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

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

June 23, 2015

Exemption No. 11778A
Regulatory Docket No. FAA–2015–0591

Mr. Jacob Rachniowski
Managing Partner
Cloud9Drones LLC
2606 Wilson Street 802
Austin, TX 78704

Dear Mr. Rachniowski:

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 March 5, 2015, you petitioned the Federal Aviation Administration (FAA) on behalf of Cloud9Drones LLC (hereinafter petitioner or operator) for an exemption. The exemption would allow the petitioner to operate an unmanned aircraft system (UAS) to conduct aerial inspections of towers/tall structures for multiple industries, and videography for film and marketing.

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 are the C9D-BD (Butterfly Dragon), DJI-S1000+, DJI Inspire 1, DJI Phantom 3, 3DR Solo, and 3DR Iris+.

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 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. 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, Cloud9Drones 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 the extent necessary to allow the petitioner to operate a UAS to perform aerial data collection. This exemption is subject to the conditions and limitations listed below.

Conditions and Limitations

In this grant of exemption, Cloud9Drones 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 C9D-BD (Butterfly Dragon), DJI-S1000+, DJI Inspire 1, DJI Phantom 3, 3DR Solo, and a 3DR Iris+ 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 not 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 5 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 June 30, 2017, unless sooner superseded or rescinded.

Sincerely,

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

Enclosures

May 13, 2015
U.S. Department of Transportation
Docket Management Facility
West Building Ground Floor
Room W12-140
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: Cloud9Drones Section 333 Exemption Amendment (Docket # FAA-2015-0591-0001)

Dear Sir/Madam,

Cloud9Drones LLC is writing to amend our Section 333 exemption request, posted March 10th, 2015, with the intention of clarifying certain requests and to add additional aircraft. This document will give an overview of the amendments we would like to make and will follow with the specific comments, new additions and associated pages effected.

Amendment Overview:

1) 'C9D-BD (Butterfly Dragon) – custom UAS' is a Gryphon Dynamics X8

Although C9D specified that the C9D-BD is a custom UAS, it is in fact an airframe that has previously been exempt by the FAA for other companies (Exemption No. 11158): a Gryphon Dynamics X8. The supporting documentation specifies the exact components of this UAS. It is not a 'custom' UAS, it only has a few custom parts non-critical to flight, i.e. camera isolation system, battery mounts and weatherproof top cover for the flight electronics.

2) Videography and film is NOT for closed-set filming operations

We are not requesting an exemption to do closed-set filming. We understand that closed-set filming requires additional manuals, which we have not submitted. Our videography will be limited to real-estate, marketing videos and non-closed set film operations.

3) All operations will be restricted to below 400ft

Cloud9Drones requested operations up to the height listed in the NPRM: 500ft. We also requested to operate in some cases above 500ft. Since such requests will warrant further review by the FAA, C9D would like to reduce those requests to a maximum altitude of 400ft, as permitted by other exempt companies.

4) Pilots will require a sports license and valid US driver's license

Cloud9Drones specified that commercial pilots with third class medicals would perform operations. This was due to a request to operate above 400ft, which could require a pilot with more experience. In light of the recent exemptions requiring a sports license and a valid US driver's license, C9D would like to reduce its pilot qualifications from commercial pilot license with a third class medical to *at least a* sport pilot's certificate or higher rating with a valid US driver's license.

Thus, Cloud9Drones will now require an exemption from 14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.

Additional Aircraft

Additionally, C9D would like to add the following aircraft to it's fleet of UAS'.

- DJI Phantom 3
- 3D Robotics Solo

The manuals have been submitted separately to the 333 Exemptions office.

