledge requirements of a GSC.
UAS Check Pilot	Be knowledgeable of applicable regulations, company policies, aircraft operating procedures, checklists, Airman Certification Standards (ACS), and other safe operating practices. Conduct pilot training qualification checks.	• Possess a valid Remote Pilot Certificate.

Duty Position	Functions	Qualifications
		• Hold at least a third-class medical certificate when serving as required crewmember.[10]
UAS Technicians**	Ensure the airworthiness release or appropriate aircraft log entries are executed in accordance with General Maintenance Manual (GMM) procedures. Perform repairs and maintenance on the aircraft if specifically trained and authorized to perform that maintenance function.	• Hold a valid FAA Repairman Certificate or FAA Mechanic Certificate with airframe and powerplant ratings. • Complete the UPSFF formal classroom training in accordance with the UPSFF GMM.

* In this exemption, the FAA term "PIC" will be used for "RPIC."
** In this exemption, the FAA term "Repairman" will be used for "UAS Technician."

UPSFF requests the following relief related to the positions and duties of the PIC and flight crew:

Exemption No. 18339C Condition and Limitation No. 40

UPSFF requests modification of Condition and Limitation No. 40 of Exemption No. 18339C. UPSFF states that Condition and Limitation No. 40 requires, in part, that "Prior to each flight, the RPIC must ensure a pre-flight inspection was completed and determine that the UA is in a condition for safe operation. The pre-flight inspection must be conducted by the RPIC or by the VO. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment."

UPSFF requests to modify Condition and Limitation No. 40 by replacing preflight "must be conducted by RPIC or by the VO" with "must be conducted by a crewmember qualified in accordance with UPSFF's approved training program." UPSFF asserts that the proposed modification provides an equivalent level safety because the training for crewmembers to conduct a preflight has been successfully accomplished over three years of operations with VOs. UPSFF notes that it is seeking to remove VOs from some of its operations, and that, additionally, the RPIC cannot physically be at the same location as the aircraft for every flight.

Exemption No. 18399C Condition and Limitation No. 43

UPSFF requests modification of Condition and Limitation No. 43 of Exemption No. 18339C. UPSFF states that Condition and Limitation No. 43 provides that "prior to beginning flight operations, the RPIC must verify that:

A. There is a VO plan that ensures sufficient VOs are available to be able to

[10] For purposes of this exemption, the term "required crewmember" does not have the same meaning as it does when required by regulation or type certificate. Under this exemption, minimum required crew is set forth in conditions and limitations, but the operator may, for example, assign additional personnel who would be required to complete training as if they are required crewmembers.

identify any non-participating aircraft prior to their entry into the planned operational area;

B. There are sufficient VOs available as required by the plan;
C. All required VOs are briefed and are aware of the operational requirements of the VO plan to include:
    i. Designated positions, physical locations, responsibilities, and crew resource management;
    ii. Planned flight operating area;
    iii. Takeoff and landing areas;
    iv. Ground risks;
    v. Alternate landing sites;
    vi. Verification of geo-fence boundaries;
    vii. Verification of flight profile and course;
    viii. Procedures for avoidance of other aircraft; and
D. The PIC is familiar with all the content from the VO briefing."

UPSFF states that it seeks modification of this condition and limitation because no VOs will be required in certain operations if its petition for BVLOS without VOs is adjudicated and successful validation is completed. UPSFF suggests that the modification could be as simple as "prior to beginning flight operations, the RPIC must verify for operations requiring the use of VOs that: …." UPSFF asserts that, as this change is procedural and only applicable if the petition is granted, there will be no adverse effect on safety.

Exemption No. 18399C Condition and Limitation No. 58

UPSFF requests modification of Condition and Limitation No. 58 of Exemption No. 18339C. UPSFF states that Condition and Limitation No. 58 provides that "VOs must continuously scan their area(s) of responsibility and immediately notify the RPIC whose areas of operations are affected whenever they observe:

a. A new obstruction not plotted on the obstruction map or obstruction database;
b. The erection of an obstruction that begins during the course of a shift;
c. Any other obstruction, hazard, or non-participating conflicting air traffic that may pose a risk to the operation;
d. Any open-air assembles of people, or
e. Any weather condition that causes the VO to be unable to view the assigned airspace, new or existing obstructions, hazards."

UPSFF explains that they seek to amend Condition and Limitation No. 58 because no VOs will be required in certain operations if their petition for BVLOS operations without VOs is granted and successful validation is completed. UPSFF proposes adding language to Condition and Limitation No. 58 that clarifies that this Condition and Limitation applies when operations require the use of VOs. UPSFF asserts that safety will not be adversely affected by this proposed change because it is procedural and only applicable if their petition is granted.

Training

UPSFF specifies that crewmembers in the operation may perform duties that they are trained and qualified to perform.

UPSFF states that its ROC RPICs will be qualified in accordance with UPSFF's approved training program. UPSFF adds that RPICs will be trained and complete an internal UPSFF Radar BVLOS qualification focusing on monitoring and responding to the management tool display.

UPSFF states that the ROC supervisor must have a FAA Commercial Pilot Certificate or higher and a valid Remote Pilot Certificate issued in accordance with part 107. UPSFF states that the ROC supervisor will be required to successfully complete UPSFF UAS Flight Instructor curriculum.

UPSFF states that VOs, when required, must possess a valid Remote Pilot Certificate issued in accordance with part 107 and successfully complete its part 135 training program designed to meet the knowledge requirements of a VO.

UPSFF states that its UAS technicians must hold a valid FAA Repairman Certificate or FAA Mechanic Certificate with airframe and powerplant ratings and complete the UPSFF formal classroom training in accordance with the UPSFF GMM.

UPSFF states that its GSC will be required to possess a part 107 Remote Pilot Certificate and be qualified in accordance with UPSFF's approved training program. UPSFF adds that the GSC will be trained and qualified to perform aircraft preflight duties as well as payload loading and aircraft handling, as described in the UPSFF GOM. UPSFF further asserts that an LOA will be required for the GSC crewmembers authorizing them to conduct a preflight.

UPSFF states that its crewmembers will be trained according to UPSFF's part 135 training program to monitor and respond to the management display tool utilizing the standard situational/conditional responses.

UPSFF requests the following relief related to the training of its personnel:

Exemption No. 18399C Condition and Limitation No. 63

UPSFF requests modification of Condition and Limitation No. 63 of Exemption No. 18339C. UPSFF states that this Condition and Limitation requires that, "with vision that is unaided by any device, other than corrective lenses or eyeglasses, each VO must be able to see all potential hazards without hesitation."

UPSFF seeks to amend Condition and Limitation No. 63 to reflect that no VOs will be required in certain operations if its petition for BVLOS operations without VOs is adjudicated and validation is successfully completed. UPSFF recommends adding language to the Condition and Limitation to clarify that this Condition and Limitation applies when operations require the use

of VOs. UPSFF asserts that there will be no adverse impact on safety because this change is procedural and only applicable if the petition is granted.

Exemption No. 18399C Condition and Limitation Nos. 66 and 76

UPSFF requests modification of Condition and Limitation Nos. 66 and 76 of Exemption No. 18339C to require UPSFF check pilots and PICs to hold a third-class medical certificate rather than a second-class medical certificate. UPSFF notes that the regulations define very few differences between these classes of medical certificates other than visual acuity requirements. Additionally, according to UPSFF, pilots can operate much larger aircraft under the BasicMed requirements. UPSFF asserts that the Matternet M2 aircraft is a small UAS operating a predefined route with limited pilot intervention selections. UPSFF asserts that a third-class medical certificate requirement would provide an equivalent level of safety to that of a second-class medical certificate for its types of operations. UPSFF states that Condition and Limitation No. 66 and 76 provide the following:

Condition and Limitation No. 66 requires that check pilots must hold at least a second-class medical certificate when serving as a required crewmember. A copy of this certificate must be kept in the pilot's records.

Condition and Limitation No. 76 requires that each PIC is required to hold at least a second-class medical certificate. A copy of this certificate must be kept in the pilot's records.

Public Interest

UPSFF states that UAS delivery depends on safe, responsible, and scalable operations, and asserts that UPSFF has demonstrated safe operations through more than three years of ongoing part 135 air carrier service, and extensive testing. UPSFF states that it continues to demonstrate its commitment to responsible flying, including extensive community engagement. UPSFF asserts that it values its participation in the Partnership for Safety Program and the BEYOND program sharing significant practical experience and data regarding small UAS air carrier operations. UPSFF asserts that it is committed to assisting the FAA in understanding the risks and appropriate risk mitigation measures, which then will further the FAA's policy decisions that could result in rulemaking decisions. Finally, UPSFF asserts that it is committed to the validation and advancement of new technologies, alongside the FAA, to advance the UAS industry.

UPSFF contends that economic benefits include the creation of jobs in support of its operations as well as supporting local businesses by providing logistical services from established enterprises to consumers. UPSFF states that its same-day delivery reduces exposure for high-risk demographics and reduces transit times. UPSFF notes that its zero emissions operations are environmentally friendly, reducing the emissions profile of our air and ground operations. In addition, according to UPSFF, its aircraft reduces the noise of traditional aircraft and ground courier operations. Finally, UPSFF asserts that drone delivery has the potential to reduce accidents and miles driven as well as servicing various customers, including rural and hard to reach areas.

Therefore, according to UPSFF, this amendment is in the public interest, as it will permit UPSFF to continue to support the FAA's goals of fully integrating UAS into the NAS, further developing certificated air carrier services that normalize safe, scalable, economically viable, and environmentally advantageous UAS operations.

Comments and Responses

A summary of the petition was published in the Federal Register on May 25, 2023.[11] The FAA received a total of 13 comments. One comment was submitted in duplicate. One comment was a request for an extension of the comment period. Of the remaining substantive comments received, 7 were in favor of granting the petition and 3 were opposed. One further comment was primarily opposed to the petition, but did note a point of agreement.

Comments in Support of the Petition

Comments supporting the petitioner's requests were received from the North Carolina Department of Transportation (NCDOT), AeroX, the Association for Uncrewed Vehicle Systems International (AUVSI), DroneUp, the General Aviation Manufacturers Association (GAMA), ElSight, and the Small UAV Coalition. Overall, these commenters expressed support for the safe and efficient integration and expansion of the role of UAS operations in the National Airspace System (NAS). Additionally, Transport Workers Union (TWU)[12] also supported one part of the petition as noted below.

The NCDOT stated that the petitioner's participation in NCDOT's BEYOND program and FAA's Partnership for Safety Plan (PSP) has contributed to many industry firsts, with a focus on improving safety, efficiency, and operational excellence. NCDOT also stated that these contributions have enabled the FAA to collaborate with industry to pave a path forward for future part 135 package delivery exemptions and advance rulemaking efforts. Therefore, it broadly supports this exemption.

AeroX stated it supports the petition for remote operations, and that, while the ROC concept is novel in civilian applications, it is well-established and proven within the U.S. Department of Defense, where it has been effectively used for UAS operations for several years. It also supports the petitioner's desire to commence BVLOS part 135 operations using the Matternet M2 and their GBSS coupled with situational awareness tools, and their intention to replicate this GBSS process at other locations with appropriate FAA approval. It states these operations will help inform the FAA rulemaking process, including providing feedback requested by the FAA. It is also in favor of allowing for a check pilot or a PIC operating under part 135 or Part 91 to hold a current third-class medical certificate, instead of a second-class medical certificate, aligning with the unique nature of UAS operations.

[11] 88 FR 33959.
[12] TWU's other comments were in opposition and are addressed below.

AUVSI supports this petition, and stated that, as more flights occur, performance-based mitigations and training will allow for novel solutions to traditional risk conversations. AUVSI added that different combinations of aircraft, procedures, and sensors will be used to increase overall safety, both in the NAS and on the ground below. Operations will expand from low-complexity airspace and low population density areas to more urban environments. This will happen as companies like the petitioner's prove not only the safety of drones, but their value and low resource draw on air traffic control. According to AUVSI, systems like the Matternet M2 have been demonstrated to operate in the NAS and will increase the overall safety of the NAS. Therefore, AUVSI concludes, granting this exemption is in the public interest.

DroneUp contends that as more operations are looked at based on standardization and similarity of risk, the more Americans will benefit from drones and their expanded uses. DroneUp supports the petition and states that ROCs present the opportunity to safely grow delivery operations with dedicated knowledgeable teams and to open the service to more locations. Allowing PICs to hold a third-class medical certificate appropriately weighs the potential risks presented in these delivery operations using type certified platforms. Like AVUSI, DroneUp asserted that the petitioner's experience in the NAS will increase the overall safety of the NAS, and that granting this exemption is in the public interest.

GAMA supports the petition and states that while the petitioner's detect and avoid (DAA) technology is not DAA as defined in RTCA standard DO-365 and the associated FAA Technical Standard Order-C211, they welcome the petitioner's steps to advance the FAA's and industry's experience with DAA with the objective of informing the future expanded use of DAA technologies to assist with the integration of UAS in the NAS. GAMA contends that sensor technologies are now at a safe level of maturity to enable the expansion of UAS operational envelopes when UAS aircraft are appropriately equipped or supported by ground services, and that this expansion is critical to survival of the nascent UAS industry and to maintaining the position of the U.S. as a global leader in uncrewed aircraft technology. GAMA also acknowledges the importance of incremental implementation when enabling new entrance into the NAS and believes that this collaborative effort between the FAA and industry aligns with the principles of the crawl-walk-run approach, promoting responsible integration of emerging technologies while ensuring safety and efficiency. According to GAMA, more widely enabling BVLOS operations by facilitating the use of advanced technologies is critical to unlocking the full potential and benefits of UAS operations. Finally, GAMA recognizes the need to mitigate any potential adverse effects on the NAS and states that the FAA's comprehensive evaluation program will ensure that safety, reliability, and efficiency of the NAS is not compromised.

ElSight, a C2 link connectivity hardware/software provider, supports the proposed exemption and encourages specific communication practices to ensure the safety and reliability of communication links during BVLOS commercial operations. ElSight believes the granting of the exemption by the FAA will benefit the commercial UAS market and represents a significant milestone on the way to scalable commercial UAS operations, including BVLOS services in the United States under an FAA type certificate. ElSight states that C2 communication links should utilize all available network infrastructures. This optimizes safety and ensures the greatest possible connectivity between the operator and the UA. ElSight also recommends that any

communication platform should demonstrate reliability over time, long distances, and harsh environmental conditions to provide for C2 stability. Finally, ElSight encourages that any communication hardware or software should be able to operate using different IP links. According to ElSight, this enables the C2 equipment to better conform to regulatory requirements and remain viable as network infrastructure technologies evolve.

The Small UAV Coalition supports the use of ground-based surveillance of aircraft in the vicinity in lieu of VOs, as VOs are not practical over long-range routes. They also stated that detect and avoid (DAA) technology, not VOs, is what the drone industry needs to safely and efficiently operate drones BVLOS at scale in a variety of operational environments. The Small UAV Coalition contends that the petition outlines safety redundancies that will ensure the safety, security, and reliability of communications between the remote pilot and the drone.

Finally, although TWU generally opposed the petitioner's requests, it did support the granting of relief to the petitioner from 14 CFR § 91.119(b), which requires an operator to remain at least 1,000 ft. above the highest obstacle in congested airspace. TWU stated that they believe that UAS should be limited to a maximum of 1000 ft. above the highest obstacle. TWU urged that operating at an altitude as high as fixed wing aircraft is not the best course of action. According to TWU, this will ensure that fixed wing aircraft and UA are not operated at the same altitude outside of the airport environment.

General Comments Opposing the Petition

Insufficient Information Provided

In its comments, the Air Line Pilots Association, International (ALPA) stated it does not believe there has been sufficient information furnished to the public to determine whether the petitioner has provided the necessary risk mitigations for an equivalent level of safety. ALPA noted that the GBSS testing results described in the request were submitted separately under confidential cover, and that no standards were referenced to reinforce these claims. By not providing this safety-critical information, ALPA is unaware if the petitioner has adequately addressed all of the safety-critical operations issues, such as PIC and VO training and education, GPS accuracies and redundancy, DAA systems, minimum power reserve requirements, and flyaway protections. ALPA's concern is that, without this and other safety critical information, and without the FAA certifying the GBSS system to some recognized standard of safety, the proposed BVLOS operations may not be conducted safely.

The National Agricultural Aviation Association (NAAA) also expressed its concern regarding what it described a lack of access to information and stated that is unable to substantiate the claimed efficacy or suitability of the petitioner's GBSS relative to its use of VOs for operations in the vicinity of manned aerial application operations.

Response

For this exemption, the FAA reviewed all of the materials submitted by the petitioner, including proprietary data. The FAA has also reviewed and approved UPSFF's part 135 training program,

which covers both PIC as well as GSC and VO training, as required by 14 CFR § 135.323(a)(1).[13]

The FAA agrees that it is important to verify the accuracy and integrity of the GPS prior to flight, which was also noted in the comments. The FAA requires that the petitioner comply with Condition and Limitation No. 50, which states that prior to each flight, the operator must consult advisory and warning publications or programs for any GPS availability or quality issues and confirm that GPS is expected to be available throughout the intended operation with acceptable performance. It must also consider the effect of degraded GPS inputs induced by adjacent structures and implement appropriate mitigations.

In response to comments concerning safety-critical operations issues related to DAA, the FAA has considered the petitioner's planned use of its GBSS and associated display tool to enable the removal of VOs. The petitioner's GBSS and associated display tool will be evaluated and the operational implementation of the system validated by the FAA prior to implementation.[14] The FAA is imposing a number of Conditions and Limitations in this exemption to ensure that the level of safety is maintained when the petitioner's GBSS is used operationally as part of a DAA system. Condition and Limitation No. 30 requires the operator to prepare, and submit to the FAA for acceptance, a collision and avoidance plan for each operational area in which the system will be used. Condition and Limitation No. 41 will require the petitioner to maintain a conflict management capability to ensure that the PIC is able to keep the UA clear of any manned aircraft and clear of other UA. Condition and Limitation No. 61 places the duty on the PIC to maintain the UA clear of manned aircraft and clear of other UA during flight. The duties of GSCs, who will perform visual surveys of the operational areas of responsibility and inform the PIC of any other hazards are stated in Condition and Limitation No 70. Finally, the FAA will require substantial reporting of data related to the operator's use of DAA and the performance and reliability of the operator's DAA system. These requirements are specified in Condition and Limitation Nos. 18, 19, 20, 21, 22, and 23.

Regarding power requirements, the petitioner's UFM describes a process which ensures that the aircraft arrives at its destination with an adequate supply of power. Condition and Limitation No. 49 outlines the FAA's additional battery supply requirements, and requires the operator to have contingency plans acceptable to the FAA in the case of battery depletion greater than anticipated. These requirements add an additional level of safety to the operation.

The FAA also considered concerns about flyaway protections that were expressed by ALPA. To ensure that the level of safety is maintained, the FAA established Condition and Limitation No. 65, which requires that the PIC immediately notify Air Traffic Control (ATC) of any flyaway or loss of control that could result in the UA no longer being contained within the operational area. This ensures that other aircraft in the vicinity of the flyaway can be alerted, to the extent possible, and can avoid any potential conflicts with the UA.

[13] Section 135.323(a)(1) states that "… [p]rior to implementation, the certificate holder must obtain initial and final FAA approval of the training program."
[14] This will be authorized by the FAA outside of this exemption.

As discussed above, the FAA is setting these conditions and limitations to minimize risk and ensure that relief from 91.113(b) does not adversely affect safety, which is also an acceptable safety determination for an exemption under part 11. The FAA has determined, based on the information it has reviewed, including proprietary documents submitted by the petitioner, that the level of risk is acceptable, so long as the safety mitigations are followed. All of these mitigations help reduce the likelihood of a UA conflicting with manned aircraft at low altitudes and arriving safely at its destination.

Comment on Broad Area of Exemption

ALPA expressed concern that the petition does not clearly identify the class of airspace where the proposed BVLOS operations will take place. ALPA contends that, without this foundational information, it could be concluded that the petitioner's BVLOS operations will be conducted in controlled airspace, i.e., near crewed commercial operations. ALPA opposes the petitioner's request for BVLOS UAS operations absent a clear authorized area in which operations will take place.

