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

800 Independence Ave., S.W.
Washington, D.C. 20591

August 14, 2015

Exemption No. 12455
Regulatory Docket No. FAA–2015–1755

Mr. R. Patrick Thornberry
Counsel for CameraBee, LLC
600 East 96th Street
Suite 600
Indianapolis, IN 46240

Dear Mr. Thornberry:

This letter is to inform you that we have granted your request for exemption. It transmits our decision, explains its basis, and gives you the conditions and limitations of the exemption, including the date it ends.

By letter dated May 5, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of CameraBee, LLC (hereinafter petitioner or operator) for an exemption. The petitioner requested to operate an unmanned aircraft system (UAS) to conduct aerial data collection and/or closed-set motion picture and filming.

See Appendix A for the petition submitted to the FAA describing the proposed operations and the regulations that the petitioner seeks an exemption.

The FAA has determined that good cause exists for not publishing a summary of the petition in the Federal Register because the requested exemption would not set a precedent, and any delay in acting on this petition would be detrimental to the petitioner.

Airworthiness Certification

The UAS proposed by the petitioner is the Freefly Systems Alta and the Blade 350X.[1]

[1] The petitioner also proposed to operate the Hoverly Systems Erista and the Hoverfly Systems. The FAA must conduct an assessment on these aircraft, which also includes a finding that the proposed UAS meet the conditions in Section 333 of Public Law 112−95. When the FAA completes its review, we will proceed accordingly and no further action will be required by the petitioner.

The petitioner requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*. In accordance with the statutory criteria provided in Section 333 of Public Law 112−95 in reference to 49 U.S.C. § 44704, and in consideration of the size, weight, speed, and limited operating area associated with the aircraft and its operation, the Secretary of Transportation has determined that this aircraft meets the conditions of Section 333. Therefore, the FAA finds that the requested relief from 14 CFR part 21, *Certification procedures for products and parts, Subpart H—Airworthiness Certificates*, and any associated noise certification and testing requirements of part 36, is not necessary.

The Basis for Our Decision

You have requested to use a UAS for aerial data collection[2] or/and closed set motion picture and filming. The FAA has issued grants of exemption in circumstances similar in all material respects to those presented in your petition. In Grants of Exemption Nos. 11062 to Astraeus Aerial (*see* Docket No. FAA−2014−0352), 11109 to Clayco, Inc. (*see* Docket No. FAA−2014−0507), 11112 to VDOS Global, LLC (*see* Docket No. FAA−2014−0382), and 11213 to Aeryon Labs, Inc. (*see* Docket No. FAA−2014−0642), the FAA found that the enhanced safety achieved using an unmanned aircraft (UA) with the specifications described by the petitioner and carrying no passengers or crew, rather than a manned aircraft of significantly greater proportions, carrying crew in addition to flammable fuel, gives the FAA good cause to find that the UAS operation enabled by this exemption is in the public interest.

Having reviewed your reasons for requesting an exemption, I find that—

- They are similar in all material respects to relief previously requested in Grant of Exemption Nos. 11062, 11109, 11112, and 11213;
- The reasons stated by the FAA for granting Exemption Nos. 11062, 11109, 11112, and 11213 also apply to the situation you present; and
- A grant of exemption is in the public interest.

Our Decision

In consideration of the foregoing, I find that 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, CameraBee, LLC is granted an exemption from 14 CFR §§ 61.23(a) and (c), 61.101(e)(4) and (5), 61.113(a), 61.315(a), 91.7(a), 91.119(c), 91.121, 91.151(a)(1), 91.405(a), 91.407(a)(1), 91.409(a)(1) and (2), and 91.417(a) and (b), to

[2] Aerial data collection includes any remote sensing and measuring by an instrument(s) aboard the UA. Examples include imagery (photography, video, infrared, etc.), electronic measurement (precision surveying, RF analysis, etc.), chemical measurement (particulate measurement, etc.), or any other gathering of data by instruments aboard the UA.

the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection and/or closed set motion picture and filming. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

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

Failure to comply with any of the conditions and limitations of this grant of exemption will be grounds for the immediate suspension or rescission of this exemption.