Response

The FAA considered ALPA's comment and notes that the petitioner's operations are conducted below 400 ft. AGL, as required by Condition and Limitation No. 35 of this exemption. The FAA noted that manned aircraft typically do not operate at altitudes below 400 ft. AGL except when performing takeoffs and landings in the vicinity of an airport. In addition, the FAA noted that, according to the petition, the planned operations will be conducted in Class G airspace.

The FAA does recognize, however, the need for coordination when operations are conducted in other classes of airspace, and therefore will require the petitioner to coordinate with the Administrator to operate in Class B, C, D, or E airspace. This requirement is stated in Condition and Limitation No. 9 of this exemption. Also, the FAA has established Condition and Limitation No. 52 of this exemption to require the petitioner to request a distant (D) Notice to Air Missions (NOTAM) for the actual area to be flown each day. This ensures that pilots of crewed aircraft will have advance knowledge of the petitioner's operations.

Specific Comments Opposing the Petition

Comment on Removing Visual Observers

ALPA expressed concern that the BVLOS operations performed with a UA, as proposed by the petitioner, not only have removed the pilot but now also remove the VO from maintaining visual contact. According to ALPA, this would mean that the VO would not be present to maintain visual contact with the UA, or obstacles and possible airborne intruders, and would thus create a possible hazard to other aircraft. ALPA states that the petitioner does not provide any means to mitigate the risk encouraged in low altitude operations. Because VOs help mitigate this risk, ALPA opposes removing the VO from the equation.

Response

In considering these comments, the FAA notes operations conducted under part 135 have not required VOs to maintain visual contact with the UA during flight operations, as the commenter asserted. Instead, package delivery operations conducted under part 135 have required VOs to ensure that the airspace remained clear of possible conflicts between manned aircraft and the UA.[15] According to the petition, the planned operations will use GBSS in lieu of VOs to detect manned aircraft in the vicinity of the operational area only after the FAA validates that the use of such technology would not adversely affect safety.

In considering the comment, the FAA noted that test data provided by the petitioner indicated that the electronic systems would provide an "equal or greater level of safety to the operation when compared to the use of a VO." The FAA took into account the potential benefits of a technical solution, such as GBSS, that avoid the human factor challenges of reliance on VOs for deconfliction. Such challenges would include, but not be limited to, fatigue and distraction. The FAA noted that the petitioner will use a display tool that ensures that the PIC's situational awareness is maintained, as described in its petition and supporting documents. Also, prior to conducting operations in a certain area, the operator is required to conduct a ground risk assessment in accordance with Condition and Limitation No. 32 of this exemption, which details the location of obstacles along the route, and the petitioner has created the new position of GSC which will be utilized when operating without a VO. The GSC will be trained and qualified to perform aircraft preflight duties as well as payload loading and aircraft handling, as described in the UPSFF GOM. In essence, a GSC will perform all the duties formerly accomplished by a VO except for monitoring of the airspace for air hazards, and the immediate reporting of any hazards observed to the PIC, which will be performed by the petitioner's GBSS and management display tool.

For these reasons, the FAA has determined that when GBSS is installed and utilized by the petitioner, use of VOs in the operation will not be required. This will not be detrimental to the level of safety. As risk mitigations to ensure that the level of safety is maintained, the FAA has created new conditions and limitations that the operator will be required to comply with when operating without VOs.

Condition and Limitation Nos. 18, 19, 20, 21, 22, and 23 ensure that the petitioner's operational data related to collision avoidance and its use of GBSS with its associated display tool as a DAA system will be reported to the FAA. Condition and Limitation Nos. 33, 34, 41, 61, and 70 establish the FAA's requirements for the petitioner to plan and conduct its operations, and train and utilize its personnel accordingly, to ensure that its UA remain "clear of all manned aircraft and clear of other UA."

[15] This activity is consistent with the requirement in § 91.113(b) to maintain vigilance to see and avoid other aircraft.

Comment on C2 Link Failures

ALPA also commented that, since the PIC has little or no operational control of the UAs, procedures must be put in place that ensure that the small UA remains within the defined airspace and that the hazard of other aircraft intruding on the operation is mitigated. ALPA also stresses that the C2 system needs to remain reliable to a very high level. To do this, ALPA recommends that the petitioner needs to clearly define, and the regulator must validate through data collected from the petitioner, performance requirements for the cellular data network as part of a quantitative safety case that shows the operation meets a specified target level of safety from the ROC to a different location. ALPA proposes that these performance requirements may include availability, integrity, and latency. ALPA considers this to be very important since the petitioner is seeking remote operation authority. Additionally, ALPA recommends that the petitioner provide data which shows that the actual cellular data network performance (end-to-end) meets the performance requirements defined above from the ROC. ALPA states that, because the petitioner does not provide a fail-safe solution to avoid noncooperative traffic in case of a lost link event, the risk of collision is therefore significantly increased and should be shown to be managed.

Response

The FAA agrees with the importance of maintaining a highly accurate and reliable C2 system and, as such, is requiring the petitioner to submit a communication service assessment, as outlined in Condition and Limitation No. 31, prior to conducting part 135 operations. The FAA's acceptance of the assessment, which the condition and limitation requires, ensures that the petitioner's C2 system has adequate coverage and availability, and that the petitioner has a monitoring plan to maintain connectivity and address any availability issues. The communication service assessment must also include C2 lost link procedures, including an analysis of those procedures. In addition, 14 CFR § 91.7 establishes the PIC's responsibility to ensure that, prior to each flight, the aircraft is in a condition for safe flight. This would include ensuring that the available C2 provide sufficient adequate coverage and availability for the operation.

The FAA has also established conditions and limitations in the exemption to minimize the impact of a flyaway or loss of control that has caused a loss of situational awareness or could cause a hazard to other aviation activities. First, Condition and Limitation No. 65 requires the PIC to immediately notify ATC of the event. This ensures ATC can immediately alert any aircraft in the vicinity of the flyaway, which enables these aircraft to take appropriate actions to prevent a collision. Second, the FAA's data collection requirements stated in Condition and Limitation No. 24 ensure that the petitioner reports interventions, incidents, or accidents to the FAA within 24 hours of the event. This reporting would include any occurrences of lost link or flyaway of a UA. Condition and Limitation No. 25 ensures, in addition, that a final report is provided to the FAA following the event, detailing the cause of the intervention, incident, or accident, which would include any C2 failure that contributed to a flyaway. These reporting requirements ensure that the FAA obtains data on lost link occurrences, their adverse impact (if any), and C2 failures that were found to be contributory.

Comment on Lack of DAA Safety Standards

Although outside of the scope of this petition, ALPA stated that it opposes any proposed changes to § 91.113 and opposes the transfer of see and avoid responsibilities from uncrewed aircraft to crewed aircraft, which was discussed in the BVLOS ARC report. ALPA stated that the FAA should not favor any rule to transfer collision avoidance to manned or crewed aircraft through the application of a DAA standard. ALPA contends that the FAA should also not allow the aircraft manufacturer or aircraft operator to "self-declare" their capability or compliance to a given DAA/ACAS standard, as long as this technical capability has not been verified or vetted by the FAA during aircraft certification or before operational approval is granted. NAAA stated that it shares the concern that petition did not reference standards to reinforce the petitioner's claims about its DAA system. NAAA also contends that, "until such time that the GBSS system in question is certified by FAA as conforming to some recognized standard of safety, the petitioner's proposed revisions to the conditions and limitations in their exemption [related to the efficacy or suitability of this GBSS relative to use of VOs for operations] should not be accepted." Additionally, NAAA also stated that agricultural aircraft operate in the same airspace as UA being used for BVLOS operations. For this reason, according to NAAA, the UA present a collision hazard.

Response

In response to ALPA's concerns, the FAA notes that the transfer of see and avoid responsibilities from uncrewed aircraft to crewed aircraft, as discussed in the BVLOS ARC report, is outside of the scope of this petition and will be addressed through a separate rulemaking process. Related to the need to see and avoid, the FAA does require, as stated in Condition and Limitation No. 61, that the PIC ensures that the UA remains clear of, and gives way to, any manned aircraft at all time, and remain clear of other UA.

The FAA also notes that this exemption enables the petitioner's operations to use its GBSS with the associated display tool, which together comprise the petitioner's DAA system, once the system is approved. The exemption does not authorize the system. Therefore, the exemption has also not relied on declarations by the petitioner regarding any specific industry standards that were met when the system was developed and tested. Authorization of the system will be obtained by the petitioner separately and documented in the petitioner's OpSpecs.

In considering the petition and proprietary documents submitted by the petitioner in support of the petition, the FAA has determined that, with proper mitigations, the petitioner's plans to use its DAA system can be permitted, and an equivalent level of safety can be maintained. To make this determination, the FAA considered the fact that the operations will be conducted at low altitudes, as required by Condition and Limitation No. 35, which prescribes a maximum altitude of below 400 ft. AGL. The FAA also requires the petitioner to file a NOTAM (D), which is widely disseminated, when the operations governed by this exemption are conducted. This requirement is stated in Condition and Limitation No. 52, which also specifies that the NOTAM (D) request must indicate the actual area to be flown for each day, as defined by a point and the minimum radius. Commercial agricultural aircraft operators and others engaged in aviation

activities at altitudes below 400 ft. AGL can maintain awareness of UA activities in their areas of operation by regularly reviewing these NOTAMs. The petitioner's collision avoidance plan required by Condition and Limitation No. 33 ensures that DAA is used for its operations, or sufficient VOs will be positioned along the fight routes, for the UA to maintain clear of manned aircraft.

Comments on Medical Certificate Requirements

In commenting on the petitioner's request that its PICs should be permitted to hold a third-class medical certificate, instead of a second-class medical certificate, ALPA continued to recommend that medical standards for UAS operations not be reduced from those required for manned commercial flight operations. ALPA stated that medical standards exist to protect persons and property in the air and on the surface, and that impact damage from a UA could disable either manned or unmanned aircraft (UA) and could cause substantial damage or injury to those on the surface. ALPA asserted that clear near and intermediate vision is required for UA BVLOS operations and is necessary for safety. ALPA also asserted that, although UA pilots are not exposed to the rigors of manned flight, their faculties must be intact, and conditions or states that could lead to sudden incapacitation must be avoided. ALPA also expressed concern about use of medication and screening for psychological deficiencies, substance use, sleep apnea, and other common conditions. ALPA stated its contention that second-class medical standards require pilots to have ongoing independent verification by an FAA trained physician to better assess their fitness to operate, which is necessary to ensure that the current level of safety is maintained. The Transport Workers Union of America (TWU) shared this concern and asserted that with the already reduced margin of error associated with UAS operations, anything that poses a risk to a single point of failure is unacceptable. TWU stated that they believe relief from FAR 61.23 should be done through the rulemaking process.

Response

The FAA considered these comments in determining whether to grant the petitioner's request to remove the FAA's requirement that its pilots hold a second-class medical certificate. The FAA originally determined that requiring a second-class medical certificate would provide reasonable assurance that the PIC would not have any physical or mental conditions that would interfere with the safe operation of the UA. The FAA has since re-evaluated the differences between a second and third-class medical certificate, and in Exemption No. 18601B granted that exemption holder's request for its PICs to hold third-class certificates. In that analysis, the FAA determined that reducing the frequency of medical examinations from every 12 months (under a second-class medical certificate) to every 24 months or 60 months (under a third-class medical certificate) would not be detrimental to the PIC role.[16] In addition, the FAA recognized that,

[16] In Exemption No. 18601B, the FAA stated the following: "Third-class medical certificates expire on the last day of the 60th month after the month of the date of examination shown on the medical certificate, or, for persons over the age of 40, on the last day of the 24th month after the month of the date of examination shown on the medical

aside from vision standards, the standards for a second-class medical certificate and a third-class medical certificate are alike.

While evaluating this petition, the FAA has also considered the safety importance of PIC vision standards related to distinguishing color in the operational environment using the pilot interface. The FAA notes that color vision retest requirements, when the first color vision test was failed, are more rigorous for the second-class medical certificate than for the third-class medical certificate. For this reason, an additional Condition and Limitation will require the petitioner to ensure that pilot interface does not rely on color distinctions alone to alert PICs of changes in the airspace environment if any of its PICs hold a "3rd Class Letter of Evidence" or have restrictions on their third-class medical certificate. This requirement is stated in Condition and Limitation No. 86. Based on this analysis, the FAA has determined that use of pilots holding the minimum of a valid third-class medical certificate will not adversely affect the safety of the petitioner's operation.

Comments on Excessive Exemptions Issued and Lack of Drone Regulations

An individual commenter voiced concern about the issuance of an exemption for BVLOS drone operations given what he considers to be the primitive state of the technology and the fact that, as he sees it, there are insufficient regulations in place. The individual stated that there are still far too many questions related to the operation of drones and that slow and controlled growth of drone operations is an absolute requirement to safely expand the strain on the national airspace. Along these lines, ALPA also asserted that petitions for exemptions or waivers to regulations may erode the current safety levels by allowing new operations to be conducted in the airspace at reduced levels of safety.

The individual also asserted that there is insufficient data on the Matternet M2 for BVLOS operations without VOs to be permitted. The individual stated his belief that there are already too many exemptions from aviation regulations being sought and granted, and too few drone regulations issued. TWU shared this particular concern and stated that it believes that the normal rulemaking process should prevail. ALPA also stated its support for rulemaking to modify 14 CFR Parts 61, 91, 107, 135, and establish a new rule for BVLOS operations and standards for the certification of pilots and equipment.

Response

The FAA considered these concerns and notes that since 2012 Congress has charged the FAA with integrating UAS into the NAS. Since that time, the FAA has embraced this challenge and issued exemptions to petitioners at a deliberate pace. To date, only six operators have been granted exemptions to conduct package delivery operations under part 135. The BVLOS Aviation Rulemaking Committee report titled "Unmanned Aircraft Systems Beyond Visual Line

certificate. The FAA has determined that, because of the high level of automation in the petitioner's UAS, a reduction in the frequency of the examinations from 12 months to every 24 or 60 months would not be detrimental to the PIC role to maintain operational safety." Exemption No. 18601B, p. 18.

of Sight Final Report" was published on March 10, 2022. On May 25, 2023, a Federal Register Notice was published seeking public comment on UAS Beyond Visual Line-of-Sight Operations.[17]

The exemptions that have been issued contain specific conditions and limitations related to data collection[18] and enable the FAA to obtain the information that it needs to provide the basis for further rulemaking efforts. The FAA intends for this exemption to add to the foundational framework to safely enable UAS cargo delivery operations for compensation or hire within the NAS that will ultimately be reflected in a final rule. The FAA views this exemption, and the other exemptions it has issued, as steps toward rulemaking.

In regards to data on the Matternet M2 aircraft, this aircraft operates in both the United States and other countries, and has accumulated thousands of hours of operating experience, generating valuable data for the FAA to utilize for approving this exemption, as well as contributing to future rulemaking. The FAA contends that the operations authorized under this exemption, using the Matternet M2 aircraft, are safe, based on the conditions and limitations imposed.

Comment on Pilot Certification Requirements

TWU also expressed concern that the petitioner is seeking an exemption to 14 CFR §135.243(b), which requires a pilot to hold a commercial pilot certificate to serve as pilot in command of an aircraft under VFR conditions. TWU stated that they believe these requirements should only be lifted once the equivalent UAS pilot requirements can be created through the rulemaking process, and that removal of the requirement without replacement of an equivalent UAS specific regulation allows for a gross decrease in operational awareness and safety.

Response

The FAA considered TWU's comments regarding what it sees as the need for the petitioner's PICs to hold commercial pilot certificates. While the FAA agrees that aeronautical knowledge and experience is important, the FAA has found that a pilot certificate issued under part 61 is not necessary to ensure the safety of the proposed operations. In Exemption No. 18339B, the FAA permitted the petitioner to require that each of its PICs, VOs, check pilots, and flight instructors hold a remote pilot certificate issued under part 107. As was stated in the Conditions and Limitations of that exemption, the FAA required the petitioner to ensure that these personnel complete training in accordance with the operator's training program and maintain currency in accordance with § 107.65. The FAA based its decision and these requirements on its assessment that the petitioner's training program was sufficient to provide the foundational knowledge of a commercial pilot. This training provides the knowledge that UA pilots need to make aeronautical decisions to maintain the level of safety. As discussed below, the FAA has conducted oversight

[17] 88 FR 33855.

[18] In this exemption, see Condition and Limitation Nos. 24, 25, and 26 that relate to general operational data collection, and Condition and Limitation Nos. 18, 18, 20, 21, 22, and 23 to relate to DAA-specific data collection.

of the petitioner's training program for more than two years, and has found the program to be satisfactory based on the oversight performed.

Comment on Weather Minimums and Collision Avoidance

Another concern that TWU expressed was that the petitioner seeks to operate in conditions in which the ceiling is less than 1,000 ft. and visibility is at least 2 miles. TWU stated that it believes this poses a serious threat to other aircraft operating in the area. TWU also questioned the reliability of the weather observation systems utilized for operations, and how pilots of traditional aircraft would be able to see and avoid petitioner's aircraft when the operations are in reduced visibility conditions.

Response

First, in addressing these issues raised by TWU, the FAA notes that, in Exemption No. 18339C, Condition and Limitation No. 51 required the petitioner to maintain ground visibility of at least 2 statute miles or higher if required by the specific airspace. In this exemption, the FAA has determined that while operating in Class G airspace, ground visibility must be at least 1 mile and the aircraft must remain clear of clouds. This new requirement can be found in Condition and Limitation No. 59, which specifies that the operators methods and procedures to maintain visibility and cloud clearance requirements must be accepted by the FAA and documented in the operator's manual system. In other classes of airspace, 14 CFR § 91.155, which states basic VFR weather minimums, will apply. The FAA's analysis related to these requirements is stated below.

The FAA considered the issues raised by TWU related to threats to other aircraft, the FAA responds that, for package delivery operations such as those conducted by this petitioner, responsibility to see and avoid manned aircraft and remain clear of other UA is placed on the petitioner's PIC. In this exemption, this assignment of responsibility is stated in Condition and Limitation No. 61, which requires that the PIC must remain clear of, and give way to, any manned aircraft at all times, and remain clear of other UA. Moreover, the responsibility to avoid other aircraft during operations lies squarely on the PIC regardless of weather conditions. The FAA also requires the petitioner to prepare a collision avoidance plan and submit this plan to the FAA for acceptance prior to conducting operations in a new area and also for areas where it is currently conducting operations. This requirement, stated in Condition and Limitation No. 33, ensures that the operations are planned to ensure that the PIC will receive timely alerts from the petitioner's VOs or from its DAA system and can take the necessary actions to avoid other aircraft.

While these visibility requirements that will apply to the planned operation are lower than those that TWU advocated, the FAA considers the probability to be low that a UA would encounter another aircraft, in the proposed operating area below 400 ft. AGL, the maximum altitude at which operations are permitted under the exemption.[19] This is because very few aircraft fly at altitudes lower than 400 ft. AGL in conditions of reduced visibility other than in the vicinity of

[19] Condition and Limitation No. 36

an airport. An encounter would be even more unlikely in weather conditions below the VFR weather minimums established by Condition and Limitation No. 59 for Class G airspace or § 91.155 for all other classes of airspace. This is because fewer aircraft would be operating in VFR conditions below weather minimums. The FAA has also taken into account the fact that the petitioner's UA can perform timely avoidance maneuvers when other aircraft are encountered, which favors the FAA's visibility requirements for the petitioner's UA operation. However, to further mitigate the risk of an unsafe condition occurring, the FAA is prohibiting flights under special visual flight rules (SVFR) and IFR, as detailed in Condition and Limitation No. 58.

Regarding the reliability of the weather observation systems, another issue raised by TWU, the FAA notes that § 135.213 prescribes that for part 135 operations "[w]henever a person operating an aircraft … is required to use a weather report or forecast, that person shall use that of the U.S. National Weather Service, a source approved by the U.S. National Weather Service, or a source approved by the Administrator." § 135.213(a). Also, in the absence of reported weather, the petitioner will utilize VOs, or, if VOs are not used, GSCs, who are trained on "[g]eneral meteorology focused on cloud types and associated weather conditions …."[20]

In sum, although visibility minimums in the exemption for operations in Class G airspace are lower than those that the commenter prefers, the FAA considers the petitioner's operations, as governed by the conditions and limitations described, to meet the level of safety that was intended when the regulations were established. Any remaining risk would be assessed and managed as part of the petitioner's ground risk assessments required by Condition and Limitation No. 32. These ground risk assessments must be performed for all current areas and before the start of operations in a new area. As the condition and limitation states, the ground risk assessment must include known weather hazards in the area.

Comment on 14 CFR 91.113

Finally, TWU stated that the petitioner seeks exemption from the regulation that specifies the order in which aircraft must see and/or avoid other aircraft, including balloons. TWU noted that it is incredibly difficult for pilots to see drones in flight, and asserted that putting the burden on fixed-wing aircraft lowers safety. For this reason, TWU asserted that drone operations should be at the very bottom in the avoidance hierarchy.

Response

In considering TWU's comments, the FAA first notes that, in granting relief to the petitioner from § 91.113(b), it is also preserving the substance of the special provisions that were established by the petitioner's previous Certificates of Authorization or Waiver (COA) that were issued under § 91.905. Further discussion of the incorporation of COA content into this exemption is provided below. Among these special provisions in the COA was a requirement that "[i]n the event of an intruder aircraft, the PIC must take immediate appropriate action to ensure safety of flight." In this exemption, the similar requirement is established in Condition

[20] Condition and Limitation Nos. 92 and 93.

and Limitation No. 61, which states that the PIC must ensure that the UA remains clear of, and gives way to, any manned aircraft at all time, and remains clear of other UA.

In addition, as was noted above, the FAA requires the petitioner to prepare a collision avoidance plan and submit this plan to the FAA for acceptance prior to conducting operations in a new area, and also for areas where it is currently conducting operations. This requirement, stated in Condition and Limitation No. 33, ensures that the operations are planned to ensure that the PIC will receive timely alerts from the petitioner's VOs or from its DAA system, and can take the necessary actions to avoid other aircraft.

Helicopter Association International on behalf of other Associations requested that the comment period be extended. The FAA denied this request on June 8, 2023, and its response can be found at Docket No. FAA-2022-0921-0004 at www.regulations.gov.

FAA's Analysis and Disposition of Petitioner's Requested Changes

A summary of changes to regulatory relief is provided in Table 2, after which each regulatory section listed in the table will be discussed in turn.

Table 2 – Summary of New Regulatory Relief

14 CFR Reference	Section or Subsection Title	Requested by Petitioner	FAA Initiated	Decision
61.23(a)(2)(ii)	Medical certificates: Requirement and duration.	x		Granted
61.3(a)	Requirement for certificates, ratings, and authorizations.		x	Corrected
61.3(c)(1)	Requirement for certificates, ratings, and authorizations.	x		Granted
91.113(b)	Right-of-way rules: Except water operations.		x	Granted
91.155	Basic VFR weather minimums.		x	Granted
135.79(a)(2)	Flight locating requirements.		x	Granted

Table 3 – Summary of Changes to Conditions and Limitations Related to Regulatory Relief Previously Granted

Request to:	18339C Condition and Limitation	14 CFR Reference	Section or Paragraph Title	Requested by Petitioner	FAA Initiated	Decision
NA	No. 9	91.119	Minimum safe altitudes: General.		x	Revised
NA	NA	91.119	Minimum safe altitudes: General.		x	Added

Request to:	18339C Condition and Limitation	14 CFR Reference	Section or Paragraph Title	Requested by Petitioner	FAA Initiated	Decision
NA	No. 30	91.119	Minimum safe altitudes: General.		x	Revised
NA	NA	91.209	Aircraft lights.		x	Added
NA	NA	135.161	Communication and navigation equipment for aircraft operations under VFR over routes navigated by pilotage.		x	Added
Revise	No. 43	135.205	VFR: Visibility requirements.	x		Revised
Revise	No. 58	135.205	VFR: Visibility requirements.	x		Revised
NA	No. 77	135.243(b)(1)	Pilot in command qualifications.		x	Revised
NA	No. 79	135.243(b)(1)	Pilot in command qualifications.		x	Revised
NA	No. 85	135.243(b)(1)	Pilot in command qualifications.		x	Revised
NA	No. 15	135.243(b)(1)	Pilot in command qualifications.		x	Removed
NA	No. 82	135.243(b)(1)	Pilot in command qualifications.		x	Removed

Table 4 – Summary of Changes Related to Other Conditions and Limitations in the Prior Exemption

Deletions and Revisions of Condition and Limitation	Topic	Requested by Petitioner	FAA Initiated	Decision
Revise Condition and Limitation No. 40 (18339C)	Responsibility for Preflight	x		Removed
Revise Condition and Limitation No. 48 (18339C)	Personnel Plan	x		Revised
Revise Condition and Limitation No. 63 (18339C)	Vision Requirement for VOs	x		Not Revised
Revise Condition and Limitation No. 66 (18339C)	Third-Class Medical Certificate	x		Revised

Deletions and Revisions of Condition and Limitation	Topic	Requested by Petitioner	FAA Initiated	Decision
Revise Condition and Limitation No. 76 (18339C)	Third-Class Medical Certificate	x		Revised

It should be noted that these tables shown above do not include regulatory relief or any changes to Conditions and Limitations related to remote operations. Although the petitioner indicated its intent to perform operations remotely, incorporating its Matternet Mission Control System into a ROC, amendment to the petitioner's operational exemption for remotely-sited operation is not required for this change. The FAA first approved remotely-sited operations in Exemption No. 18163D, where it addressed the potential impact on operational ratios and also determined that remote pilot duty stations must be physically located within the United States. This requirement was included in the petitioner's Exemption No. 18339C as Condition and Limitation No. 10 and is included in this exemption as Condition and Limitation No. 13. Communication capability requirements of the petitioner's pilot interface is addressed in the petitioner's § 44807 Exemption No. 18338E, and these requirements will apply to all of the petition's operations, including remote operations. Finally, the petitioner' communication service assessment required by Condition and Limitation No. 31, which was already included in its prior Exemption No. 18339C as Condition and Limitation No. 24, ensures that available C2 is adequate for all of the petitioner's operations, including operations that are remotely sited. For these reasons, additional conditions and limitations, other than the change noted in the petitioner's § 44807 exemption, are not required for the remote operations requested.

Additionally, the relief granted in this exemption considers the unique characteristics associated with commercial package delivery operations using UA, and the operating environment in which the petitioner will conduct commercial package delivery operations with its UA. As the FAA gains more data and experience related to operations of this kind, and learns from each operator, the FAA may adjust its policy. Such adjustments might warrant a revision to this exemption or the issuance of a new exemption. The specific grants and denials in this exemption are related directly to the petitioner's operation and may not be the same for another petitioner. The FAA's determination to grant or deny relief under this exemption is subject to change, based on future data.

Analysis supporting the FAA's decision to grant or deny specific relief requested follows below. This analysis makes use of the following definitions, which are also apply to the conditions and limitations established by the exemption.

Table 5 – Definitions

Term	Definition
Intervention	An unplanned event with a potential impact on pilot workload beyond normal operating procedures, to include a PIC-initiated hold, return to base, mission abort as a result of abnormal flight/system behavior or traffic, or the PIC's use of an emergency procedure.
"Land now"	Refers to the capability of the UA to perform an immediate landing to

	exit the airspace on command or automatically.
Pilot Interface	The means used by the pilot to monitor the status of the UA and control the UA during flight.
Required Personnel	Operator personnel who directly participate in the flight operation.[21]
Areas of Operations	Locations identified in OpSpec B050 where the operator is authorized to conduct operations. These locations may serve as "representative airports" for the purpose of line checks conducted to meet the requirements of § 135.299.
Sufficient VOs	The minimum number of VOs required to continuously observe at least a 2 statute mile radius of airspace surrounding the UA in flight so as to ensure that the PIC receives sufficient notice to maintain the UA well clear of manned aircraft and not create a collision hazard for other UA.
Representative airport	For the purpose of line checks conducted to meet the requirements of § 135.299, an authorized location identified in the operator's OpSpecs will be considered a "representative airport."
Operations Base	Refers to the concept of a central location from which UA depart and fly to a delivery destination. UA return to the operations base upon completion of the delivery.

Petitioner's Requests for New Regulatory Relief

14 CFR Part 61 – Subpart A – General

14 CFR § 61.23(a)(2)(ii) Medical certificates: Requirement and duration.

Section 61.23 addresses requirements for medical certificates. Subsection § 61.23(a)(2)(ii) states, in pertinent part, that a person exercising … "[p]rivileges of a commercial pilot certificate in an aircraft other than a balloon or glider" is required to hold a second-class medical certificate.

The petitioner requests revision of Condition and Limitation No. 76 in Exemption No. 18339C, which states that its PICs must hold second-class medical certificates. The petitioner's requested change will enable it its PICs to hold a third-class medical certificate instead. The petitioner justifies its request by noting that the regulation in question defines very few differences between these two classes of medical certificates other than visual acuity requirements, and points out that that pilots are permitted to operate much larger aircraft under the BasicMed requirements, which are even less stringent.[22] The petitioner asserts that the M2 aircraft is a small UA that, in its operation, flies a predefined route with limited pilot intervention selections. UPSFF contends that a third-class medical requirement would provide an equivalent level of safety to that of a second-class medical requirement for PICs in its operations.

The FAA reviewed the petitioner's request and considered the comments received. First, the FAA revisited the petitioner's first exemption and noted that its PICs initially held commercial

[21] For purposes of this exemption, the term "required crewmember" does not have the same meaning as it does when required by regulation or type certificate. Under this exemption, minimum required personnel is set forth in conditions and limitations, but the operator may, for example, assign additional personnel who would be required to complete training as if they are required crewmembers.
[22] The petitioner appears to be referring to the provisions of § 14 CFR 16.23(c)(3).

pilot certificates and, accordingly, were required to hold at least a second-class medical certificate as required by 14 CFR § 61.23(a)(2). Although the petitioner was later granted relief from § 135.243(b)(1) in Exemption No. 18339B to permit its PICs to hold a remote pilot certificate issued under part 107 instead of a commercial pilot certificate, the FAA continued to require that these PICs hold a second-class medical certificate. Most recently, this requirement was captured in Condition and Limitation No. 76 of Exemption No. 18339C, of which the petitioner now requests revision. The FAA interprets the petitioner's request for revision of from Condition and Limitation No. 76 of Exemption No. 18339C as a request for relief from 14 CFR § 61.23(a)(2).

Recently the FAA conducted an additional safety analysis with respect to the medical certificate requirements for commercial UAS operations and reconsidered a similar request for relief from 14 CFR § 61.23(a)(2) in Exemption No. 18601B. As it stated in that exemption, the FAA determined that reducing the frequency of medical examinations from every 12 months (under a second-class medical certificate) to every 24 months or 60 months (under a third-class medical certificate) would not be detrimental to the PIC role. In addition, the FAA recognized that, aside from vision standards, the standards for a second-class medical certificate and a third-class medical certificate are alike. For this reason, the FAA, for the first time in Exemption No. 18601B, permitted that petitioner to require its PICs to hold a third-class medical certificate, and has determined that for this petitioner it is prepared to do the same. Therefore, relief is granted to the petitioner from § 61.23(a)(2). Condition and Limitation No. 85 is established in this exemption showing the change and including references to check pilots and flight instructors that will be discussed further below:

Condition and Limitation No. 85

Each PIC is required to hold at least a third-class medical certificate, as must each check pilot and flight instructor when serving as a required crewmember. A copy of this certificate must be kept in the pilot's records.

In granting the relief requested from § 61.23(a)(2), the FAA considered a difference in vision testing standards that distinguishes second-class and third-class medical certificates related to distinguishing color in the operational environment of a pilot interface. The FAA notes that color vision test requirements are more rigorous for the second-class medical certificate than for the third-class medical certificate, and, specifically, for the third-class medical certificate, the requirements for retesting are less stringent in the event that the initial test was failed.[23] For this reason, an additional Condition and Limitation in this exemption will require the operator to

[23] For the third-class medical certificate, an additional operational color vision test (OCVT) is required. This test has two components, a signal light test administered at an airport air traffic control tower, and a practical test involving identification of colors on aeronautical charts. If both parts are passed, a third-class medical certificate will be issued with the limitation "3rd Class Letter of Evidence." If only one part of the OCVT is passed, a third-class medical certificate will be issued with restrictions—"Not valid for flights requiring color signal control during daylight hours" or "Not valid for night flying or by color signal control." For a second-class medical certificate would require both passing the OCVT *and also additional tests*, and the medical certificate would be issued with no limitation or comment regarding color vision.

ensure that pilot interface does not rely on color distinctions alone to alert PICs of changes in the airspace environment if any of its PICs hold a "3rd Class Letter of Evidence" or any restrictions related to color vision control. This Condition and Limitation ensures the use of sounds, annunciations, text messages, vibrations, and other means to convey information to the PIC when it is necessary for the PIC to quickly respond. This additional Condition and Limitation No. 86 is described below.

Condition and Limitation No. 86

If any of the operator's PICs, check pilots, or flight instructors holds a medical certificate stating "3rd Class Letter of Evidence" or any restrictions related to color vision control, the pilot interface must not rely on use of color alone to convey information on the screen.

The FAA also addressed the petitioner's request for revision of Condition and Limitation No. 66 in Exemption No. 18339C, which states that its check pilots must hold at least a second-class medical certificate when serving as a required crewmember. The petitioner's justification for this request is the same as the justification for its request to change Condition and Limitation No. 66 in Exemption No. 18339C, which was discussed above required the petition's PICs to hold second-class medical certificates.

In considering this request, the FAA noted that during initial check rides the check pilot must serve as the pilot in command. This brings the petitioner's request for relief from Condition and Limitation No. 66 in Exemption No. 18339C under the ambit of relief from § 61.23(a)(2). To the extent that the petitioner's PICs will now be permitted to hold third-class medical certificates, the FAA finds no compelling reason for its check pilots to be held to a higher medical standard. The FAA will grant the petitioner's request to reduce the medical certificate requirement of its check pilots to that of its PICs. In addition, because the petitioner's flight instructors also serve as pilots in command during initial training, the FAA will permit its flight instructors to hold a third-class medical certificate as well, for the same reasons.[24] These requirements are stated in Condition and Limitation No. 85, which was discussed above. As summarized above, Condition and Limitation No. 85 reflects not only that the petitioner's PICs must hold a third-class medical certificate, but also its check pilots and flight instructors, when acting as pilot in command, are required to do the same.

14 CFR § 61.3(c)(1) Requirement for certificates, ratings, and authorizations.

Section 61.3 addresses requirements for certificates, ratings, and authorizations under part 135. Subsection 61.3(c)(1) specifies, in pertinent part, that a person may serve as a required pilot flight crewmember of an aircraft only if that person holds the appropriate medical certificate issued under part 67 … or other documentation acceptable to the FAA, that is in that person's physical possession or readily accessible in the aircraft.

[24] In other recent exemption, the FAA has also required both flight instructors and check pilots to hold medical certificates, e.g., Exemption No. 19508.

Although not specifically noted in the petition, the FAA considered whether the petitioner's request for changes to Condition and Limitation Nos. 66 and 76 of Exemption No. 18339C would also require relief from § 61.3(c)(1). The FAA noted that § 61.3(c)(1) requires a person to hold an *appropriate* medical certificate under 14 CFR Part 67. The FAA found that, were relief not granted to the petitioner from § 61.23(a)(2)(ii), the appropriate medical certificate for operations requiring a commercial pilot certificate would be at least a second-class medical certificate. For this reason, the FAA construes the requested relief for the petitioner's PICs to hold third-class medical certificates, which would not be appropriate, as a request for relief from § 61.3(c)(1) as well as § 61.23(a)(2)(ii). Having granted relief from § 61.23(a)(2)(ii), the FAA grants relief from § 61.3(c)(1) is granted in turn.

Finally, the FAA noted that the petitioner's Exemption No. 18339C lists a prior grant of relief from § 61.3, however in Exemption No. 18339B its analysis stated that relief was specifically from § 61.3(a). This exemption will clarify that relief is granted to §§ 61.23(a)(2)(ii), § 61.3(a), and 61.3(c)(1).

Petitioner-Requested Changes to Conditions and Limitations

The petitioner presented its plan to use GBSS with an associated display tool to comprise a DAA system that will enable it detect intruder aircraft and ensure that its PICs are presented timely and sufficiently detailed information to take evasive action and prevent collisions with other aircraft.

The petitioner has requested changes to several conditions and limitations in Exemption No. 18339C to enable Operations using GBSS for DAA. These requests and the related changes are detailed below.

Although this exemption enables the petitioner's use of GBSS to perform DAA functions in its operation, the petitioner will not be authorized to utilize the system until it has obtained the necessary approval from the FAA. New Condition and Limitation No. 48 addresses these requirements.

Condition and Limitation No. 48

Condition and Limitation No. 48 requires the petitioner, in order to obtain this approval, to submit information to the FAA detailing the system's conformity with pertinent sections of industry standards related to collision avoidance systems, ground based surveillance systems, and detect and avoid systems. The petitioner must submit a declaration, and provide evidence supporting its declaration, that its DAA system has been tested and determined to meet these requirements. This evidence should include documentation of the testing, including the specific encounter sets used in the tests, to verify system's performance. Once these documents have been submitted, an operational suitability evaluation may be required. Once the system is evaluated, an operational validation may be required under part 135 prior to amendment of the petitioner's OpSpecs to authorize use of the system and define the permitted operational areas where the system may be used.

In this exemption, the FAA has established a number of requirements to ensure that, once the petitioner's conflict management system is approved, a level of safety is maintained equal to that which use of VOs has provided. These requirements are reflected in additional conditions and limitations along with the changes to certain conditions and limitations that were requested by the petitioner. Several of the new conditions and limitations will provide for the FAA's collection of data on the new system's performance and further evaluation of the benefits of DAA technology when used in UA small package delivery operations.

Condition and Limitation No. 48 in Exemption No. 18339C

As stated above, the petitioner requests an amendment to its Exemption No. 18339C in order to commence BVLOS operations using its GBSS system that it has worked with Raytheon to develop. The petitioner stated that it will use its GBSS with an associated display tool which will provide its PICs with the necessary situational awareness for effective aeronautical decision making to mitigate the air risk. The petitioner requests modification of Condition and Limitation No. 48 of Exemption No. 18339C to remove the requirement for a VO plan when its DAA system is used for operations. Condition and Limitation No. 48 of Exemption No. 18339C required that the operator have a VO plan to ensure that there are a sufficient number of VOs to identify non-participating aircraft prior to their entry into the planned operational area within a 2-statute mile radius of airspace when the UA is in flight. The VO plan ensures that the PIC receives sufficient notice to maintain the UA well clear of all other aircraft. The petitioner contends that, based on the testing data that it has obtained, it has found the electronic systems to provide an equal or greater level of safety to the operation when compared to the use of a VO. Therefore, it seeks modification of Condition and Limitation No. 48 to remove the requirement for a VO plan when its GBSS is used for operations.

The FAA reviewed the petitioner's request and considered the comments received. In addressing use by the petitioner of GBSS in lieu of VOs to detect manned aircraft in the operating area, the FAA noted test data provided by the petitioner that, according to the petitioner, indicated that its system provides for at least the same level of safety as VOs when data for both were collected and compared.[25] The FAA also took into account the potential benefits of a technical solution, such as GBSS, that avoids the human factor challenges of reliance on VOs for deconfliction, and, according to the petitioner, when combined with a visual display of the air traffic information, will ensure that the PIC's situational awareness is maintained. The FAA has determined that with mitigations already in place, such as requiring the petitioner to operate at altitudes below 400 ft. AGL, oversight from the FAA, and the requirement to perform a ground risk assessment prior to conducting operations in a new area, combined with new conditions and limitations that delineate approval criteria for use of the GBSS as discussed previously, provide that there will not be an adverse effect on safety.