1. Operations authorized by this grant of exemption are limited to the Freefly Systems Alta and the Blade 350X when weighing less than 55 pounds including payload. Proposed operations of any other aircraft will require a new petition or a petition to amend this exemption.

2. Operations for the purpose of closed-set motion picture and television filming are permitted.

3. The UA may not be operated at a speed exceeding 87 knots (100 miles per hour). The exemption holder may use either groundspeed or calibrated airspeed to determine compliance with the 87 knot speed restriction. In no case will the UA be operated at airspeeds greater than the maximum UA operating airspeed recommended by the aircraft manufacturer.

4. The UA must be operated at an altitude of no more than 400 feet above ground level (AGL). Altitude must be reported in feet AGL.

5. The UA must be operated within visual line of sight (VLOS) of the PIC at all times. This requires the PIC to be able to use human vision unaided by any device other than corrective lenses, as specified on the PIC's FAA-issued airman medical certificate or U.S. driver's license.

6. All operations must utilize a visual observer (VO). The UA must be operated within the visual line of sight (VLOS) of the PIC and VO at all times. The VO may be used to satisfy the VLOS requirement as long as the PIC always maintains VLOS capability. The VO and PIC must be able to communicate verbally at all times; electronic messaging or texting is not permitted during flight operations. The PIC must be designated before the flight and cannot transfer his or her designation for the duration of the flight. The PIC must ensure that the VO can perform the duties required of the VO.

7. This exemption and all documents needed to operate the UAS and conduct its operations in accordance with the conditions and limitations stated in this grant of

exemption, are hereinafter referred to as the operating documents. The operating documents must be accessible during UAS operations and made available to the Administrator upon request. If a discrepancy exists between the conditions and limitations in this exemption and the procedures outlined in the operating documents, the conditions and limitations herein take precedence and must be followed. Otherwise, the operator must follow the procedures as outlined in its operating documents. The operator may update or revise its operating documents. It is the operator's responsibility to track such revisions and present updated and revised documents to the Administrator or any law enforcement official upon request. The operator must also present updated and revised documents if it petitions for extension or amendment to this grant of exemption. If the operator determines that any update or revision would affect the basis upon which the FAA granted this exemption, then the operator must petition for an amendment to its grant of exemption. The FAA's UAS Integration Office (AFS−80) may be contacted if questions arise regarding updates or revisions to the operating documents.

8. Any UAS that has undergone maintenance or alterations that affect the UAS operation or flight characteristics, e.g., replacement of a flight critical component, must undergo a functional test flight prior to conducting further operations under this exemption. Functional test flights may only be conducted by a PIC with a VO and must remain at least 500 feet from other people. The functional test flight must be conducted in such a manner so as to not pose an undue hazard to persons and property.

9. The operator is responsible for maintaining and inspecting the UAS to ensure that it is in a condition for safe operation.

10. Prior to each flight, the PIC must conduct a pre-flight inspection and determine the UAS is in a condition for safe flight. The pre-flight inspection must account for all potential discrepancies, e.g., inoperable components, items, or equipment. If the inspection reveals a condition that affects the safe operation of the UAS, the aircraft is prohibited from operating until the necessary maintenance has been performed and the UAS is found to be in a condition for safe flight.

11. The operator must follow the UAS manufacturer's maintenance, overhaul, replacement, inspection, and life limit requirements for the aircraft and aircraft components.

12. Each UAS operated under this exemption must comply with all manufacturer safety bulletins.

13. Under this grant of exemption, a PIC must hold either an airline transport, commercial, private, recreational, or sport pilot certificate. The PIC must also hold a current FAA airman medical certificate or a valid U.S. driver's license issued by a state, the District of Columbia, Puerto Rico, a territory, a possession, or the Federal

government. The PIC must also meet the flight review requirements specified in 14 CFR § 61.56 in an aircraft in which the PIC is rated on his or her pilot certificate.