In addition, the following Conditions and Limitations have been established to enable the FAA to collect data related to performance of the petitioner's GBSS and to ensure that the petitioner's

[25] UPSFF, Federal Aviation Administration (FAA) Beyond Visual Line of Sight (BVLOS) Part 135 Operational Approval in The Villages, FL, p. 25. Proprietary.

operation includes planning for use of VOs when needed and for use of GSC personnel when VOs are not required. Additional Conditions and Limitations also listed below establish the operational performance requirement for the operator's GBSS system and state the PIC's responsibility to keep the UA well clear of manned aircraft. The duties and training of the GSCs, who serve as required personnel in the operation when GBSS is used, are also specified in the conditions and limitations listed below. All of these conditions and limitations are discussed in detail below. The combined effect of these conditions and limitations is such that the FAA has determined that after approval by the FAA, use of such a system will not adversely affect safety.

Condition and Limitation No. 18

Condition and Limitation No. 18 ensures that the FAA is immediately notified in the event of any midair collision (MAC) with a manned aircraft. In the event of MAC with a crewed aircraft, the operator must immediately notify the FAA of the event and provide the date, time, location, altitude of the encounter, and avoidance maneuver taken, if any.

Condition and Limitation No. 19

Condition and Limitation No. 19 ensures that the FAA is immediately notified in the event of any near-midair collision (NMAC) with a manned aircraft, and requires immediate, detailed reporting of the closest point of approach, date, time, location, altitude of the encounter, and any avoidance maneuver taken.

Condition and Limitation No. 20

Condition and Limitation No. 20 requires the petitioner to report to the responsible Flight Standards Office any well-clear violation with a crewed aircraft, within 24 hours of the occurrence, including closest point of approach, date, time, location and altitude of the encounter, and avoidance maneuver taken, if any.

Condition and Limitation No. 21

Condition and Limitation No. 21 requires that, for flights that involved any horizontal or vertical excursion from an authorized cell in the UAS Facility Map, the excursion must be reported within 24 hours of the occurrence to the responsible Flight Standards Office including the maximum distance and duration of the excursion, as well as the resolution of the excursion.

Condition and Limitation No. 22

Condition and Limitation No. 22 establishes that the petitioner must report any unscheduled outage of its strategic conflict detection and conformance monitoring service to the responsible Flight Standards Office within 24 hours of the outage, including loss of the service and the time to restore.

Condition and Limitation No. 23

Condition and Limitation No. 23 requires that, in the event of a malfunction of the operator's strategic conflict detection and conformance monitoring service, the petitioner must send a report to the responsible Flight Standards Office regarding the nature of the malfunction and the time to restore normal operation of the service within 24 hours of the malfunction.

Condition and Limitation No. 33

Condition and Limitation No. 33 states that the petitioner must prepare a collision avoidance plan, and submit the plan to the FAA for acceptance, prior to conducting operations in a new area, and specifies that the plan must address use of VOs when needed, how the petitioner will manage conflicts with other UA, and identifies requirements that must be met when third party service providers (3PSPs) are used.

Condition and Limitation No. 34

Condition and Limitation No. 34, which is a revision of Condition and Limitation No. 48 in Exemption No. 18339C, requires that the operator must have a required personnel plan[26] to address each role in the GOM, including the use of VOs in the operation. The plan must provide for sufficient VOs to be able to give the PIC sufficient notice to keep the UA clear of all manned aircraft and other UA, and requires that VOs, or GSCs if used for the operation, must be able to "sufficiently perform observation, and detect obstacles and any unforecasted weather affecting the operating area, to ensure the safety of the operation."

Condition and Limitation No. 41

Condition and Limitation No. 41 specifies that the petitioner must maintain conflict management capability that includes use of GBSS as authorized by the FAA or observation of the airspace by VOs in the area of operations as needed, sufficient to manage conflicts and ensure that the UA remains clear. The FAA concluded that it was appropriate to require the petitioner to have a conflict management capability. However, in order to ensure sufficient flexibility for the petitioner's operations, the FAA has provided two ways for the petitioner to meet the conflict management capability requirement. The FAA also included paragraph (c) in order to ensure that there is sufficient safety data collected.

Condition and Limitation No. 61

Condition and Limitation No. 61 requires that the PIC must ensure that the UA remain well clear of, and give way to, any manned aircraft at all times, and does not get so close to any other UA as to create a collision hazard.

Condition and Limitation No. 70

[26] This change aligns the exemption with other recent exemptions, e.g., Exemption No. 20179.

Condition and Limitation No. 70 states the duties of the petitioner's GSCs, when used for the operation, to visually survey their area(s) of responsibility at designated intervals and notify the PIC of new obstructions, the erection of a new obstruction, or the appearance of any new obstruction or hazard, assembly of people, or any weather condition that could interfere with the operation of the UA or conflict with required weather minimums.

Condition and Limitation No. 93

Condition and Limitation No. 93 requires the operator to maintain a GSC training program, evaluate the GSCs on seven specified knowledge areas that are identified, including preflight inspection if performed by the GSCs, and document the completion of these requirements in each GSC's records. This condition and limitation was added in order to require sufficient training requirements for GSCs, which are not provided in FAA regulations.

Condition and Limitation No. 63 in Exemption No. 18339C

The petitioner requests modification of Condition and Limitation No. 63 of Exemption No. 18339C, which specifies that VOs must be able to see all potential hazards without hesitation using vision that is unaided by any device other than corrective lenses or eyeglasses. The petitioner notes that VOs will not be required for its operations when GBSS is used and recommends adding language to the Condition and Limitation to clarify that it applies only when operations require the use of VOs. The petitioner states that this change will have no adverse safety impact.

The FAA reviewed the petitioner's request and considered the comments received. The FAA noted that Condition and Limitation No. 63 of Exemption No. 18339C does not specify a requirement that VOs be used for the operation, but rather addresses a requirement that applies to the operation when VOs are used. For this reason, the FAA has determined that the change requested by the petition is not needed. As such, the vision requirement stated in the Condition and Limitation will remain, and the petitioner's VOs must continue to this requirement. The Condition and Limitation is necessary to ensure that VOs, as positioned for the operation, will be able to observe at least a 2-statute mile radius of airspace surrounding the UA in flight. The petitioner's GSC personnel, in contrast, will not perform continuous observation of the airspace, and the vision requirement for VOs will not apply.

In this exemption, Condition and Limitation No. 94 states the VO vision requirement previously specified in Condition and Limitation No. 63 of Exemption No. 18339C. The words "without hesitation" have been removed for simplicity because the FAA's requirement is clear without these words.

Condition and Limitation No. 94

Condition and Limitation No. 94 states that VOs must be able to see all potential hazards with vision that is unaided by any device other than corrective lenses or eyeglasses.

Condition and Limitation No. 40 in Exemption No. 18339C

The petitioner requests modification of Condition and Limitation No. 40 of Exemption No. 18339C, which specifies, in pertinent part, that the preflight inspection must be conducted by the PIC or by the VO. The petitioner asserts that it does not intend to use VOs in its operations when its GBSS will be used for DAA, and notes that its PICs are not always physically present at the take-off location. The petitioner requests that the FAA permit "a crewmember qualified in accordance with [its] approved training program" to perform preflight duties.

The FAA reviewed the petitioner's request and considered the comments received. The FAA noted the petitioner does require flexibility so that multiple personnel will be able to perform preflight inspection duties for its operation when the PIC is remotely located. When GBSS is used, the petitioner's GSCs will be located at both take-off and landing points and will need to be able to perform preflight inspections for both the outbound and inbound flights. Likewise, when GBSS is not used, VOs will be located at both take-off and landing points and will need to be able to perform preflight inspections for both the outbound and inbound flights.

The FAA then turned its attention to the language of 14 CFR § 91.7 which states the responsibility of the PIC to determine whether the aircraft is in a condition safe for flight. Because Condition and Limitation No. 40 of Exemption No. 18339C substantially restated this regulatory requirement, the FAA has determined that the Condition and Limitation is not needed in the exemption, and it has now been removed.

In removing Condition and Limitation No. 40 of Exemption No. 18339C from the exemption, the FAA further noted that training requirements for personnel who perform preflight inspection duties, other than pilots in command, are not specified in the regulation. The FAA determined it is necessary to define these requirements in the exemption to maintain an equivalent level of safety, and is including Condition and Limitation No. 95 in this exemption for this purpose. This new requirement is described below.

Condition and Limitation No. 95

Condition and Limitation No. 95 establishes requirements for the operator's personnel other than the PIC who will perform preflight inspections. These requirements are to hold a pilot certificate and a letter of authorization from the FAA to conduct preflight inspection, or to hold a repairman certificate issued by the operator with authorization to perform preflight tasks.

Condition and Limitation No. 43 in Exemption No. 18339C

The petitioner requests modification of Condition and Limitation No. 43 of Exemption No. 18339C, which specifies that "prior to beginning flight operations, the RPIC must verify that there is a VO plan, that the VO plan ensures sufficient VOs are available for the operation, and that the VOs have been briefed with the information that they require for operations. In addition, the PIC is required to be familiar with all the content from the VO briefing." The petitioner explains that in some of its operations, when GBSS is used, VOs will no longer be required; therefore, the requirement for a VO briefing would be nullified. Therefore, the petitioner urges

that the Condition and Limitation be revised and asserts that there would be no adverse effect on safety.

The FAA reviewed the petitioner's request and considered the comments received. The FAA noted the petitioner's intent to eliminate VOs as it deploys GBSS within its areas of operations to perform DAA functions. As noted above, GSCs will replace VOs when this occurs. The FAA agrees with the petitioner that the scope of the condition and limitation should be expanded to include not only VOs required for the operation but GSCs as well. As such, the FAA has adopted the term "required personnel" in these exemptions to refer to operator personnel who directly participate in the flight operation. The FAA considers both the VO role and the GSCS role to fit within its "required personnel" definition. The FAA maintains that plans for all of the required personnel, not just VO, need to be addressed by the petitioner both in planning and in preparation for flight activities. For this reason, the FAA is establishing two conditions and limitations to address these issues. First, Condition and Limitation No. 34 requires a plan to ensure that sufficient required personnel are used in the operation as needed to ensure the level of safety. Second, Condition and Limitation No. 54 requires that, for each flight operation, the number of personnel required is verified based on current conditions and the personnel are properly briefed. These conditions and limitations are described below.

Condition and Limitation No. 34

Condition and Limitation No. 34 requires that the operation develop and maintain plans for its use of required personnel[27] in the operation that addresses the responsibilities of each role, and the utilization of the personnel to ensure timely reporting to the PIC of any hazards.

Condition and Limitation No. 54

Condition and Limitation No. 54 requires the PIC to verify that sufficient personnel are available for the operation based on the required personnel plan and current conditions, specifies the content for the required personnel briefing, requires the PIC to be familiar with the briefing, and requires the PIC to verify that all required personnel have been briefed.

Condition and Limitation No. 58 in Exemption No. 18339C

The petitioner requests modification of Condition and Limitation No. 58 of Exemption No. 18339C, which describes the required duties that its VOs are expected to perform. Condition and Limitation No. 58 stated that VOs must continuously scan their area(s) of responsibility and immediately notify the PIC whenever they observe undocumented or new obstructions, any obstructions, hazards or conflicting air traffic that could pose a risk to the operation, open-air assemblies of people, or weather conditions that affect visibility. The petitioner explains that no VOs will be required for their planned operations using GBSS. The petitioner requests that the

[27] For purposes of this exemption, the term "required personnel" does not have the same meaning as it does when required by regulation or type certificate. Under this exemption, minimum required crew is set forth in conditions and limitations and in the plan required by C&L 34, but the operator may, for example, assign additional personnel who would be required to complete training as if they are required crewmembers.

language of the condition and limitation be clarified to reflect that use of VOs is not required. The petitioner asserts that safety will not be adversely affected because duties of a VO would not need to be specified when no VOs are used.

The FAA reviewed the petitioner's request and considered the comments received. The FAA again noted the petitioner's intent to eliminate VOs as it deploys GBSS within its areas of operations to perform DAA functions. However, the FAA also considered the fact the petitioner is actually making two changes. First, the petitioner is removing VOs from certain operations, i.e., those operations that will use GBSS. Second, the petitioner is adding the new role of the GSC, which it will use in place of the VO in operations using GBSS. This role of the GSC in relation to the performance of preflight inspections was discussed above.

For this reason, in granting the petitioner's request, the FAA will retain Condition and Limitation No. 58 of Exemption No. 18339C, which is now Condition and Limitation No. 69 in this exemption, including the addition of language clarifying that it applies when VOs are used. The FAA is also amending the language of this condition and limitation in several ways following a review of the prior exemption. First, the FAA has added a new paragraph (f) that requires VOs to notify the PIC whenever they observe any weather condition that could interfere with the operation of the aircraft or exceed the required weather minimums. While this was not previously included, the FAA has concluded that it is necessary to include this requirement in order to prevent an adverse effect to safety. Second, the FAA amended paragraph (g) (which was formerly paragraph (f)) by removing wording that was duplicative of the requirement already present in paragraph (d). Finally, the FAA made paragraph (a) a standalone paragraph in order to clarify that VOs need to be observing conflicting air traffic. While this was previously required, this revision increases clarity.

The FAA is also establishing a new Condition and Limitation, Condition and Limitation No. 70, with analogous requirements related to duties of GSCs when GSCs are used for operations as planned. In those operations, the required duties of GSCs will be similar to those performed by VOs. The only difference between the required duties of GSCs and VOs is that GSCs are not required for the duty to scan the airspaces and notify the PIC of conflicting air traffic. The requirements of the GSC role will enable the petitioner to rely on GBSS and its associated display tool to monitor the airspace in which the UA is operating, as the petition describes. Both conditions and limitations are summarized below.

Condition and Limitation No. 69

Condition and Limitation No. 69 states that that VOs must continuously scan their area(s) of responsibility and immediately notify the PIC whenever they observe undocumented or new obstructions, any obstructions, hazards or conflicting air traffic, that could pose a risk to the operation, open-air assemblies of people, or weather conditions that affect visibility.

Condition and Limitation No. 70

Condition and Limitation No. 70 states that that GSCs must continuously scan their area(s) of responsibility and immediately notify the PIC whenever they observe undocumented or new

obstructions, or any obstructions or hazards, that could pose a risk to the operation, open-air assemblies of people, or weather conditions that affect visibility.

FAA-Initiated Changes

Changes Related to Regulatory Relief

As the FAA gains more data and experience related to operations of this kind, and learns from each operator, the FAA from time to time adjusts its approach in granting relief from existing regulations that, when they were created, were not intended to apply to UA operation. Conditions and limitations related to the relief may be adjusted as well. Changes of this nature that apply to this exemption are described below.

14 CFR Part 91 – Subpart B – Flight Rules

14 CFR § 91.113 Right-of-way rules: Except water operations

Section 91.113 addresses the requirement for yielding right-of-way for operations except when the aircraft is on water. Section 91.113(b) applies to both IFR and VFR operations and states that, when weather conditions permit, each person operating an aircraft must remain vigilant so as to see and avoid other aircraft. Section 91.113(b) also establishes that yielding right of way means that an aircraft may not pass over, under, or ahead of the other aircraft unless well clear.

The petitioner did not request relief to § 91.113(b) in this exemption but has separately requested this relief through the FAA Certificate of Waiver or Authorization (COA) process. The petitioner seeks to commence BVLOS operations using it GBSS system. The FAA has previously used authorization and waiver of § 91.113(b) to permit small package delivery operations, which ensures that "vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft" during the flight operation, regardless of whether the operation is conducted under instrument flight rules or visual flight rules. The petitioner currently holds a COA permitting their UAS to be used for BVLOS operations with carriage of property for compensation or hire. The COA requires that "visual observers … must be used at all times and maintain instantaneous communication with the PIC."

In this exemption, the FAA will grant relief from § 91.113(b) to reduce the burden on the petitioner of obtaining a COA separate and additional to this exemption. Conditions and limitations that previously resided in the COA will be consolidated into the operation exemption, ensuring greater standardization. This will enable both the petitioners and the FAA to save many hours of administrative time in the requesting and processing of COA forms.

The FAA has determined, in granting relief from § 91.113(b) in this exemption, the same level of safety will be maintained because the essential conditions and limitations that would have been established by a COA will be maintained in this exemption instead, in addition to the additional conditions and limitations discussed previously related to use of a detect and avoid system to ensure that the operator will be able to avoid other aircraft. Among these conditions and limitations, which are listed below, is Condition and Limitation No. 69 (previously Condition

and Limitation No. 78 in Exemption No. 18339C), which has been modified at the petitioner's request to specify that duties of the VO apply only when VOs are used, as was discussed above. In addition, Condition and Limitation No. 75 in this exemption, which is new, is also derived from the COA but has been modified to require VOs *not for all operations* but only for operations in which GBSS is not used. For operations in which GBSS is used, the petitioner will be required to use GSCs instead of VOs. This change is consistent with the petitioner's planned use of GBSS, which this exemption enables. All of the other conditions and limitations listed below are new to this exemption and derived, essentially unchanged, from conditions and limitations that a COA would have established.[28]

Condition and Limitation No. 9

Condition and Limitation No. 9 states that this exemption applies to operations in Class G airspace unless the operator has prior authorization from the Administrator to operate in Class B, Class C, or Class D airspace, or within the lateral boundaries of the surface area of Class E airspace designated for an airport.

Condition and Limitation No. 51

Condition and Limitation No. 51 requires that, prior to beginning flight operations, the PIC must review NOTAM and, if they indicate that there will be other UA or other aviation activity in the intended operating area, the operator must contact the other operator(s) to deconflict the activities.

Condition and Limitation No. 52

Condition and Limitation No. 52 states that operator must request that a distant (D) NOTAM be issued not more than 72 hours in advance but not less than 24 hours prior to the operation, and states requirements for the information that the operator must provide.

Condition and Limitation No. 53

Condition and Limitation No. 53 states that, in the event that the operational area overlaps a Military Training Route, the operator must contact the Military Airspace Scheduling Office for the route 24 hours in advance for coordination and deconfliction of the activities.

Condition and Limitation No. 65

[28] Provisions contained in some conditions and limitations in the COA were already included in the petitioner's prior exemption, Exemption No. 18339C, or in other exemptions issued recently by the FAA. In this exemption, these COA-related conditions and limitations are Condition and Limitation Nos. 1, 27, 61, and 64. Language from the COA was added to Condition and Limitation No. 27 relating to suitable mitigations. Language was also added to Condition and Limitation No. 27 to allow for the FAA Administrator to approve alternative methods of compliance. This was added in order to give the FAA ability to expand based on its own discretion without needing to issue an entirely new exemption.

Condition and Limitation No. 65 requires that the PIC must immediately notify ATC of any flyaway or loss of control that has resulted in a loss of situational awareness or could cause a hazard to other aviation activities.

Condition and Limitation No. 69

Condition and Limitation No. 69 states the duties of VOs, when used for the operation, to continuously scan their area(s) of responsibility, maintain communication with the PIC at all times, and immediately notify the PIC whose areas of operations are affected whenever they observe conflicting air traffic and other potential hazards to the operation.

Condition and Limitation No. 75

Condition and Limitation No. 75 establishes that the operator must use GSCs for operations using its DAA system and VOs for all operations where DAA is not used or is not available.

14 CFR § 91.119 - Minimum safe altitudes: General.

Section 91.119 addresses the requirement for minimum safe altitudes. Section 91.119(b) prescribes that, except when necessary for takeoff or landing, no person may operate an aircraft over any congested area of a city, town, or settlement, or over any open-air assembly of persons, or at an altitude below 1,000 ft. above the highest obstacle within a horizontal radius of 2,000 ft. of the aircraft. Section 91.119(c) prescribes that, over other than congested areas, the altitude may not be below 500 ft. above the surface, except over open water or sparsely populated areas. When over open water or sparsely populated areas, the aircraft may not be operated closer than 500 ft. to any person, vessel, vehicle, or structure.

The FAA granted the petitioner relief from §§ 91.119(b) and (c) in Exemption No. 18339 and in subsequent amendments, limiting the altitude of the aircraft in the petitioner's operation to 400 ft. AGL. In these exemptions, the FAA included certain conditions and limitations that were intended to serve as mitigations against safety risks to persons and property related to low altitude operations. For example, Condition and Limitation No. 56 in Exemption No. 18339C, which became Condition and Limitation No. 64 in this exemption, requires the PIC to abort the operation if unpredicted circumstances or emergencies that could potentially degrade the safety of persons or property arise, and to terminate the flight without causing undue hazard to persons or property in the air or on the ground.

The FAA continues to gather data and learn more about short-duration, short-distance UA operations to deliver packages in uncontrolled airspace, like those of the petitioner, as these operations continue to evolve. At the same time, the FAA also continues to take measures to improve the safety of the operations, including the safety of persons and property on the ground. As such, the FAA has modified Condition and Limitation No. 9 of Exemption No. 18339C, which required "[p]ersons participating in the operation of the UAS, including PICs, and VOs to provide consent to the operator, in a form and manner acceptable to the Administrator, that indicates they are aware of the potential risks of UA operations and provide consent to participate in the operation, notwithstanding those risks." The new Condition and Limitation in

this exemption, which is Condition and Limitation No. 10, applies to all persons participating in the operation, including the customer, if the customer retrieves the package, as the following summary reflects:

Condition and Limitation No. 10

Condition and Limitation No. 10 establishes that persons participating in the operation, which includes all operator personnel and the customer retrieving the package, if the customer retrieves the package, must provide consent to the operator to participate in the operation that indicates their awareness of the potential risks. The form and manner of the consent must be acceptable to the Administrator, and the record of the consent, must be made available to the Administrator upon request throughout the specified period.

The FAA is also adding Condition and Limitation No. 11 to this exemption to require the operator to provide instruction to the customer to maintain a safe distance from the UA during delivery. This condition and limitation has been included in other recent exemptions, e.g., Exemption No. 20179, and is summarized below.

Condition and Limitation No. 11

Condition and Limitation No. 11 requires the operator to notify each delivery customer and instruct the customer to remain clear of the UA during delivery by a distance sufficient to minimize the risk of injury.

Associated Elements

The FAA has addressed the need for special requirements for management of associated elements (AE) in Exemption No. 18163D and subsequent exemptions, including Exemption No.18339C. The FAA has previously noted that operators also "require flexibility in how they safely configure, manage, and maintain AE used in the operations, such as control stations, displays and pilot interface equipment, monitors, keyboards and computer mouse equipment, all of which are ground based and are best considered as part of the operator's system."[29]

In this exemption, the FAA is revising its requirement for the petitioner's management of changes to its AE, as stated in Condition and Limitation No. 30 of Exemption No. 18339C. In that exemption, Condition and Limitation No. 30 required the petitioner to obtain the FAA's approval to a make any change that would appreciably affect "the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA." Condition and Limitation No. 45 of this exemption instead requires that all changes made to the petitioner's AE be managed using an FAA-accepted process and incorporated into the petitioner's manual system. Under this exemption, FAA approval of changes affecting "the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA" is no longer required.

[29] Exemption No. 20179, p. 35.

Condition and Limitation No. 45

Condition and Limitation No. 45 states that changes to AE are to be managed using an FAA accepted process and incorporated into the operator's manual system, and requires the process to specify how it will be determined whether a change appreciably affects the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA.

14 CFR § 91.155 Basic VFR weather minimums.

Section 91.155 addresses basic VFR weather minimums and requires, in pertinent part, that no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less, than indicated minimums for different classes of airspace, including Class G airspace.

The petitioner did not request relief from § 91.155. However, the FAA has determined that relief is required. As a threshold matter, § 91.155 establishes flight visibility requirements that do not pertain to UA piloted remotely, and visibility of the airspace in which the UA is operating can only be defined from points on the ground. The relief is necessary insofar as the petitioner will no longer be required obtain a COA for its operations in Class G, as was discussed above.

In granting this relief, the FAA has concluded that the air traffic situation with which the PIC must contend is significantly different at altitudes under 400 ft., which UA operations are limited to in this exemption, than at higher altitudes.[30] For this reason, the FAA has determined that the need for higher visibility and ceiling requirements specified § 91.155 does not pertain to the UA operations under this exemption, and the visibility and ceiling requirements for UA can and should be more simply stated.

For the foregoing reasons, the FAA hereby grants relief to the petitioner from § 91.155 and deems that the relief will not adversely impact safety. To maintain the level of safety and ensure that weather and visibility conditions are adequate for the petitioner's UA operation, the FAA is only authorizing the petitioner to conduct VFR operations, and SVFR and IFR operations are prohibited. The FAA is also requiring that the operator adhere to specified visibility limits in Class G airspace.

These requirements are expressed in two conditions and limitations. Condition and Limitation No. 58 limits operations to VFR by expressly prohibiting operations using SVFR and IFR. This requirement was stated in Condition and Limitation No. 50 in Exemption No. 18339C, however the prohibition against IFR operations was not stated and is added in this exemption for clarity.[31] A separate condition and limitation, Condition and Limitation No. 59 in this exemption, states the FAA's simplified visibility requirements for the petitioner's operations in Class G airspace and requires the petitioner to document its procedures to adhere to these visibility and cloud

[30] Condition and Limitation No. 35 states that "[t]he altitude of the aircraft must not exceed 400 ft. above ground level (AGL)."
[31] Condition and Limitation No. 50 in Exemption No. 18339C prohibited flights using SVFR but not IFR. This exemption also expressly prohibits flights using IFR as well.

clearance minimums. The prior version of this condition and limitation in Exemption No. 18339C was Condition and Limitation No. 51.

Conditions and Limitations No. 58

Condition and Limitation No. 58 states that flights under special SVFR or IFR are not authorized.

Conditions and Limitations No. 59

Condition and Limitation No. 59 addresses requires visibility of at least 1 mile and clear of clouds for operations in Class G airspace, and states that the operator's methods and procedures to adhere to these requirements must be accepted by the FAA and documented in the operator's manual system.

14 CFR § 91.209 - Aircraft lights.

Section 91.209(a)(1) prescribes that no person may, during the period from sunset to sunrise (or, in Alaska, during the period a prominent unlighted object cannot be seen from a distance of 3 statute miles or the sun is more than 6 degrees below the horizon), operate an aircraft unless it has lighted position lights.

Exemption No. 18338 and subsequent amendments addressed equipment requirements for aircraft lights at night for this petitioner. However, in Exemption No. 18339C, the FAA considered the petitioner's request for relief from § 91.209(a)(1) to use anti-collision lights instead of position lights within the scope of the operational exemption. In Exemption No. 18339C, the FAA determined that "position lights would be ineffective and of negligible utility and use of anti-collision lights only [would be] sufficient for the petitioner's operation."[32] However, while granting relief from § 91.209(a)(1), the FAA required the petitioner's anti-collision lights to be on at all times. Condition and Limitation No. 52 of Exemption No. 18339C stated that "[f]or all operations, the UA must have an anti-collision light(s) as an additional means for collision mitigation that … are operable and on for all flight operations …"

In this exemption, the FAA has removed Condition and Limitation No. 52 of Exemption No. 18339C insofar as it required the UA to have an anti-collision light system and required the lights to be visible from a specific distance in specified conditions. This condition and limitation, which related to the equipment and performance requirements of the equipment, will now be included in the petitioner's § 44807 Exemption No. 18338E. However, the FAA has also considered safety cases that would necessitate the petitioner's PICs should be able to turn the anti-collision lights off in certain conditions during certain stages of flight, such as landing or delivery in fog. The FAA has determined that operational requirements for the petitioner's anti-

[32] Exemption No. 18339C, p. 5-6. The FAA agreed with the petitioner that its "use of the M2 aircraft, operated … using anti-collision lights that are *operable and on for all flights*, does not adversely affect safety without inclusion of position lights on the aircraft as would be required by compliance with § 91.209(a)(1)."

collisions lights should be amended. The new Condition and Limitation No. 60 requires the anti-collision lights to be on for all flights, but will permit exceptions when the PIC determines that the lights should be off.[33] Condition and Limitation No. 60 of this exemption is summarized below.

Condition and Limitation No. 60

Condition and Limitation No. 60 states that the anti-collision lights must be on for all flight operations, except when the PIC determines that, due to the operating conditions, it would be in the interest of safety to turn the lights off.

14 CFR Part 135 – Subpart B – Flight Operations

14 CFR § 135.79(a)(2) – Flight locating requirements

Section 135.79 requires that each certificate holder must have procedures established for locating each flight for which an FAA flight plan is not filed, for the purposes of reestablishing communication with the aircraft or enabling search and rescue operations. Section 135.79(a)(2) requires timely notification of an FAA facility or a search and rescue facility if an aircraft is overdue or missing.

In Exemption No. 18163, the FAA granted relief from the requirements of § 135.79(a), noting that that exemption holder's PIC display provided indications of the UA's position, speed, altitude, direction of flight, communication status, and flight path. As a result, the PIC could track the UA's progress and location aircraft at all times, which increases the probability of successful aircraft recovery in the event of a missing or lost aircraft. That exemption holder was also deemed to be the entity closest to the last known position of an overdue or missing aircraft. The FAA found that, with the active monitoring of the position of the small UAS on the pilot interface, that exemption holder was able to receive continuous feedback on the location of their aircraft. For these reasons, the FAA granted relief to § 135.79(a), and applied conditions and limitations specifying when notification of a missing or overdue aircraft was required and requiring monitoring of the pilot interface to track the aircraft and maintain situational awareness of the aircraft locations. In Exemption No. 20179, the FAA granted the same relief to another petitioner operating the Matternet M2 to conduct package delivery operations under part 135.

In reviewing this petition, the FAA noted that the petitioner's PICs will also monitor the status and maintain a high level of awareness of the UA's location at all times. The petitioner's planned flights will also be at low altitude and of short duration in the petitioner's highly structured route system for each of its well-defined operational areas. For these reasons, the FAA is also granting relief to this petitioner from § 135.79(a).

[33] The exception is consistent with § 91.209(b), which states that for part 135 operations "the anticollision lights need not be lighted when the pilot-in-command determines that, because of operating conditions, it would be in the interest of safety to turn the lights off."

In granting this relief, the FAA is requiring compliance with Condition and Limitation No. 12, which requires that the operator's manual includes procedures for the retrieval of missing or overdue aircraft and specifies when the FAA needs to be notified. In addition, the petitioner will be required to comply with Condition and Limitation No. 63, which requires that the PIC monitors the pilot interface to track each flight's location and maintain situational awareness. These conditions and limitations are described below.

Conditions and Limitations No. 12

Condition and Limitation No. 12 states that the operator's manual must include procedures for retrieving missing or overdue aircraft, and states when timely notification of an FAA facility is required.

Conditions and Limitations No. 63

Condition and Limitation No. 63 requires that the PIC must monitor the pilot interface to track each flight's location and maintain situational awareness of the flights that the PIC controls.

14 CFR Part 135 – Subpart C – Aircraft and Equipment

14 CFR § 135.161 Communication and navigation equipment for aircraft operations under VFR over routes navigated by pilotage.

Section 135.161(a) states that no person may operate an aircraft under VFR over routes that can be navigated by pilotage unless the aircraft is equipped with the two-way radio communication equipment necessary under normal operating conditions. The two-way radio communication equipment must be able to communicate with at least one appropriate station from any point on the route, except in remote location and areas of mountainous terrain where geographical constraints make such communication impossible. The equipment must also communicate with appropriate air traffic control from any point within Class B, Class C, or Class D airspace or within a Class E surface area designated for an airport in which flights are intended. Additionally, the equipment must receive meteorological information from any point en route, except in remote locations and areas of mountainous terrain where geographical constraints make such communication impossible. Section 135.161(b) states that no person may operate an aircraft at night under VFR over routes that can be navigated by pilotage unless the aircraft is equipped with two-way radio communication equipment that is sufficient and capable under normal operating conditions of fulfilling the functions described in § 135.161(a).

In considering this petition, the FAA noted that, due to size and weight constraints, VHF radio installation is currently not practical on small UA. For these reasons, the FAA has previously granted relief to §§ 135.161(a) and 135.161(b)(1) in Exemption No. 20179 at that exemption holder's request. The FAA also noted that the petitioner's GOM procedures call for communications with ATC via telephone when required and provide for the effectiveness and level of safety that the regulation was intended to ensure. For these reasons, relief from §§ 135.161(a) and 135.161(b)(1) is granted.

In granting this relief, and to ensure that the level of safety is maintained, the FAA is requiring in this exemption that the pilot interface be equipped with communications equipment that enables the PIC to monitor local air traffic control frequencies and communicate with others on the ground as needed for the operations. This equipment requirement ensures that the same two-way communications capability that the PIC would have using a two-way radio is maintained.

The FAA has established the Condition and Limitation No. 31 to ensure that the C2 requirements of the operation are clearly defined. Condition and Limitation No. 40 ensures that adequate devices are provided for the operation. The FAA included a requirement in Condition and Limitation No. 40 for a telephone to communicate with ATC because these operations will not be close enough for other methods of communication, such as a VHF radio, with ATC. These conditions and limitation are summarized below.

Condition and Limitation No. 31

Condition and Limitation No. 31 addresses requirements for the availability and use of communications devices for flight operations, includes a requirement that a C2 assessment be performed for all areas of operations to ensure coverage and availability, requires a monitoring plan to ensure connectivity, and ensures that lost link procedures are in place.

Condition and Limitation No. 40

Condition and Limitation No. 40 addresses performance capabilities of the communications equipment, specifies that required personnel must have enough devices for effective communications that provide for real-time communications, requires a secondary method of communications acceptable to the FAA, and establishes that a telephone must be available for communications with ATC.

14 CFR Part 135 – Subpart D – VFR/IFR Operating Limitations and Weather Requirements

14 CFR § 135.203 VFR: Minimum altitudes.

Section 135.203 prescribes minimum altitudes for VFR operations and states that no person may operate an airplane during the day below 500 ft. above the surface or less than 500 ft. horizontally from any obstacle. Section 135.203(a) states that no person may operate an airplane at night at an altitude less than 1,000 ft. above the highest obstacle within a horizontal distance of 5 miles from the course intended to be flown; or, in designated mountainous terrain, at an altitude less than 2,000 ft. above the highest obstacle within a horizontal distance of 5 miles from the course intended to be flown. Section 135.203(b) states that no person may operate a helicopter over a congested area at an altitude less than 300 ft. above the surface.

In Exemption No. 18339A, the petitioner was granted relief from § 135.203(a)(1) and (b) as requested to fly planned routes at a minimum altitude of 300 ft. AGL and a maximum altitude of 400 ft. AGL. The FAA found that the relief was required, noting that at times “the small UA will

be flown closer than 300 ft. over obstacles such as buildings and towers,[34] and, taking into account the details of the petitioner route development process, the FAA determined that the relief could be safely granted. At that time, the petitioner's Matternet M2 aircraft had not yet been classified as an aircraft or rotorcraft; therefore, relief was also granted from § 135.203(b). Later, in Exemption No. 18339C, relief from § 135.203(b) was rescinded[35] pursuant to the classification of the Matternet M2 aircraft as a rotorcraft in the type certificate issued on September 7, 2022 (TC No. R00030LA). A minimum clearance over man-made obstructions was prescribed by the FAA, most recently as Condition and Limitation No. 54 in Exemption No. 18339C, which stated that the petitioner's UA must "clear all terrain and all man-made obstructions by not less than 100 ft. until the UA has slowed to less than 20 knots and is within 250 ft. laterally of a takeoff or landing area."

In this exemption, the prior Condition and Limitation No. 54 in Exemption No. 18339C has been revised to provide greater flexibility to the petitioner for the takeoff and landing phases of its operation. The new Condition and Limitation is the same as that recently established in Exemption No. 20179 and is Condition and Limitation No. 36 in this exemption as described below..

Condition and Limitation No. 36

Condition and Limitation No. 36 states that the UA must clear all terrain and all man-made obstructions by not less than 100 ft. except when demonstrated as necessary for takeoff, landing, loading, or delivery.

14 CFR § 135.205 VFR: Visibility requirements

Section 135.205 addresses visibility requirements. Section 135.205(a) states that an airplane may not be operated under VFR at less than 1,000 ft. unless flight visibility is at least 2 miles. Section 135.205(b) prohibits operation of helicopter under VFR in Class G airspace at an altitude of 1,200 ft. or less above the surface, or within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport unless the visibility is at least ½ mile during the day or 1 mile at night.

"Flight visibility" is defined in 14 CFR § 1.1 as "the average forward horizontal distance from the cockpit of an aircraft in flight at which prominent unlighted objects may be seen and identified by day, and prominent lighted objects may be seen and identified by night." The FAA has previously determined[36] that this definition of flight visibility would not be applicable to a UA operator because its PIC is located on the ground and could not evaluate a forward horizontal distance from the cockpit. For this reason, the FAA has granted FAA-initiated relief to other petitioners in prior exemptions, including recently in Exemption No. 20179.

[34] Exemption No. 18339A.
[35] Exemption No. 18339C.
[36] Exemption No. 18601B.

Having reviewed the prior exemptions, the FAA has determined that the same relief is required by this petitioner because its PICs are also not onboard the UA during the planned operations. Therefore, the FAA grants relief from § 135.205 as specified below to enable the petitioner to substitute ground visibility for flight visibility when making visibility determinations.

To ensure that an equivalent level of safety is maintained, the FAA noted that, in Exemption No. 18163, it provided relief from § 135.205(a) and specified that UA flight operations utilizing VOs are only permitted when visibility is at least two statute miles. This relief has been granted more recently in other exemptions, e.g., Exemption No. 20179. In addition, the FAA has captured this requirement in its definition of "sufficient VOs" that is included in this exemption—"the minimum number of VOs required to continuously observe at least a 2 statute mile radius of airspace surrounding the UA in flight so as to ensure that the PIC receives sufficient notice to maintain the UA well clear of manned aircraft and not create a collision hazard for other UA." The FAA anticipates that operators will, in some cases, need to increase the number of VOs that will be used in an operation to ensure adequate visibility within the 2-statute-mile radius required. This would happen if decreased intervals between the VOs were required, or overlapping intervals were needed, due to specific conditions.

In this exemption, the FAA is granting relief from § 135.205 as there are no differences in operating capability between UA airplanes and UA rotorcraft related to cloud distances and visibility. The FAA is establishing conditions and limitations to address the positioning and responsibilities of VOs. These conditions and limitation will ensure that VOs are sufficient in number and are properly utilized when needed to ensure the safety of the planned operation.[37] In addition, cloud distance and visibility requirements are specified for operations in Class G airspace.[38] These requirements apply to all operations, including operations using GBSS, when GSCs are used instead of VOs. All of these conditions and limitations are described below.

Condition and Limitation No. 34

Condition and Limitation No. 34 requires that the operator have plans for the use of required personnel[39] to perform the planned operation, including, if VOs are used, a plan to ensure that there are a sufficient number of VOs to identify non-participating aircraft prior to their entry into the operational area, and that VOs are suitably located to timely notify the PIC to take action to avoid other aircraft, obstacles, and unforecasted weather.

Condition and Limitation No. 54

[37] In Exemption No. 18339C, versions of these conditions and limitations were Condition and Limitation Nos. 48, 43, 51, and 58 respectively.
[38] Cloud distance and visibility requirements were also discussed in the section above titled "14 CFR § 91.155 Basic VFR weather minimums."
[39] For purposes of this exemption, the term "required personnel" does not have the same meaning as it does when required by regulation or type certificate. Under this exemption, minimum required crew is set forth in conditions and limitations and in the operator's plan, but the operator may, for example, assign additional personnel who would be required to complete training as if they are required crewmembers.

Condition and Limitation No. 54 addresses preflight requirements and states that, prior to beginning flight operations, the PIC must verify that there are sufficient personnel available in accordance with the operator's required personnel plan, taking current conditions into account, and that these personnel have been briefed on topics to include the planned operations area and the current and forecasted weather conditions.

Condition and Limitation No. 59

Condition and Limitation No. 59 addresses requires visibility of at least 1 mile and clear of clouds for operations in Class G airspace, and states that the operator's methods and procedures to adhere to these requirements must be accepted by the FAA and documented in the operator's manual system.