14. The operator may not permit any PIC to operate unless the PIC demonstrates the ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption, including evasive and emergency maneuvers and maintaining appropriate distances from persons, vessels, vehicles and structures. PIC qualification flight hours and currency must be logged in a manner consistent with 14 CFR § 61.51(b). Flights for the purposes of training the operator's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this exemption are permitted under the terms of this exemption. However, training operations may only be conducted during dedicated training sessions. During training, proficiency, and experience-building flights, all persons not essential for flight operations are considered nonparticipants, and the PIC must operate the UA with appropriate distance from nonparticipants in accordance with 14 CFR § 91.119.

15. UAS operations may not be conducted during night, as defined in 14 CFR § 1.1. All operations must be conducted under visual meteorological conditions (VMC). Flights under special visual flight rules (SVFR) are not authorized.

16. The UA may not operate within 5 nautical miles of an airport reference point (ARP) as denoted in the current FAA Airport/Facility Directory (AFD) or for airports not denoted with an ARP, the center of the airport symbol as denoted on the current FAA-published aeronautical chart, unless a letter of agreement with that airport's management is obtained or otherwise permitted by a COA issued to the exemption holder. The letter of agreement with the airport management must be made available to the Administrator or any law enforcement official upon request.

17. The UA may not be operated less than 500 feet below or less than 2,000 feet horizontally from a cloud or when visibility is less than 3 statute miles from the PIC.

18. If the UAS loses communications or loses its GPS signal, the UA must return to a pre-determined location within the private or controlled-access property.

19. The PIC must abort the flight in the event of unpredicted obstacles or emergencies.

20. The PIC is prohibited from beginning a flight unless (considering wind and forecast weather conditions) there is enough available power for the UA to conduct the intended operation and to operate after that for at least five minutes or with the reserve power recommended by the manufacturer if greater.

21. Air Traffic Organization (ATO) Certificate of Waiver or Authorization (COA). All operations shall be conducted in accordance with an ATO-issued COA. The

exemption holder may apply for a new or amended COA if it intends to conduct operations that cannot be conducted under the terms of the attached COA.

22. All aircraft operated in accordance with this exemption must be identified by serial number, registered in accordance with 14 CFR part 47, and have identification (N−Number) markings in accordance with 14 CFR part 45, Subpart C. Markings must be as large as practicable.

23. Documents used by the operator to ensure the safe operation and flight of the UAS and any documents required under 14 CFR §§ 91.9 and 91.203 must be available to the PIC at the Ground Control Station of the UAS any time the aircraft is operating. These documents must be made available to the Administrator or any law enforcement official upon request.

24. The UA must remain clear and give way to all manned aviation operations and activities at all times.

25. The UAS may not be operated by the PIC from any moving device or vehicle.

26. All Flight operations must be conducted at least 500 feet from all nonparticipating persons, vessels, vehicles, and structures unless:
    a. Barriers or structures are present that sufficiently protect nonparticipating persons from the UA and/or debris in the event of an accident. The operator must ensure that nonparticipating persons remain under such protection. If a situation arises where nonparticipating persons leave such protection and are within 500 feet of the UA, flight operations must cease immediately in a manner ensuring the safety of nonparticipating persons; and
    b. The owner/controller of any vessels, vehicles or structures has granted permission for operating closer to those objects and the PIC has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

    The PIC, VO, operator trainees or essential persons are not considered nonparticipating persons under this exemption.

27. All operations shall be conducted over private or controlled-access property with permission from the property owner/controller or authorized representative. Permission from property owner/controller or authorized representative will be obtained for each flight to be conducted.

28. Any incident, accident, or flight operation that transgresses the lateral or vertical boundaries of the operational area as defined by the applicable COA must be reported to the FAA's UAS Integration Office (AFS−80) within 24 hours. Accidents must be

reported to the National Transportation Safety Board (NTSB) per instructions contained on the NTSB Web site: www.ntsb.gov.

If this exemption permits operations for the purpose of closed-set motion picture and television filming and production, the following additional conditions and limitations apply.

29. The operator must have a motion picture and television operations manual (MPTOM) as documented in this grant of exemption.

30. At least 3 days before aerial filming, the operator of the UAS affected by this exemption must submit a written Plan of Activities to the local Flight Standards District Office (FSDO) with jurisdiction over the area of proposed filming. The 3-day notification may be waived with the concurrence of the FSDO. The plan of activities must include at least the following:
    a. Dates and times for all flights;
    b. Name and phone number of the operator for the UAS aerial filming conducted under this grant of exemption;
    c. Name and phone number of the person responsible for the on-scene operation of the UAS;
    d. Make, model, and serial or N−Number of UAS to be used;
    e. Name and certificate number of UAS PICs involved in the aerial filming;
    f. A statement that the operator has obtained permission from property owners and/or local officials to conduct the filming production event; the list of those who gave permission must be made available to the inspector upon request;
    g. Signature of exemption holder or representative; and
    h. A description of the flight activity, including maps or diagrams of any area, city, town, county, and/or state over which filming will be conducted and the altitudes essential to accomplish the operation.

31. Flight operations may be conducted closer than 500 feet from participating persons consenting to be involved and necessary for the filming production, as specified in the exemption holder's MPTOM.

Unless otherwise specified in this grant of exemption, the UAS, the UAS PIC, and the UAS operations must comply with all applicable parts of 14 CFR including, but not limited to, parts 45, 47, 61, and 91.

This exemption terminates on August 31, 2017, unless sooner superseded or rescinded.

Sincerely,
/s/
John S. Duncan
Director, Flight Standards Service

Enclosures

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May 5, 2015

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

Re: Exemption Request Pursuant To Section 333 of the FAA Reform Act of 2012 and Part 11 of the Federal Aviation Regulations

Dear Sir or Madam:

We represent CameraBee, LLC, an Indiana limited liability company ("CameraBee"). We are writing pursuant to the FAA Modernization and Reform Act of 2012[1] (the "Reform Act") and the petition for exemption procedures directed in 14 C.F.R. 11, to request that CameraBee, an owner and operator of unmanned aircraft, be exempted from the Federal Aviation Regulations ("FARs") listed below so that CameraBee may operate its unmanned aircraft / unmanned aircraft systems ("UAS") commercially in airspace regulated by the Federal Aviation Administration ("FAA").

CameraBee wishes to provide aerial videography and photography services through the use of small, unmanned aircraft and lightweight UASs, primarily for use in the motion picture industry. CameraBee's UASs are some of the most advanced remote control aircraft available for these purposes. CameraBee seeks permission to fly its UASs commercially within the United States to capture aerial videography and photography.

CameraBee's exemption request would permit its operation of lightweight, unmanned (piloted by remote control) aircraft and UASs in controlled and limited airspace. Each of CameraBee's UAS pilots has (i) undergone maintenance and flight training from Hoverfly (the manufacturer of CameraBee's UASs) or another UAS training program, (ii) obtained and currently maintains a Private Pilot License pursuant to the FARs (including a Third Class Medical Certificate), and (iii) received or logged at least twenty-five (25) hours of UAS flight time and a minimum of five (5) hours flight time in uninhabited areas with the specific UAS proposed to be used by CameraBee. Predetermined, specifically marked areas of

[1] 112 P.L. 95 (2012).

operation, sectioned off locations and the company's training, expertise, and protocols will allow CameraBee to operate within current safety parameters. Additional information regarding CameraBee's proposed operating protocols are set forth in CameraBee's Flight Operation Checklists and Motion Picture and Television Flight Operation Manual (both submitted separately as confidential documents under 14 C.F.R. §11.35(b)).

Granting CameraBee's request will comport with the Secretary of Transportation's (through the FAA Administrator) responsibilities to integrate UASs into the national airspace system, consistent with future "…requirements for the safe operation of such aircraft systems [UASs] in the national airspace system" under Section 333(c) of the Reform Act. CameraBee will conduct its operations in compliance with the protocols described herein or as otherwise established by the FAA.[2]

For the reasons stated below, CameraBee respectfully requests the FAA grant an exemption allowing it to operate lightweight, remote controlled UASs.