Condition and Limitation No. 69

Condition and Limitation No. 69 requires that VOs continuously scan their areas of responsibility and immediately notify PICs when visibility of the airspace is impaired by weather, when new hazards or obstructions are noted, when conflicting air traffic poses a hazard, when open-air assemblies of people are observed, or when a weather condition is observed that could interfere with the operation of the aircraft or exceed the required weather minimums.

14 CFR Part 135 – Subpart E – Flight Crewmember Requirements

14 CFR § 135.243(b)(1) - Pilot in command qualifications

Section 135.243(b)(1) prescribes that no certificate holder may use a person, nor may any person serve, as PIC of an aircraft under VFR unless that person holds at least a commercial pilot certificate with appropriate category and class ratings and, if required, an appropriate type rating for that aircraft. Section 135.243(b)(2) prescribes that that person must have at least 500 hours of time as a pilot, including at least 100 hours of cross-country flight time, at least 25 hours of which were at night. Section 135.243(b)(3) prescribes that, for an airplane, that person must hold an instrument rating or an airline transport pilot certificate with an airplane category rating.

In Exemption No.18339B, FAA granted relief to the petitioner from the commercial pilot certificate requirement and permitted the petitioner's PICs to hold remote pilot certificates issued under part 107 with an FAA-issued pilot authorization after the PICs successfully completed the petitioner's FAA approved training and checking program. At that time, to overcome the absence of commercial pilot certificates, the FAA established that the petitioner must require that its PICs perform supervised operating experience (SOE) with check airmen (currently captured in Condition and Limitation No. 82 of Exemption No. 18339C) and increased line checks (currently captured in Condition and Limitation No. 81 of Exemption No. 18339C). With regard to the increased line checks, the FAA also established a condition and limitation requiring that every other line check be administered by an FAA Aviation Safety Inspector (ASI) (currently captured in Condition and Limitation Nos. 77 and 81 of Exemption No. 18339C) and that UPFSS document pilot performance on each check in the pilot's records, state the reasons for unsatisfactory performance, and made available to the Administrator upon request (Condition

and Limitation No. 77 of Exemption No. 18339C). In addition, the FAA established Condition and Limitation No. 80 of Exemption No. 18339C, which specified the increased recurrent training frequency for the petitioner's pilots who held remote pilot certificates issued under part 107 (pilots in the petitioner's "107+ pilot track").[40] Similar requirements were imposed in other exemptions, e.g., Exemption No. 18163A, when that petitioner's PICs held part 107 remote pilot certificates rather than commercial pilot certificates.

The FAA has conducted oversight of the petitioner's checking and training program for more than two years. The FAA has found the results of the petitioner's increased line checks, its competency checks, and its training to be consistently satisfactory. Routine FAA surveillance of the petitioner's operation has revealed no pilot safety concerns as underscored by the direct ASI observation during alternating line checks. This oversight has indicated that UPSFF pilots consistently perform satisfactorily, which the FAA considers indicia of a successful part 135 training program. For these reasons, the FAA has removed the conditions and limitations requiring SOE, increased line checks (including the requirement that alternating line checks be performed by an ASI), and the additional documentation of unsatisfactory performance on each line checks. UPSFF must now meet the regulatory requirements as set forth in §§ 135.293, 135.299, 135.343, and 135.351.

In revising Condition and Limitation No. 77 of Exemption No. 18339C, which is Condition and Limitation No.88 in this exemption, is more concisely written,[41] and includes additional specific requirements reflecting the different operating environments of the routes the PIC may be assigned, and use of the operator's collision avoidance capabilities (GBSS and/or VOs). Condition and Limitation No. 88 is summarized below.

Condition and Limitation No. 88

Condition and Limitation No. 88 states that initial and recurrent pilot testing, and also line checks, that are conducted to meet the requirements of §§ 135.293 and 135.299 respectively, must include representative airports and routes, representative collision avoidance scenarios, as well as operations and scenarios with the maximum UA-to-PIC ratio and Operations Base-to-PIC ratio sought for the individual pilot. The FAA is retaining a portion of current Condition and Limitation No. 79 of Exemption No. 18339C, which required PICs under the "commercial pilot certificate track" and VOs to complete recurrent training specified by 14 CFR § 135.351 every twelve calendar months. The FAA does not need to apply this condition and limitation to UPSFF's PICs as it already applies to them by regulation. The new Condition and Limitation No. 91 in this exemption is applicable to the petitioner's VOs only and is described below.

Condition and Limitation No. 91

[40] Section 135.343 requires training every 12 months. Condition and Limitation No. 80 increased the frequency to every six months.

[41] Provisions that duplicated a regulatory requirement have been removed, and the meaning "representative airport" in § 135.299(a)(3) as it applies to the petitioner's operation has been captured in a definition above.

Condition and Limitation No. 91 states that VOs must complete recurrent oral and flight training as described in § 135.343 and complete this recurrent training every twelve calendar months.

In addition, and further taking into account its positive evaluation of the petitioner's training effectiveness under the exemption, which was already noted above, the FAA find the petitioner training adequately prepares its PICs to serve in part 135 operations without the need for supervised operating experience. For this reason, in Condition and Limitation No. 82 of Exemption No. 18339C has been removed from this exemption. Notwithstanding the removal of the increased checking and training frequencies, as the petitioner's operation grows in complexity, including the addition of remote operations and use of GBSS as proposed in the current petition, the FAA has determined that additional specificity is needed to ensure that the petitioner's updated training program encompasses the necessary content. The FAA will require in Condition and Limitation No. 87 that representative airports and routes are included in the training, that collision avoidance scenarios are used, and that ratios are appropriate and reflect the actual operation into which the PIC will be assigned.

Condition and Limitation No. 87

Condition and Limitation No. 87 states that the operators PICs must be trained in accordance with the FAA-approved training program, and that the training must include representative airports and routes, representative collision avoidance scenarios, and scenarios with the maximum UA-to-PIC ratio and Operations Base-to-PIC ratio sought for the individual pilot.

Based on its positive evaluation of the petitioner's training effectiveness under the exemption, the FAA also will no longer require that "[p]rior to commencing operations under part 135, VOs used in the operation must complete an evaluation and supervised operating experience." This requirement was previously stated in Condition and Limitation No. 85 in Exemption No. 18339C. In addition, the requirement for training of VOs on "aircraft preflight procedures" that was stated in Condition and Limitation No. 85 in Exemption No. 18339C was changed to refer to training on "[p]reflight inspection, if performed by the VO."[42] The revised Condition and Limitation, which is Condition and Limitation No. 92 in this exemption, is summarized below.

Condition and Limitation No. 92

Condition and Limitation No. 92 requires the operator to maintain a VO training program, evaluate the VOs on eight specified knowledge areas that are identified, including preflight inspection if performed by the VO, and document the completion of these requirements in each VO's records.

Finally, the FAA previously imposed data collection requirements related to training and checking events to inform the FAA of the effectiveness of the petitioner's "107+ pilot track" training curriculum. These data collection requirements were formalized in Condition and

[42] A requirement for training of GSCs on preflight inspection, if performed by GSCs, is stated separately in Condition and Limitation No. 93.

Limitation No. 15 of Exemption No. 18339C, which stated that the operator must collect certain specified performance data related to its training program and make that data available to the administrator upon request. As was discussed above, the FAA has now conducted oversight of the petitioner's training program for more than two years and has found no indications of unsatisfactory training performance trends or safety concerns. Moreover, the FAA has collected data from both the petitioner's "107+ pilot track" and its "commercial pilot certificate track," and has found pilot performance associated with these tracks to be comparable. The level of performance reflected by this data was also similar to that of other operators with single track training curriculums for pilots with remote pilot certificates issued under part 107. For these reasons, the FAA no longer believes these training data collection requirements are necessary for this petitioner, and therefore Condition and Limitation No. 15 of Exemption No. 18339C has been removed from this exemption.

Changes to Conditions and Limitations

In addition to the changes discussed above, which pertain directly to specific relief that was granted to the petitioner, the FAA is making additional changes in this exemption that were not requested by the petitioner and are generally related to ensuring an equivalent level of safety. These changes reflect adjustments in the FAA's approach to management of the petitioner's operational ratios and improvements in the means by which FAA will require the petitioner to report data to the FAA about its operation and are discussed below.

In addition, FAA has made changes to certain conditions and limitations to align them more closely with those that the FAA has established for other similarly situated petitioners. These changes are also discussed below and described as Consistency with Similar Exemptions.

Finally, a number of conditions and limitations have been improved stylistically, consolidated, or in a few cases, restructured to improve readability and usability of the document. These changes are also noted below and described as organizational changes and clarifications or textual improvements.

Ratios

As the petitioner's operation has grown and increased in complexity, and as the FAA has gained additional insight from its oversight of the operation, the FAA has determined that the petitioner's operational ratios can now be modified to achieve greater flexibility without adverse safety impact. These changes are listed below.

First, the FAA has established a new requirement in Condition and Limitation No. 74, limiting the number of operations bases from which the PIC can simultaneously control multiple UA to the ratio authorized by the FAA for that PIC. This condition and limitation has been included in several recent exemptions, e.g., Exemption No. 20179, and ensures that the workload of each individual PIC does not exceed the limit that the FAA has established to maintain the safety of the operation.

Condition and Limitation No. 74

Condition and Limitation No. 74 states that no PIC may conduct operations at an Operations Base-to-PIC ratio greater than that authorized by the FAA for that individual PIC.

Second, two prior ratio requirements have been removed that were related to the number of PICs that may control UA in any individual VO's sector at the same time (the "VO-to-PIC ratio"). These ratio requirements were stated in Condition and Limitation No. 47 and Condition and Limitation No. 62 of Exemption No. 18339C. The FAA has determined that its specific oversight of these ratios is no longer necessary because the petitioner is able to manage VO workload in its required personnel plan in accordance with Condition and Limitation No. 34 of this exemption. The FAA has observed multiple instances in which various ratios have been used by UPSFF in an operation without adverse safety impact, and has determined that Condition and Limitation No. 34 is sufficient to ensure that the level of safety is maintained.

Finally, the FAA will continue to permit increases in the UA-to-PIC ratio and the Operations Base-to-PIC ratio, but validations after any increase will now be at the FAA's discretion rather than mandatory. This change is based on the FAA's determination that validation testing may not be required in all instances when the ratios are increased. Some changes are not significant in complexity and this allows for discretion to be used by the FAA. For this reason, the FAA has reduced the requirement for validations that was previously stated in Condition and Limitation Nos. 45 and No. 46 of Exemption No. 18339C. The new conditions and limitations in this exemption are Conditions and Limitations Nos. 56 and 57, which state that "[i]f the FAA determines validation testing is necessary the operator must successfully complete validation testing conducted by the FAA" for an increase in the ratio.

Data Collection

New data reporting requirements related to the petitioner's planned use of its GBSS and associated display tool, which together comprise its DAA system, were addressed above. The FAA is also improving and streamlining the petitioner's reporting of operational and event data to ensure that the FAA obtains the data it needs for safety decision making as UA package delivery operations evolve, and to ensure that information is not reported redundantly.

First, the FAA will now require occurrences of "Land Now" commands per calendar day to be reported regularly in the petitioner's monthly operations report required by Condition and Limitation No. 26 in the exemption (Condition and Limitation No. 17 in Exemption No. 18339C). This information was previously maintained by the operator and provided to the FAA upon request (Condition and Limitation No. 16 in Exemption No. 18339C, which is Condition and Limitation No. 17 in this exemption). In addition, the FAA is including new requirements in Condition and Limitation No. 26 for reporting of the total number of flight hours, the number of rejected loads per calendar day, and incidents when a C2 link was lost during an operation. Reporting of the remaining battery charge if a "Land Now" is initiated will also be required in the monthly report. This requirement was previously stated in Exemption No. 18339C in Condition and Limitation No. 41. Inclusion of this data in the monthly report will ensure that the

FAA has all of the information that it needs for analysis and proactive safety oversight of the operation.

It should be noted that Condition and Limitation No. 26 in the exemption does not include requirements for reporting of intervention, incident, or accidents. Reporting of these events is now prescribed in two conditions and limitations in this exemption—Condition and Limitation No. 24 addresses initial reporting within 24 hours of the event, and Condition and Limitation No. 25 addresses final reporting after an investigation of the event has been completed. This change, which includes stylistic improvements, streamlines the reporting and ensures that details in the event reports are not duplicated in the petitioners regular monthly reporting.

Condition and Limitation No. 24

Condition and Limitation No. 24 states that, in the event of an intervention, incident, or accident, the operator must submit an event report to the FAA within 24 hours describing the event, identifying known contributors, and identifying the crewmembers involved.

Condition and Limitation No. 25

Condition and Limitation No. 25 requires that following an intervention, incident, or accident, the operator must perform an investigation and submit a final report to the FAA based on the investigation, addressing causal factors and specifying details related to any corrective actions planned.

Condition and Limitation No. 26

Condition and Limitation No. 26 requires the operator to submit operational and safety data, as specified, on monthly basis in a report to the FAA no later than 10th day of the following month.

Communications During Operations

In Exemption No. 18339C, the FAA considered the provisioning of communications equipment to personnel for the petitioner's operation. The FAA stated its requirements for the provisioning communications equipment in Condition and Limitation No. 29 and included a prohibition against non-essential communications during flight operations. In this exemption, the FAA deemed this provision to be operational in nature and has established it separately in Condition and Limitation No. 66. The remaining portions of Condition and Limitation No. 29 of Exemption No. 18339C were transferred from this exemption to petitioner's Exemption No. 18338E issued under U.S.C. § 44807.

In further considering measures to maintain the level of safety in UA package delivery operations when there has been a loss of communications between required personnel. The FAA determined that additional requirements are needed to ensure that operations are ceased in any areas affected such an occurrence. A new Condition and Limitation No. 68 addresses this situation in this exemption, and has been included in other recent exemptions, e.g., Exemption No. 20179, for the same reason. This Condition and Limitation No. 68 is summarized below.

Condition and Limitation No. 68

Condition and Limitation No. 68 requires that, in the event of lost communications between the PIC and other required personnel, the UA must remain clear of, or vacate, all affected airspace sectors, loading areas, takeoff areas, landing areas, or delivery areas, until communications are restored.

Consistency with Similar Exemptions

In its analysis of the petitioner's requests, and in furtherance of its efforts to standardize conditions and limitations in its exemptions for use of UA for commercial package delivery, the FAA determined that certain conditions and limitations that were included in Exemption No. 18339C should be more consistent with other more recent exemptions.

The following Conditions and Limitations that were published in Exemption No. 18339C were therefore revised in this exemption for the reasons stated below:

Condition and Limitation No. 3 in Exemption No. 18339C was revised to include any UA operated under this exemption, not only aircraft without a standard airworthiness certificate. This is consistent with relief granted in Exemption No. 20179. This is now Condition and Limitation No. 2 in this exemption.

Condition and Limitation No. 25 in Exemption No. 18339C was revised to remove the requirement for the operator to perform a validation check as part of its ground risk assessment. The FAA has determined that a validation check of conformance with the conditions and limitations of the exemption is not required within the scope of a ground risk assessment. The revised Condition and Limitation is Condition and Limitation No. 32 in this exemption.

Condition and Limitation No. 26 in Exemption No. 18339C was revised to change the requirement for the operator to submit the initial configuration control document (CCD) listing each associated element, and any subsequent changes to the document, to the FAA for approval. This change is due to the fact that the change to the CCD is controlled by the AE change process, which is also accepted by the FAA. The revised condition and limitation, which calls for the FAA's acceptance of the CCD rather than approval, is Condition and Limitation No. 42 of this exemption. This change was made to correct the requirements when using an accepted process without needing further approval for minor changes. Condition and Limitation No. 42 also establishes the retention period for records related to the CCD as the duration of the exemption. Theses changes align the exemption with other exemptions in which all documentation of AE and changes to AE are accepted by the FAA rather than approved, and records are maintained for the duration of the exemption. See Exemption Nos. 18601B, 20179, and 19508.

Condition and Limitation No. 30 in Exemption No. 18339C applies to management of changes to AE and was restructured to clarify that all changes are managed in accordance with an FAA-accepted process, and that this process must be able to distinguish changes to AE that appreciably affect the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA. Major changes require FAA approval prior to implementation. This

change was made to correct the requirements when using an accepted process without needing further approval for minor changes.[43] The revised Condition and Limitation is Condition and Limitation No. 45 in this exemption.

Condition and Limitation No. 60 in Exemption No. 18339C was revised to apply to the PIC and other required personnel, as well as flight instructors, check pilots, or direct participants in the petitioner's operation. Specific reference to VOs was removed, however both VOs and GSCs are included within the meaning of "required personnel" as defined above. The new Condition and Limitation No. 72 in this exemption ensures that no person can serve in the roles or capacities named if that person knows or has reason to know that they have a physical or mental condition that would interfere with the safe operation of the aircraft.

Condition and Limitation No. 65 in Exemption No. 18339C was revised to state that the petitioner must provide training on this exemption and any applicable exemptions, waivers, or authorizations that the operator may hold to its personnel whose duties and responsibilities are impacted by these documents. The prior version applied only to training related to the operator's Exemption Nos. 18338 and 18339. The revised condition and limitation is Condition and Limitation No. 77 in this exemption.

Condition and Limitation No. 70 in Exemption No. 18339C stated that "PICs and VOs are limited to a maximum 14-hour duty day, and to a maximum 50-hour duty week." This requirement has been updated to align with other recent exemptions, e.g., Exemption No. 20179, to apply to all of the operator's required personnel. The revised Condition and Limitation is Condition and Limitation No. 81 in this exemption.

Condition and Limitation No. 71 in Exemption No. 18339C stated that "PICs and VOs must receive a minimum of one day of continuous rest, free of all responsibility for work or duty on behalf of the operator, per week, each week in which the operator schedules them for duty." This requirement has been updated to align with other recent exemptions, e.g., Exemption No. 20179, to apply to all of the operator's required personnel. The revised Condition and Limitation is Condition and Limitation No. 83 in this exemption.

Condition and Limitation No. 72 in Exemption No. 18339C stated that "PICs and VOs must take a minimum 10-hour continuous rest period within the 24 hours prior to reporting for duty." This requirement has been updated to align with other recent exemptions, e.g., Exemption No. 20179, to apply to all of the operator's required personnel. The revised Condition and Limitation is Condition and Limitation No. 82 in this exemption.

Reorganization and Restructuring

In its analysis of the petitioner's requests, and in furtherance of its efforts to consolidate conditions and limitations in its exemptions for use of UA for commercial package delivery, the

[43] Changes to accepted documents may be implemented prior to FAA review and acceptance. Approved documents must receive FAA approval prior to implementation.

FAA determined that certain conditions and limitations that were included in Exemption No. 18339 could be combined or restructured. These consolidations reduce the number of related conditions and limitations with similar content, and ensure that the requirements stated in the conditions and limitations are well-organized and presented in the clearest possible way.

Condition and Limitation Nos. 1 and 2 in Exemption No. 18339C were consolidated into Condition and Limitation No. 1 in this exemption. This condition and limitation now refers to operator's OpSpecs in general rather than the specific OpSpec A-003. As now stated, therefore the exemption will apply to any UA for which the operator holds an exemption under 49 U.S.C. § 44807 or a type certificate has been issued.

Condition and Limitation No. 23 in Exemption No. 18339C stated requirements for takeoff and landing areas to ensure a safe delivery and, among other things, ensure that access was restricted to "only persons participating in the operation." In this exemption, two conditions and limitations have been established instead—Condition and Limitation Nos. 29 and 30. Condition and Limitation No. 29 states requirements for takeoff, landing, and loading areas and ensures that access is restricted. Condition and Limitation No. 30 addresses delivery areas and specifies that the operator's manuals should state the distances at which non-participants must remain from the operation. The FAA determined that, because Condition and Limitation No. 30 applies to delivery areas owned by non-participants (such as the delivery recipient's backyard), paragraph (a) from Condition and Limitation No. 29 was not necessary for Condition and Limitation No. 30.