1. **CameraBee's Contact Information:**

   CameraBee, LLC
   Attn: Derek Hammer, President
   7507 Crews Drive
   Indianapolis, IN 46226
   Tel.: (317) 546-2999

   For purposes of this exemption request, please contact:

   Faegre Baker Daniels LLP
   Attn: R. Patrick Thornberry
   600 E. 96th Street, Suite 600
   Indianapolis, IN 46240
   Tel.: (317) 569-4625
   E-Mail: r.patrick.thornberry@FaegreBD.com

2. **Specific Sections of Title 14 of the Code of Federal Regulations From Which CameraBee Requests Exemption:**

   14 C.F.R. 21, subpart H;
   14 C.F.R. §45.23(b);

[2] The FAA has proposed to amend its regulations to adopt specific rules to allow the operation of small unmanned aircraft systems in the National Airspace System, including changes which would address the operation of unmanned aircraft systems, certification of their operators, registration, and display of registration markings. https://www.federalregister.gov/articles/2015/02/23/2015-03544/operation-and-certification-of-small-unmanned-aircraft-systems It appears that Camera Bee's proposed operation for which it is seeking exemption from current FAA regulations would be consistent with the regulatory framework proposed for new Part 107, insofar as relevant procedures and specifics of the proposed rules are reasonably foreseeable.

14 C.F.R. §61.113(a) and (b);
14 C.F.R. §91.9(b)(2);
14 C.F.R. §91.103(b);
14 C.F.R. §91.109;
14 C.F.R. §91.119;
14 C.F.R. §91.121;
14 C.F.R. §91.151(a);
14 C.F.R. §91.203(a) and (b);
14 C.F.R. §91.405(a);
14 C.F.R. §91.407(a)(1);
14 C.F.R. §91.409(a)(2);
14 C.F.R. §407(a)(1);
14 C.F.R. §409(a)(2); and
14 C.F.R. §417(a) and (b).

3. The Extent of Relief CameraBee Seeks and the Reason It Seeks Such Relief:

CameraBee submits this application in accordance with §§ 331-334 of the Reform Act seeking relief from any currently applicable FAR's operating to prevent CameraBee's contemplated commercial cinematic, photographic and other flight operations within the national airspace system. Section 332 of the Reform Act provides for such integration of civil unmanned aircraft systems into our national airspace system in the public interest. CameraBee's lightweight UASs meet the standards of "small unmanned aircraft" as defined in Section 331(6); the integration of lightweight UASs of the type operated by CameraBee is expressly contemplated by the Reform Act. Importantly, client demands and similar plans of competitors to provide this type of service require CameraBee be able to operate its lightweight UASs as quickly as possible, and likely prior to FAA promulgation of final rules governing such operations.

The Reform Act[3] guides the Secretary in determining the types of UASs that may operate safely in our national airspace system. Considerations include:

- The weight, size, speed and overall capabilities of the UAS;
- Whether the UAS will be operated near airports or populated areas; and
- Whether the UAS will be operated by line of sight.

CameraBee's plans regarding these factors support an exemption.

CameraBee's UASs utilize four to eight (the model intended to be used most often is the eight-propeller model) counter-rotating propellers for extreme balance, control and stability. Each UAS weighs less than 55 pounds, including cinematic or other equipment. Each of CameraBee's small unmanned aircraft is designed to primarily hover in place and operate at less than a 50 knot maximum speed. They are

[3] §§ 333 (a) and (b).

capable of vertical and horizontal operations but operate only within the line of sight of the remote control pilot. In addition to the remote control pilot, CameraBee will use a spotter and a camera operator, such that, at minimum, three CameraBee personnel govern the safe flight of a CameraBee aircraft at all times.