Condition and Limitation No. 31 in Exemption No. 18339C addressed requirements for validation via a functional flight test following maintenance, alterations, or system changes of any AE that could appreciably affect the operation or flight characteristics of the UA, including a requirement that the functional flight test be performed at least 500 ft. from non-participating people. This Condition and Limitation was divided into two Conditions and Limitations in this exemption. Condition and Limitation No. 45 addresses management of maintenance, alterations, or system changes to AE and the process used by the operator to identify changes to AE that appreciably affects the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA vs. changes that have no appreciable effect on the safe operation of the UA. Condition and Limitation No. 46 addresses flights to assess the correct operation of the UAS after any scheduled or unscheduled maintenance, including validation flights after significant changes, be conducted at a safe distance from non-participants. While Condition and Limitation No. 31 in Exemption No. 18339C had a standard 500 ft. limit for distance from non-participants, the FAA determined that it was more appropriate for Condition and Limitation No. 46 be a performance-based limitation in which the operator determines the appropriate safe distance. The FAA recognizes that what constitutes a safe distance may vary based on the scale of maintenance that has been performed. Condition and Limitation No. 46 therefore includes factors that the operator must use in determining what the proper safe distance is in any given situation.

Condition and Limitation No. 41 in Exemption No. 18339C addressed requirements for the PIC to ensure that battery power will be sufficient for the planned flight and include, among other

things, a requirement that "the operator must record, and make available to the FAA, the remaining battery charge, if a flight termination is initiated." In this exemption, this reporting requirement was incorporated into Condition and Limitation No. 26, which specifies operational and safety data that the petitioner is required to report to the FAA on a monthly basis.[44] The other provisions of Condition and Limitation No. 41 in Exemption No. 18339C remain in this exemption as Condition and Limitation No. 49, with a minor wording change in order to improve clarity.

Condition and Limitation No. 49 in Exemption No. 18339C stated that the operator must ensure that the aircraft is operated at a suitable altitude so as to minimize hazard to persons and property on the ground, and take equipment tolerances into account in determining these altitudes. This Condition and Limitation is now Condition and Limitation No. 37 in this document. It is now located related to planning routes in the areas of operation.

Condition and Limitation No. 51 in Exemption No. 18339C stated minimum altitude requirements for the petitioner's operation, as well as minimum requirements for visibility and cloud cover. This Condition and Limitation was divided into two conditions and limitations in this exemption. Conditions and Limitations No. 35 states that the altitude of the aircraft must not exceed 400 ft. AGL. Condition and Limitation No. 59 addresses cloud cover and visibility minimums for the petitioner's operations in Class G airspace.

Condition and Limitation Nos. 73 and 74 in Exemption No. 18339C were consolidated into Condition and Limitation No. 67 in this exemption which addresses procedures when PICs or other required personnel need to go off duty for any reason. The requirement that the personnel be "fit for duty" is now included in Condition and Limitation No. 72 in this exemption.

Condition and Limitation No. 75 in Exemption No. 18339C stated requirements for PICs, flight instructors and check pilots (when serving as required crewmembers), and VOs to hold a remote pilot certificate issued in accordance with 14 CFR part 107, as well as an FAA-issued pilot authorization. It also specified when these and other documents must be in the individual's possession and requirements for the operator to maintain copies of the documents. The latter requirements have been stated in subparagraphs of the new Condition and Limitation No. 84 in this exemption to improve readability.

Clarifications and Textual Improvements

In its analysis of the petitioner's requests, and in furtherance of its efforts to provide clarity in the conditions and limitations in its exemptions, the FAA has determined that certain conditions and limitations in Exemption No. 18339C could be improved by revisions in wording, structure, or style. These revisions ensure that, to the greatest extent possible, there are no misunderstandings as to the intent and purpose of each condition and limitation. Additionally, in some cases, the revisions are intended to align the conditions and limitations with standard terminology and

[44] This data must be reported by the 10th of each calendar month.

usage, or with definitions established in the exemption. The crosswalk provided at Appendix B can be used to locate each of these Conditions and Limitations as revised in this exemption.

The following conditions and limitations that were published in Exemption No. 18339C are therefore revised in this exemption for the reasons stated above: Conditions and Limitations Nos. 2, 4, 5, 7, 30, 33, 31, 44, 57, 58, 63, 69, 75 (reference to "initial cadre" was also removed). See Appendix B for the numbers of these conditions and limitations in this document.

Condition and Limitation No. 3 was amended in two ways. First, paragraph (d) was changed to cover both Will- and Will-Not Carry operations manuals and training programs, turning the focus to whichever is included in the OpSpec. This allows operators more flexibility without needing to amend this exemption. The FAA also added paragraph (e) in order to make this exemption more consistent with other exemptions, such as Exemption Nos. 18163D and 19111.

Condition and Limitiation No. 5 was amended to provide the FAA as a whole with the authority to approve the proposed changes, not just the Certificate Management Team (CMT).

In addition, Condition and Limitation No. 14 of Exemption No. 18339C was revised in this exemption to incorporated use of the term "required personnel" as defined above. The new Condition and Limitation in this exemption is Condition and Limitation No. 16.

Condition and Limitation No. 22 of Exemption No. 18339C was also revised and made more concise. The requirement that alternate landing areas[45] be known in advance to the PIC operating the aircraft was removed. It was removed to reduce redundancy because the condition and limitation already states that the alternate landing areas must be identified to the PIC. In addition, the provisions in the Condition and Limitation related to minimizing hazards to persons and property and avoiding prohibited roads and structures were combined. The new Condition and Limitation in this exemption is Condition and Limitation No. 28.

Condition and Limitation No. 43 of Exemption No. 18339C, which addresses requirements related to the preflight requirements and the preflight briefing, was revised to require that there are sufficient personnel available for the operation with reference to the operator's required personnel plan rather than its VO plan, and to require that current conditions be taken into account. The content of the preflight briefing was also clarified to include current and forecasted weather conditions, and also takeoff, landing, loading, and delivery areas. The new condition and limitation in this exemption is Condition and Limitation No. 54.

The FAA revised Condition and Limitation No. 55 of this exemption (previously Condition and Limitation No. 44 of Exemption No. 18339C) to use the term "pilot interface," rather than "control station," in order to improve clarity.

[45] In Condition and Limitation No. 22 of Exemption No. 18339C, the "emergency landing areas" was used. The FAA determined that the term "alternate landing areas" is more appropriate because these are used for precautionary landings that do not involve an emergency situation. In this exemption, the term "alternate landing areas" is used.

The FAA revised Condition and Limitation No. 80 of this exemption (previously Condition and Limitation No. 69 of Exemption No. 18339C) to restate the requirement for one check pilot per applicant. In the prior exemption, this was stated as a ratio, which could imply that the FAA would be amenable to requests to expand the ratio. However, the FAA does not intend at this time to change the requirement of one check pilot per pilot and therefore reworded Condition and Limitation No. 80 to remove such implication.

Removals from this Exemption

In its analysis of the petitioner's requests, and in furtherance of its efforts to further refine the conditions and limitations in its exemptions for the use of UA for commercial package delivery as the operations evolve, the FAA determined that certain conditions and limitations in Exemption No. 18399C could be removed from this exemption. Some of these conditions and limitations were transferred to the petitioner's § 44807 Exemption No. 18338E because they relate to capabilities of equipment onboard the aircraft more than to AE. In addition, several conditions and limitations were removed because they stated requirements that were deemed no longer needed for safety reasons, or because the reason for the condition and limitation no longer exists. Finally, several conditions and limitations were removed because applicable regulations already sufficiently state the requirement that the condition and limitation imposed. Conditions and limitations that were removed from the exemption are identified below:

Conditions and limitations that were published in Exemption No. 18339C and have now been transferred to the petitioner's § 44807 Exemption No. 18339E are Condition and Limitation Nos. 27, 28, 36, and 52.

Three conditions and limitations that were published in Exemption No. 18339C were determined to be no longer needed in the exemption. The first, Condition and Limitation No. 35, which required conformity within 120 days with new requirements related to AE, has been fulfilled. The second, Condition and Limitation No. 82, which required supervised operation experience for new PICs, has been deemed no longer needed for the reasons discussed above. Finally, Condition and Limitation No. 78, which stated that the petitioner would maintain two training tracks ("commercial pilot certificate track" and "107+ pilot track"), which is also no longer relevant to the exemption because, while some of the petitioner's PICs may hold a commercial pilot certificate, the FAA does not intend to require it and therefore no longer has need of the two training tracks.

After reviewing Exemption No. 18339C, the FAA concluded that Condition and Limitation No. 13 was unnecessary because the loading procedures were already included in the manuals referred to in Condition and Limitation No. 14 of that exemption. The FAA also concluded that Condition and Limitation No. 37 of that exemption was not necessary because the required use of actual weights for loading is already covered by OpSpec A096. Additionally, the FAA concluded that Condition and Limitation No. 38 of Exemption No. 18339C was unnecessary because a preflight check of barometric calibration system is already addressed in 14 CFR § 135.179(a). Finally, the FAA concluded that Condition and Limitation Nos. 39 and 40 of that exemption were unnecessary because the requirements in those conditions and limitations were duplicative of the requirements of 14 CFR § 91.7(b).

The FAA's Decision

In consideration of the foregoing, a grant of exemption is in the public interest. Therefore, pursuant to the authority contained in 49 U.S.C. §§ 106(f), 40113, and 44701, delegated to me by the Administrator, UPSFF is granted an exemption from 14 CFR § 61.23(a)(2)(ii), 61.3(a), 61.3(c)(1), 91.109(a), 91.113(b), 91.119(b)(c), 91.121, 91.151(a), 91.155, 135.21(f), 135.63(c)(d), 135.65(a)(d), 135.79(a)(2), 135.95(a), 135.143(c), 135.149(a), 135.161(a), 135.203(a), 135.205, 135.209(a), 135.243(b)(1), 135.243(b)(2), 135.243(b)(3), 135.267, 135.323 135.337(b)(1), 135.338(b)(1), 135.339(e)(3), 135.339(e)(4), 135.340(e)(3), and 135.340(e)(4), to the extent necessary to allow UPSFF to conduct part 135 air carrier operations for commercial package delivery, using UAS, subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, UPSFF is hereafter referred to as the operator.

Failure to comply with any of the conditions and limitations of this grant of exemption renders this entire exemption void.

I. General

1. This exemption from provisions of Parts 61, 91, and 135 applies only to UA that are listed in the operator's OpSpecs and for which either a type certificate has been issued or the operator holds a current authorization issued under 49 U.S.C. § 44807. This exemption may be utilized only in conjunction with an air carrier certificate issued by the Administrator.

2. UA operating under this exemption shall be maintained under a continuous airworthiness maintenance program (CAMP) as outlined in §§ 135.411(a)(2), 135.415, 135.417, and 135.423 through 135.443, or an approved aircraft inspection program (AAIP) under § 135.411(a)(1).

3. For part 135 operations, the operator must maintain and adhere to the following manuals and checklists, at the latest revision level, approved or accepted by the FAA:
   a. General Operations Manual (GOM)
   b. General Maintenance Manual (GMM)
   c. Training Program Manual
   d. Hazardous Materials Operations Manual and Training Program, Will- or Will-Not Carry in accordance with the operator's OpSpecs.
   e. Operations checklists for each UA listed in the operator's OpSpec A-003.

4. The operator shall not make any updates or revisions to its part 135 manuals that would affect the basis upon which the FAA granted this exemption, unless in accordance with a petition to amend this exemption.

5. Proposed changes to the size, scope or complexity of the operation, the number or type UA used, or the area of operations must be submitted to the FAA certificate management team (CMT) for approval. The FAA will determine whether validation testing or an amendment to the exemption is required.

6. All documents used by the operator to ensure the safe operation and flight of the UA, including this exemption and any 49 U.S.C. § 44807 exemption that the operator holds, as well as any documents required under 14 CFR §§ 91.9, 91.203, and 135.65 must be available to the PIC any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

7. If a discrepancy exists between the conditions and limitations in this exemption, the procedures outlined in the operator's part 135 manuals, the aircraft manufacturer's manuals, or any provisions issued under a waiver to any part 91 requirement, the operator must comply with the most restrictive provision.

8. This exemption is not valid for operations conducted outside of the United States.

9. Operations conducted under this exemption must be conducted in Class G airspace unless the operator has prior authorization from the Administrator to operate in Class B, Class C, or Class D airspace, or within the lateral boundaries of the surface area of Class E airspace designated for an airport.

10. Persons participating in the operation of the UAS, including all operator personnel and the customer retrieving the package, if the customer retrieves the package, must provide consent to the operator in a form and manner acceptable to the Administrator that indicates they are aware of the potential risks of UA operations and consent to participate in the operation, notwithstanding those risks. This document must be available for review upon request by the FAA for three years from the date of termination of employment or removal of consent.

11. The operator must provide notification to each delivery customer instructing the customer to remain clear of the UA during delivery by a distance sufficient to minimize the risk of injury.

12. The operator's manual must include procedures for the retrieval of missing or overdue aircraft. After conducting an initial search, if unable to locate a missing or overdue aircraft, the manual must have procedures for the timely notification of an FAA facility.

13. Remote pilot duty stations must be physically located within the United

States and the locations must be provided to the FAA prior to operations at any new location.

14. The operator must maintain a record of the total payload carried on each flight. This record must be kept for at least 30 days and be made available to the FAA upon request.

15. The operator must have procedures in its accepted manuals for the loading of its aircraft. Those procedures must ensure that the PIC has the necessary information to ensure that the maximum take-off weight (MTOW) and the maximum total payload are not exceeded for each flight.

16. The operator must ensure that all personnel have access to the portions of the manual system that pertain to their duties and responsibilities, during the performance of their duties.

17. The operator is responsible for maintaining the following data and providing the data to the FAA upon request:
    a. Date, name, and certificate number of the designated PIC responsible for each flight;
    b. Date, name, and certificate numbers of all other personnel required for each flight;
    c. Duration of each flight;
    d. The length of the rest period prior to each duty period for each of the required personnel;
    e. Total hours on duty per calendar day for each of the required personnel;
    f. Total duty time the designated PIC spent operating more than one aircraft, at the same time per calendar day, if authorized; and
    g. Total duty time the designated PIC spent operating the maximum authorized number of aircraft, at one time per calendar day, if authorized.

18. In the event of midair collision (MAC) with a crewed aircraft, the operator must immediately notify the responsible FSDO of the event and provide the date, time, location, altitude of the encounter, and avoidance maneuver taken, if any.

19. In the event of near-midair collision (NMAC) with a crewed aircraft, the operator must immediately notify the responsible FSDO of the event and provide the closest point of approach, date, time, location, altitude of the encounter, and avoidance maneuver taken, if any.

20. For flights that involved any well-clear violation with a crewed aircraft, other than an NMAC or a MAC, within 24 hours of the occurrence the operator must send a report to the responsible Flight Standards Office including closest point of approach, date, time, location and altitude of the encounter, and avoidance maneuver taken, if any.

21. For flights that involved any horizontal or vertical excursion from an authorized cell in the UAS Facility Map, within 24 hours of the occurrence the operator must send a report to the responsible Flight Standards Office including the maximum distance and duration of the excursion and the resolution of the excursion.

22. In the event of an unscheduled outage of the operator's strategic conflict detection and conformance monitoring service, within 24 hours of the outage the operator must send a report to the responsible Flight Standards Office indicating the loss of the service and the time to restore.

23. In the event of a malfunction of the operator's strategic conflict detection and conformance monitoring service, within 24 hours of the malfunction the operator must send a report to the responsible Flight Standards Office indicating the nature of the malfunction and the time to restore normal operation of the service.

24. In the event of any intervention, incident, or accident, the operator must submit an initial event report within 24 hours of the event. This report must be submitted to the responsible Flight Standards office, or as otherwise directed by the FAA, and provide the information listed below:
    a. Description of the event, including operational and environmental factors;
    b. Description of the initial, known contributing factors for the event; and
    c. Names of the crewmembers involved in the operation and their respective roles.

25. Following an intervention, incident, or accident, the operator must perform an investigation and submit a final event report with the results of the investigation to responsible Flight Standards Office, or as otherwise directed by the FAA. This report must address:
    a. Causal factors for the intervention, incident, or accident;
    b. Planned corrective actions to prevent recurrence of the event, including a timeline for implementation of the corrective actions.

26. The operator must submit an operations report for each calendar month by the 10th day of the following month. This report must be submitted to the responsible Flight Standards office or as otherwise directed by the FAA and provide the information listed below:
    a. The number of part 135 flights that were initiated;
    b. The number of part 135 flights that had any interventions, incidents, or accidents;
    c. If the operator has initiated any corrective actions to any previous interventions, incidents, or accidents, the specifics of such actions.

d. Total number of "Land Now" commands per calendar day distinguishing between aircraft, personnel-initiated, and reason;
e. Total number of rejected loads per calendar day;
f. The remaining battery charge if an "Land Now" is initiated.
g. For any C2 lost link event, the operator must provide the following:
   i. Duration of the event; and
   ii. Outcome of the event, e.g., link restored, "Land Now" performed, or UA returned to base.)

II. Areas of Operation

27. The operator must adhere to the following regarding general operations:
    a. Flight operations must minimize ground risk and not overfly the following, unless otherwise approved by the Administrator:
       i. Power plants;
       ii. Open-air assemblies of people;
       iii. Schools during times of operation (e.g., elementary, middle, high, preschool and daycare facilities);
       iv. Moving vehicles, except transitory flight operations;
       v. Roadways or highways, except transitory flight operations; and
       vi. Any other area deemed high risk by the operator during the flight route design process.
    b. Airspace Avoidance Areas:
       i. The UA must remain clear of known areas with increased aviation activity (e.g., ultralight areas, aerobatic boxes, or other areas with a high volume of low altitude traffic); and
       ii. The UA may not operate within 3 miles of any public use runway or other landing area, without suitable mitigations including outreach to the facility and communications before, during, and after operations, that are described in their GOM.

28. Prior to each operation, the operator must designate safe alternate landing areas that the UA can reach if it is unable to complete the intended flight, and identify such alternate landing areas to the PIC operating the aircraft. The alternate landing areas must:
    a. Provide for a landing without undue hazard to persons or property on the ground, and avoid structures and roads where overflight is not permitted;
    b. Be areas with a low likelihood of exposed persons, such as forested areas providing significant sheltering, farmland, or prairies.

29. To ensure the safety of the operation, the operator must adhere to the following regarding takeoff, landing, and loading areas:
    a. The areas must be limited to locations with access restricted to only persons participating in the operation;
    b. The areas must be free of any obstructions that could pose a hazard;

c. The distances at which non-participants must remain from the operation must be specified in the operator's accepted manuals.

30. To ensure the safety of the operation, the operator must adhere to the following regarding delivery areas:
    a. The areas must be free of any obstructions that could pose a hazard;
    b. The distances at which non-participants must remain from the operation must be specified in the operator's manuals.

31. For all current operations areas and prior to conducting operations in a new area, the operator must complete a communication service assessment and submit it to the FAA for acceptance. The assessment must, at a minimum, include:
    a. A C2 analysis for all areas of operations to include coverage and availability;
    b. A monitoring plan that ensures connectivity is maintained and availability issues addressed; and
    c. C2 lost link procedures, including an analysis of those procedures.

32. For all current operations areas, and prior to conducting operations in a new area, the operator must complete a ground risk assessment and submit it to the FAA for acceptance. The assessment must, at a minimum, include all of the following:
    a. Consideration of the provisions of Condition and Limitation Nos. 27, 28, 29, and 30.
    b. Pedestrian and moving vehicle analysis that will consider possible flight paths with the least presence of people and moving vehicles, during the planned time of operation.
    c. Terrain and Man-made Obstacle Analysis. For all terrain and man-made obstacles that the operator intends to overfly, the maximum height of such obstructions must be verified by the operator or a third party, utilizing methods acceptable to the Administrator.
    d. Known weather hazards in the area.
    e. Consideration of the implications of an unintended release of the types and quantities of hazardous materials authorized to be transported by the operator's Dangerous Goods Procedures Manual and OpSpec A055.