Utilizing battery power and not combustible fuels, flights generally last less than twenty minutes. CameraBee will not operate its UASs with less than twenty-five percent (25%) battery capacity. Safety systems in place include a GPS mode that allows CameraBee's UASs to return to a home safety point if communications are lost.

CameraBee will not operate its UASs near airports and generally will not operate them near populated areas, unless such area (i) is a private set, (ii) has been sectioned off for closed-set operations, and/or (iii) is under the control of CameraBee clients. Accordingly, CameraBee will only operate its UASs in predetermined areas and only in compliance with strict safety protocols.

CameraBee's operation of its fleet of small unmanned aircraft will not "create a hazard to users of the national airspace system or the public."[4] Given the small size and weight of CameraBee's UASs, which will be operated only in closed off and well-controlled areas, CameraBee's UASs fall within Congress's contemplated safety zone when it promulgated the Reform Act and the corresponding directive to integrate UASs into the national airspace system. CameraBee's UASs do not pose any threat to the general public or national security.

4. CameraBee's Request Will Benefit the Public As A Whole:

Granting CameraBee's exemption request furthers the public interest. Congress has pronounced through the Reform Act that it is in the public's interest to integrate commercially flown UASs into the national airspace system. Further, the public has an interest in reducing the danger and emission associated with current aerial cinematic capture methods, namely, full size helicopters. CameraBee's UASs are battery powered and create no emissions. There is no fuel to ignite and explode if a CameraBee UAS should crash. The impact of CameraBee's lightweight UASs is far less than a full size helicopter. The public's interest is furthered by minimizing ecological and potential crash impacts by permitting motion picture capture through CameraBee's lightweight UASs.

Congress mandated the integration of UASs into our national airspace system, in part, to achieve the societal benefits of this developing UAS technology, with appropriate safety and related regulatory guidance from the FAA. Permitting CameraBee to operate its UASs is consistent with these goals.

5. CameraBee's Exemption Will Not Adversely Affect Safety; the Exemption Will Provide a Level of Safety at Least Equal to Existing Rules:

CameraBee's exemption will not adversely affect safety. Permitting CameraBee to offer aerial videography and photography services without the use of full size aircraft will decrease the overall risk

[4] Reform Act § 333 (b)

to the public. CameraBee's approach is safer and superior to current aerial motion picture capture techniques:

- CameraBee's UASs weigh less than 55 pounds (including the mounted camera);
- CameraBee will only operate its UASs below 400 feet;
- CameraBee's UASs will only operate for flights lasting less than 20 minutes;
- CameraBee will land its UASs when they reach 25% battery power;
- CameraBee's remote control pilots operate CameraBee's UASs by line of sight;
- CameraBee's remote control pilots have video backup should they somehow lose sight of the UAS;
- CameraBee will staff each flight with a remote control pilot, camera operator and spotter with communication systems enabling real time communication among them;
- CameraBee's UASs have GPS flight modes whereby they return to a safe home location if communication with the remote control pilot is lost;
- CameraBee employs FAA licensed private pilot(s) and conducts a regimented training and continuing education program;
- CameraBee will only operate in quarantined areas that are strictly controlled, and away from airports and populated areas;
- CameraBee pilots will always conduct extensive preflight safety briefings with all persons who will be allowed in the flight operations area, which includes planning and briefings for contingency emergency procedures;
- CameraBee will always obtain all necessary permissions and permits prior to operation; and,
- CameraBee has procedures to abort flights in the event of safety breaches or potential danger.

CameraBee's safety protocols provide a level of safety at least equal to existing rules, and in most instances, greater than existing rules. It is important to note that absent the integration of commercial UASs into our national airspace system, helicopters are the primary means of aerial videography and photography. While the safety record of such helicopters is strong, it is far safer to operate a battery powered lightweight UAS. First, the potential loss of life is diminished because UASs carry no people on board, and CameraBee only operates them in closed set operations away from mass populations. Second, there is no fuel on board a UAS and thus the potential for fire or explosions is greatly diminished. Third, the small size and maneuverability of CameraBee's UASs allow the remote control pilots to avoid hazards. Accordingly, CameraBee's UASs will operate at or above current safety levels. Lastly, CameraBee's proposed operations would comply with the applicable provisions of Proposed Part 107 to Title 14, and therefore fit within the restrictions currently contemplated by the FAA with respect to the commercial operation of UASs.