33. For all current operations areas, and prior to conducting operations in a new area, the operator must prepare a collision avoidance plan and submit the plan to the FAA for acceptance. The operator must receive a determination from the FAA if validation of the operation in the area is required prior to initiating operations. The plan must specify whether DAA will be used, to what extent VOs are needed, and how the operator will manage conflicts with other UA. If a 3PSP is used, the plan must ensure that the 3PSP's level of service meets the operational requirements, including the time required to

respond to 3PSP information and guidance and the impact of UAS system latencies and latencies in the C2 link.

34. The operator must develop and maintain plans for its use of required personnel in the operation. These plans must address the responsibilities of each role as described in the GOM and ensure sufficient coverage for each area in which operations will be conducted. The plan for use of VOs must ensure that sufficient VOs are used, and the VOs are properly positioned, to give the PIC sufficient notice to keep the UA clear of all manned aircraft and other UA. The plan must also ensure that VOs, or GSCs if used for the operation, can sufficiently perform observation, and detect obstacles and any unforecasted weather affecting the operating area, to ensure the safety of the operation.

35. The altitude of the aircraft must not exceed 400 ft. above ground level (AGL).

36. The UA must clear all terrain and all man-made obstructions by not less than 100 ft except when demonstrated as necessary for takeoff, landing, loading, or delivery.

37. The operator must:
    a. Ensure the aircraft is operated at a suitable altitude that would not cause a hazard to persons or property on the surface; and
    b. Consider all equipment tolerances when determining such altitudes.

III. Unmanned Aircraft System, Including Maintenance

38. The UA must have a flight control system with “land now” capability.

39. The operator shall not dispose of its life-limited parts in a manner that would lead to them being installed on another type-certificated aircraft without the recipient having knowledge of the accumulated time on the part.

40. Communications capability must be sufficient for the PIC to communicate effectively during operations with required personnel, as well as outside entities as needed. The following are also required:
    a. Required personnel must be provided with enough devices for effective communications;
    b. All devices must provide for real-time communications; and
    c. A secondary method of communication must be available and acceptable to the FAA.
    d. A telephone must be available for communications with ATC.

41. The operator must maintain a conflict management capability to ensure that the PIC is able to keep the UA clear of any manned aircraft and other UA.

a. For management of conflict with manned aircraft, this capability may include use of a DAA system if approved by the FAA by the FAA in accordance with C&L 48. In operating locations where DAA is not used or is not available, use of VOs is required to maintain the capability.
b. For management of conflict with other UA, the operator may use technical means of strategic deconfliction and conformance monitoring, including services provided by a 3PSP, if approved by the FAA in accordance with C&L 48.
c. The capability must include maintenance of data necessary to support the data reporting requirements stated in this exemption.

42. The operator must maintain a configuration control document acceptable to the FAA that lists each associated element required to operate the UA in normal, abnormal, and emergency operations which must include, but is not limited to, ground station hardware, ground station software, ground station peripherals, offboard software, launch and recovery systems, launch pad, base stations, targets, GPS source provider, data links to include data link providers, handheld communication devices or systems.
    a. The AE list must identify the specific elements or minimum specifications for the elements necessary for operation of the UA.
    b. The operator must determine through an evaluation and/or demonstration if the UA and/or AE identified in the configuration control document are suitable for operations.
    c. The configuration control document must reflect the latest UAS configuration.
    d. The operator must retain all records related to the configuration control document for the duration of the exemption and provide those records to the FAA upon request.

43. The operator must document and adhere to policies and procedures to assure that all AE of the UAS are capable of meeting the AE's intended function prior to and during each operation.

44. The operator must describe in its manual system any training and qualification requirements necessary for personnel who maintain each of the AE.

45. All changes to AE will be managed using an FAA-accepted process that is incorporated into the operator's manual system. This process must detail how the operator will identify changes to AE that appreciably affect the reliability, operational characteristics, or other characteristics affecting the safe operation of the UA. All major changes require FAA approval prior to implementation.

46. Any flights required to assess the correct operation of the UAS after any

scheduled or unscheduled maintenance must be conducted at a safe distance from non-participants. Any alterations or system changes of any AE that could appreciably affect the operation or flight characteristics of the UA must be validated in accordance with procedures set forth in the operator's manual prior to conducting further operations under this exemption. If the validation includes a flight, these flights must be conducted at a safe distance from non-participants. When determining a safe distance, the operator must consider flight testing factors such as type of UAS, flight altitude, airspeed, and kinetic energy.

47. The operator must implement an AE error reporting, evaluation and mitigation program. The operator must evaluate any failures, anomalies, or other in-service problems to ensure that they do not represent a system deficiency that could cause an unsafe condition or result in a subsequent noncompliance with regulations or conditions and limitations. If a failure, anomaly, or in-service problem may result in subsequent noncompliance, the operator must correct the issue to prevent that non-compliance and must report the issue and correction to the FAA via the UAS Service Difficulty Reporting system at https://avssp.faa.gov/avs/afs600/UAS-IPP/SitePages/Home.aspx.

48. For FAA approval of a system to support conflict management, the operator must complete the following process:
    a. Submit the following to the FAA:
        iii. Information detailing the system's conformity with pertinent sections of industry standards related to collision avoidance systems, ground based surveillance systems, and detect and avoid systems.
        iv. A declaration, and provide evidence supporting its declaration, that its system has been tested and determined to meet these requirements. This evidence should include documentation of the testing, including the specific encounter sets used in the tests, to verify system's performance.
    b. Once these documents have been submitted, an operational suitability evaluation may be required.
    c. Once the system is evaluated, an operational validation may be required under part 135 prior to amendment of the petitioner's OpSpecs to authorize use of the system and define the permitted operational areas where the system may be used.

IV. Preflight

49. The PIC is prohibited from beginning a flight unless considering wind and forecast weather conditions:

a. There is enough available power for the UA to conduct the intended operation and to operate after that with at least:
   i. The minimum power reserve to ensure a remaining charge sufficient to facilitate a descent and landing without undue hazard to persons or property on the surface; or
   ii. The UA manufacturer's stated minimum power reserve, whichever is greater;
b. The operator has contingency plans acceptable to the FAA in the case of battery depletion greater than anticipated.

50. Prior to each flight, the operator must consult advisory and warning publications or programs for any GPS availability or quality issues and confirm that GPS is expected to be available throughout the intended operation with acceptable performance. Additionally, the operator must consider the effect of degraded GPS inputs induced by adjacent structures and implement appropriate mitigations.

51. Prior to beginning flight operations, the PIC must review NOTAMs and, if the NOTAMS indicate other UA activity or any other aviation activity in the intended operating area, ensure that operator contacts the other operator(s) to deconflict the activities.

52. The operator must request that a distant NOTAM (D) be issued by contacting the Flight Services NOTAM line at 1-877-4-US-NTMS (1-877-487-6867) not more than 72 hours in advance, but not less than 24 hours prior to the operation. The area of operation defined in the NOTAM must only be for the actual area to be flown for each day and defined by a point and the minimum radius required to conduct the operation.

53. In the event the operational area overlaps a Military Training Route, the operator must contact the Military Airspace Scheduling Office for the route 24 hours in advance for coordination and deconfliction of the activities. Military Airspace Scheduling Office contact information, including both commercial (C) and Defense Switched Network (DSN) phone numbers, for each route can be found in "Area Planning, Military Training Routes, North and South America (AP/1B)," which is available at https://www.daip.jcs.mil/pdf/ap1b.pdf.

54. Prior to beginning flight operations, the PIC must verify that there are sufficient personnel available in accordance with the operator's required personnel plan, taking current conditions into account. The PIC must also:
   a. Ensure that all required personnel have been briefed on the following:
      i. Designated positions, physical locations, responsibilities, and crew resource management;
      ii. Planned operations area.

iii. Current and forecasted weather conditions;
iv. Takeoff, landing, loading, and delivery areas;
v. Ground risks;
vi. Alternate landing sites;
vii. Verification of flight profile and course; and
viii. Procedures for avoidance of other aircraft.

b. Be familiar with all the content from the briefing.

55. The PIC must verify that the pilot interface is configured to control the intended UA before flight.

V. Flight Operations

56. The operator may only conduct operations at a UA-to-PIC ratio of 1:1 unless otherwise authorized by the FAA. If the FAA determines validation testing is necessary the operator must successfully complete validation testing conducted by the FAA for an increase in the UA-to-PIC ratio.

57. The operator may only conduct operations at an Operations Base-to-PIC ratio of 1:1 unless otherwise authorized by the FAA. If the FAA determines validation testing is necessary, the operator must successfully complete validation testing conducted by the FAA for an increase in the Operations Base-to-PIC ratio.

58. Flights under special visual flight rules (SVFR) or instrument flight rules (IFR) are not authorized.

59. For VFR operations in Class G airspace, ground visibility must be at least 1 mile and clear of clouds. The operator's methods and procedures to maintain visibility and cloud clearance requirements must be accepted by the FAA and documented in the operator's manual system.

60. The anti-collision lights must be on for all flight operations, except when the PIC determines that, because of operating conditions, it would be in the interest of safety to turn the lights off.

61. The PIC must ensure that the UA remain clear of, and give way to, any manned aircraft at all times, and does not get so close to any other UA as to create a collision hazard.

62. The PIC may not operate the UA from any moving vehicle or aircraft.

63. The PIC must monitor the pilot interface to track each flight's location and maintain situational awareness of each aircraft under that PIC's control.

64. The PIC must abort the flight operation if unpredicted circumstances or

emergencies that could potentially degrade the safety of persons or property arise. The PIC must terminate flight operations without causing undue hazard to persons or property in the air or on the ground.

65. The PIC must immediately notify ATC of any flyaway or loss of control that has resulted in a loss of situational awareness or could cause a hazard to other aviation activities.

66. Non-essential communications during flight operations are prohibited.

67. PICs and other required personnel may not leave their duty station during the operation of a flight unless they have been replaced in accordance with the procedures described in the operator's GOM. If a replacement is not possible, the following requirements apply:
    a. For a PIC, all UA being operated in the PIC's area must return to the Operations Base in accordance with the procedures specified in the operator's GOM.
    b. For other required personnel, all UA must remain clear of, or vacate, any affected sectors, loading areas, takeoff areas, landing areas, or delivery areas.

68. If communications are lost between the PIC and other required personnel, all UA must remain clear of, or vacate, any affected airspace sectors, loading areas, takeoff areas, landing areas, or delivery areas, until communications are restored.

69. VOs, when used for the operation, must continuously scan their area(s) of responsibility, maintain communication with the PIC at all times, and immediately notify the PIC whose areas of operations are affected whenever they observe:
    a. Conflicting air traffic;
    b. Any new obstruction not plotted on the obstruction map or obstruction database;
    c. The erection of an obstruction that begins during the course of a shift;
    d. Any other obstruction or hazard identified during the flight operation;
    e. Any open-air assemblies of people;
    f. Any weather condition that could interfere with the operation of the aircraft or exceed the required weather minimums; or
    g. Any weather condition that causes the VO to be unable to view the assigned airspace.

70. GSCs, when used for the operation, must conduct a visual survey of their area(s) of responsibility at designated intervals as determined by the collision avoidance plan and notify the PIC whose areas of operations are affected whenever they observe:

a. Any new obstruction not plotted on the obstruction map or obstruction database;
b. The erection of an obstruction that may begin during operations;
c. Any other obstruction or hazard, that may pose a risk to the operation;
d. Any open-air assemblies of people; or
e. Any weather condition that could interfere with the operation of the aircraft or exceed the required weather minimums.

VI. Required Personnel

71. No person may serve in more than one operational role concurrently.

72. No person may act as a PIC or other required personnel, or serve as a flight instructor, check pilot, or direct participant in the operator's part 135 operation if that person knows or has reason to know that they have a physical or mental condition that would interfere with the safe operation of the aircraft.

73. No PIC may conduct operations at a UA-to-PIC ratio greater than that authorized by the FAA for that individual PIC.

74. No PIC may conduct operations at an Operations Base-to-PIC ratio greater than that authorized by the FAA for that individual PIC.

75. Required personnel must be sufficient to minimize ground and air hazards.
    a. When the operator's approved DAA system is used during a flight operation, GSCs must be used.
    b. When the operator's approved DAA system is not available or becomes inoperable, VOs must be used or the operation must be discontinued.

VII. Training, Certification and Duty

76. The operator is responsible for ensuring all persons responsible for the loading of its aircraft have been trained on the operator's loading procedures.

77. The operator must provide training on this exemption and any applicable exemptions, waivers, or authorizations that the operator may hold, to all persons whose duties and responsibilities are impacted by these documents.

78. Flight instructors and check pilots must remain in the immediate vicinity of a person being trained or checked.

79. The ratio of PIC-to-flight instructor must be listed in the approved training program.

80. A check pilot may not evaluate more than one applicant at a time.

81. Required personnel are limited to a maximum 14-hour duty day, and to a maximum 50-hour duty week.

82. Required personnel must take a minimum 10-hour continuous rest period within the 24 hours prior to reporting for duty.

83. Required personnel must receive a minimum of one day of continuous rest, free of all responsibility for work or duty on behalf of the operator, per week, each week in which the operator schedules them for duty.

84. Each PIC, check pilot, flight instructor and VO must hold a remote pilot certificate issued in accordance with 14 CFR part 107 and remain current in accordance with 14 CFR § 107.65. In addition, each PIC and VO must also hold an FAA-issued pilot authorization and comply with the conditions and limitations therein to serve in their designated roles.
    a. When serving as a required crewmember in an operation, each PIC, VO, flight instructor, and check pilot must have the remote pilot certificate, a government-issued photo ID and a copy of the pilot authorization in their possession, and make such documents available upon request from the Administrator.
    b. The operator must keep in its records a copy of the any pilot certificates and pilot authorizations that each person holds in accordance with 14 CFR § 135.63(a)(4)(ii).

85. Each PIC is required to hold at least a third-class medical certificate, as must each check pilot and flight instructor when serving as a required crewmember. A copy of this certificate must be kept in the pilot's records.

86. If any of the operator's PICs, check pilots, or flight instructors holds a "3rd Class Letter of Evidence" or any restrictions related to color vision control, the pilot interface must not rely on use of color alone to convey information on the screen.

87. PICs must be trained in accordance with the FAA-approved training program. The training must include representative airports and routes, representative collision avoidance scenarios, and scenarios with the maximum UA-to-PIC ratio and Operations Base-to-PIC ratio sought for the individual pilot.

88. Initial and recurrent pilot testing conducted to meet the requirements of § 135.293, and line checks conducted to meet the requirements of § 135.299, must include representative airports and routes, representative collision avoidance scenarios, and scenarios with the maximum UA-to-PIC ratio and Operations Base-to-PIC ratio sought for the individual pilot.

89. Completion of the checking requirements required by §§ 135.293 and

135.299 does not satisfy recent experience requirements of §§ 61.56(d)(1) and 107.65(c).

90. Each PIC is required to log flight information in accordance with his or her pilot authorization and must make the log available to the Administrator upon request.

91. VOs must complete recurrent oral and flight training every twelve calendar months in accordance with § 135.343.

92. VOs must be trained in accordance with the FAA-approved training program and evaluated by an approved check pilot or a designated FAA Operations Aviation Safety Inspector. For the evaluation, the grace month provision stated in § 135.301 applies. The operator must document the completion of these requirements in each of the VO's records. The evaluation must include the following areas:
    a. Duties and responsibilities as defined in the GOM to include normal and abnormal procedures;
    b. Use of checklists;
    c. Preflight inspection, if performed by the VO;
    d. Communication and coordination procedures (i.e., crew resource management) with the PIC and other operations personnel as described in the GOM and the Unmanned Flight Manual (UFM);
    e. General meteorology focused on cloud types and associated weather conditions that may be hazardous to the aircraft;
    f. Use of scanning techniques and the ability to identify and report to the pilot(s) any airspace hazards, aircraft distance from clouds, and any other reportable information as described in the GOM;
    g. Knowledge of the operational environment (e.g., airports, active helipads/routes, hospitals) and the ability to maintain situational awareness for the operation; and
    h. If the VO is qualified in a VO role for the operator outside of part 135, knowledge of operational differences between the part 135 operations and any other authorized operations that pertains to his or her responsibilities.

93. GSCs must be trained in accordance with the FAA-approved training program and evaluated by an approved check pilot or a designated FAA Operations Aviation Safety Inspector. For the evaluation, the grace month provision stated in § 135.301 applies. The operator must document the completion of these requirements in each of the GSC's records. The evaluation must include the following areas:
    a. Duties and responsibilities as defined in the GOM to include normal and abnormal procedures;
    b. Use of checklists;
    c. Preflight inspection, if performed by the GSC;

d. Communication and coordination procedures (i.e., crew resource management) with the PIC and other operations personnel as described in the GOM;
e. General meteorology focused on cloud types and associated weather conditions that may be hazardous to the aircraft;
f. The ability to identify and report to the pilot(s) any airspace hazards, aircraft distance from clouds, and any other reportable information as described in the GOM; and
g. Knowledge of the operational environment (e.g., airports, active helipads/routes, hospitals) and the ability to maintain situational awareness for the operation.

94. Each VO must be able to see all potential hazards with vision that is unaided by any device other than corrective lenses or eyeglasses.

95. If personnel other than the PIC perform preflight inspections, these personnel must have, and maintain in their possession, either of the following:
    a. A valid Remote Pilot Certificate with a letter of authorization issued by the certificate holding office to conduct preflight, or
    b. A Repairman Certificate issued by the operator with authorization to perform preflight tasks.

The Effect of the FAA's Decision

The FAA's decision amends Exemption No. 18339C to 18339D and changes the termination date to September 30, 2025, unless sooner superseded or rescinded.

To request an extension or amendment to this exemption, please submit your request by using the Regulatory Docket No. FAA-2019-0628 (http://www.regulations.gov). In addition, you should submit your request for extension or amendment no later than 120 days prior to the expiration listed above, or the date you need the amendment, respectively.

Any extension or amendment request must meet the requirements of 14 CFR § 11.81.

Sincerely,

David H. Boulter
Associate Administrator for Aviation Safety
Federal Aviation Administration

Appendix A

Supplemental Documents

Ground Based Surveillance System (GBSS)	The GBSS displays the potential air risks to the Remote Pilot in Command (RPIC) with an electronic display providing the RPIC with the necessary situational awareness for effective aeronautical decision making to mitigate the air risk.
Matternet M2	The Matternet M2 is a quad copter with an auto-flight system that is responsible for the flight control and navigation.
General Operations Manual (GOM)	The main processes defined in the GOM are designed with key procedures with embedded controls designed to ensure procedural completion. The interfaces between the processes and procedures are clearly identified to ensure compatibility with other departments and processes. The overall process authority to create and modify the policies, procedures, information and instruction for each process are clearly identified.
Flight Training Manual (FTM)	The policies, procedures, information and instructions in this manual have been developed to ensure compliance with applicable Code of Federal Regulations (CFR), Operations Specifications (OpSpecs) and the Air Carrier Certificate.

Appendix B

Crosswalk

18339D	18339C
1	1 &2
2	3
3	4
4	New
5	5
6	6
7	7
8	8
9	New
10	9
11	New
12	New
13	10
14	11
15	12
16	14
17	16
18	New
19	New
20	New
21	New
22	New
23	New
24	18
25	New
26	17
27	21
28	22
29	23
30	New
31	24
32	25
33	New

18339D	18339C
34	48
35	New
36	54
37	49
38	19
39	20
40	29
41	New
42	26
43	32
44	33
45	30
46	31
47	34
48	New
49	41
50	42
51	New
52	New
53	New
54	43
55	44
56	46
57	45
58	50
59	51
60	New
61	53
62	55
63	57
64	56
65	New
66	New
67	New
68	New
69	58
70	New
71	59

18339D	18339C
72	60
73	61
74	New
75	New
76	64
77	65
78	67
79	68
80	69
81	70
82	72
83	71
84	75
85	76
86	New
87	New
88	77
89	83
90	84
91	79
92	85
93	New
94	63
95	86
End D	End C
Deleted	13
Deleted	15
Deleted	27
Deleted	28
Deleted	35
Deleted	36
Deleted	37
Deleted	38
Deleted	39
Deleted	40
Deleted	47
Deleted	62
Deleted	66

18339D	18339C
Deleted	73
Deleted	74
Deleted	78
Deleted	80
Deleted	81
Deleted	82