6. Summary The FAA May Publish in the Federal Register:

A. 14 C.F.R. 21 and 14 C.F.R. 91: Airworthiness Certificates and Manuals.

14 C.F.R. 21, Subpart H, entitled Airworthiness Certificates, sets forth requirements for procurement

of necessary airworthiness certificates in relation to FAR § 91.203(a)(1). The size, weight and enclosed operational area of CameraBee's UASs permit exemption from Part 21 because CameraBee's UASs meet an equivalent level of safety pursuant to Section 333 of the Reform Act. The FAA is authorized to exempt aircraft from the airworthiness certificate requirement under both the Act (49 U.S.C. § 44701 (f)) and Section 333 of the Reform Act. Both pieces of legislation permit the FAA to exempt UASs from the airworthiness certificate requirement in consideration of the weight, size, speed, maneuverability and proximity to areas such as airports and dense populations. CameraBee's UASs meet or exceed each of the elements.

14 C.F.R. §91.9(b)(2) requires an aircraft flight manual in the aircraft. As there are no pilots or passengers, and given the size of the UASs, this Regulation is inapplicable. An equivalent level of safety will be achieved by maintaining a manual at the flight operations center. The FAA has previously issued exemptions to this regulation in Exemption Nos. 8607, 8737, 8738, 9299, 9299A, 9565, 9565B, 10167, 10167A, 10602, 10700 and 32827.

14 C.F.R. §91.121 regarding altimeter settings is inapplicable insofar as CameraBee's UASs utilize electronic global positioning systems and internal gyroscopes to provide spatial coordination.

14 C.F.R. §§91.203(a) and (b) provide for the carrying of civil aircraft certifications and registrations. These regulations are inapplicable for the reasons described above. The equivalent level of safety will be achieved by maintaining such certifications and registrations at CameraBee's flight operations center.

B. 14 C.F.R. §45.23: Marking the Aircraft.

Applicable FARs require aircraft to be marked according to certain specifications. CameraBee's UASs are, by definition, unmanned. They therefore do not have a cabin, cockpit or pilot station on which to mark certain words or phrases. Further, two-inch lettering is difficult to place on such small aircraft. Regardless, CameraBee will mark its UASs in the largest possible lettering by placing the word "EXPERIMENTAL" on its fuselage as required by 14 C.F.R. §45.29(f) so that the pilot, camera operator, spotter and others working with the UAS will see the markings. The FAA has previously issued exemptions to this regulation through Exemptions Nos. 8738, 10167, 10167A and 10700.

C. 14 C.F.R. §61.113: Private Pilot Privileges and Limitations: Pilot in Command.

Pursuant to 14 C.F.R. §§61.113(a) and (b), private pilots are limited to non-commercial operations. CameraBee can achieve an equivalent level of safety as achieved by current Regulations because CameraBee's UASs do not carry any pilots or passengers. While helpful, a pilot license will not ensure remote control piloting skills; CameraBee's pilot training programs will. Private pilot licensees will operate CameraBee's UASs with the same skill. Further, the risks attendant to the operation of CameraBee's UASs is far less than the risk levels inherent in the commercial activities outlined in 14 C.F.R. §61, et seq. Thus, allowing CameraBee to operate its UASs with a private pilot, who has received further training through CameraBee programs, as the pilot in control will exceed current safety levels in relation to 14 C.F.R. §§61.113(a) and (b).

D. 14 C.F.R. §91.151(a): Fuel Requirements for Flight in VFR Conditions.

Section 91.151(a) prohibits an individual from beginning "a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing, and, assuming normal cruising speed – (1) During the day, to fly after that for at least 30 minutes; or (2) At night, to fly after that for at least 45 minutes." CameraBee is not seeking an exemption for night-time UAS operations.

The battery powering CameraBee's UASs provides approximately 30 minutes of powered flight. This would make compliance with Section 91.151(a) impossible and render the use of UASs impractical. Given the limitations on the UASs flight area and the location of its proposed operations in closed off areas, the shortened battery reserve requirement for daylight-only operation, as described in Section 5 above, is reasonable.

An exemption from 14 C.F.R. §91.151(a) falls within the scope of prior exemptions. *See* Exemption No. 11062 (granting Astraeus Aerial similar relief to operate UASs without compliance with this Section, and noting similar instances of such exemptions granted in the UAS context in Exemption Nos. 8811, 10808, and 10673). Operating CameraBee's UASs within the pilot's visual line of sight in closed set operations, in which only individuals who have participated in pre-flight safety briefings are present does not create the type of risks that Section 91.151(a) was intended to address, especially when also taking into account the size, speed and maneuverability of CameraBee's UASs. An equivalent or higher level of safety as that sought by Section 91.151(a) can be achieved by limiting flights such that the battery power of the UAS does not fall below 25 percent, which would provide more than adequate power to return the UAS to its planned landing zone from anywhere in its limited operating area.

E. 14 C.F.R. §91.119: Minimum Safe Altitudes.

14 C.F.R. §91.119 prescribes safe altitudes for the operation of civil aircraft. It allows helicopters to be operated at lower altitudes in certain conditions. CameraBee's UASs will not operate at an altitude greater than 400 feet above ground level. CameraBee will also only operate its UASs in closed-off and controlled areas, providing a level of safety at least equivalent to those in relation to minimum safe altitudes. Given the size, weight, maneuverability and speed of CameraBee's UASs, an equivalent level of safety will be achieved.

F. 14 C.F.R. §§91.405 (a); 407(a)(1); 409(a)(2); 417(a) and (b): Maintenance Inspections.

The above Regulations require aircraft owners and operators to "have [the] aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter. . . ."

These Regulations only apply to aircraft with an airworthiness certificate. They will not, therefore, apply to CameraBee should its requested exemption be granted. However, CameraBee conducts an extensive maintenance program that involves regular software updates and curative measures for any damaged hardware. Therefore, an equivalent level of safety will be achieved.

G. Summary

CameraBee seeks an exemption from the following Regulations: 14 C.F.R. §21, subpart H; 14 C.F.R. §45.23(b); 14 C.F.R. §§61.113(a) and (b); 14 C.F.R. §91.9(b)(2); 14 C.F.R. §91.103(b); 14 C.F.R. §91.109; 14 C.F.R. §91.119; 14 C.F.R. §91.121; 14 C.F.R. §91.151(a); 14 C.F.R. §§91.203(a) and (b); 14 C.F.R. §91.405(a); 14 C.F.R. §91.407(a)(1); 14 C.F.R. §91.409(a)(2); 14 C.F.R. § 91.409(a)(2); and, 14 C.F.R. §§91.417(a) and (b), to commercially operate its fleet of UASs in motion picture, television and photography operations.

Granting CameraBee's request for exemption will reduce current risk levels and thereby enhance safety. Currently, videography and photography image capture relies primarily on the use of larger aircraft running on combustible fuel. CameraBee's craft do not contain potentially explosive fuel, are smaller, lighter and more maneuverable than conventional aircraft used for these purposes. Further, CameraBee will operate at lower altitudes and in controlled airspace.

CameraBee's UASs carry only a camera, and therefore in a UAS incident the likelihood of death or serious bodily injury is significantly limited. CameraBee's operation of its UASs, weighing less than 55 pounds and traveling at speeds lower than 50 knots in closed off areas will provide at least an equivalent level of safety as that achieved under current FARs.

Accordingly, CameraBee respectfully requests that the FAA grant its exemption request set forth herein.

Respectfully submitted,

/s/ R. Patrick Thornberry

R. Patrick Thornberry

RPTHORNB:

cc: Derek Hammer
President, CameraBee, LLC