The name and address of the applicant is:

Cloud9Drones LLC
Attn: Jacob Rachniowski - Managing Partner
Ph: 512-567-7351
Email: Jacob@cloud9drones.com
Address: 2606 Wilson St. # 802, Austin, TX,

Taylor Davis
Ph: 405-406-7730
Email: Taylor@cloud9drones.com

Amendment Details:

1) 'C9D-BD (Butterfly Dragon) – custom UAS' is a Gryphon Dynamics X8

Document Name: 'C9D Request for Exemption'
Page: 3
Original Text:
C9D intends to operate the following aircraft:
1. C9D-BD (Butterfly Dragon) – custom UAS
New Text:
C9D intends to operate the following aircraft:
1. C9D-BD (Butterfly Dragon) – Gryphon Dynamics X8

2) Videography and film is NOT for closed-set filming operations

Document Name: 'C9D Request for Exemption'
Page: 1
Original Text:
Equipped to conduct aerial inspections of towers/tall structures for multiple industries, and videography for film and marketing,
New Text:
Equipped to conduct aerial inspections of towers/tall structures for multiple industries, and videography for film (with the exception of closed-sets) and marketing,

Document Name: 'C9D Request for Exemption'
Page: 4
Original Text:
C9D also intends to provide aerial videography for the film and marketing industries
New Text:
C9D also intends to provide aerial videography for the film (with the exception of closed-sets) and marketing industries

Document Name: 'C9D Request for Exemption'
Page: 13
Original Text:
To allow commercial operation for inspection of towers/tall structures and videography for film

and marketing purposes,

New Text:

To allow commercial operation for inspection of towers/tall structures and videography for film (with the exception of closed-sets) and marketing purposes,

Document Name: 'Intended Operations and Public Interest

Page: 4

Original Text:

- *Aerial videography for film or marketing purposes*

New Text:

- *Aerial videography for film (with the exception of closed-sets) or marketing purposes*

3) All operations will be restricted to below 400ft

Document Name: 'C9D Request for Exemption'

Page: 3

Original Text:

at an altitude of no more than 500 feet

New Text:

at an altitude of no more than 400 feet

Document Name: 'C9D Request for Exemption'

Page: 10

Original Text:

Flights will be operated at an altitude of no more than 400 feet above ground level (AGL). Flights will be operated above 500 ft for inspections of structures that have FAA lighting. In these less common operating situations, the UAS will not be operated over 10ft above the height of the FAA marked tower, nor will the UAS operate over a 50ft radius from the center of the marked structure.

New Text:

Flights will be operated at an altitude of no more than 400 feet above ground level (AGL). ~~*Flights will be operated above 500 ft for inspections of structures that have FAA lighting. In these less common operating situations, the UAS will not be operated over 10ft above the height of the FAA marked tower, nor will the UAS operate over a 50ft radius from the center of the marked structure.*~~

Document Name: 'Operating Manual'
Page: 3
Original Text:
Aircraft shall remain under 500ft AGL, or no more than 10ft above a FAA marked structure under inspection and no more than 80ft horizontal distance away from the tower. Specific details are specified in the 'Intended Operations and Public Interest Manual.'
New Text:
Aircraft shall remain under 400ft AGL, ~~or no more than 10ft above a FAA marked structure under inspection and no more than 80ft horizontal distance away from the tower.~~ Specific details are specified in the 'Intended Operations and Public Interest Manual.'

Document Name: 'C9D Intended Operations and Public Interest'
Page: 4
Original Text:
Altitude limited below 500ft AGL in all cases with the exception of inspections of towers above 500ft marked with FAA lighting. In these cases operations will be limited to 10ft above the marked tower and no more than 80ft horizontal distance from the tower.
New Text:
Altitude limited below 400ft AGL in all cases ~~with the exception of inspections of towers above 500ft marked with FAA lighting. In these cases operations will be limited to 10ft above the marked tower and no more than 80ft horizontal distance from the tower.~~

Document Name: 'C9D Intended Operations and Public Interest'
Page: 4
Remove "Reasoning for Higher Altitude Operations for Tower Inspection" Section

Document Name: 'C9D Intended Operations and Public Interest'
Page: 5
Original Text:
C9D UAS operations will not exceed 10ft vertical distance and not exceed 80ft horizontal distance from the marked structure.
New Text:
~~C9D UAS operations will not exceed 10ft vertical distance and not exceed 80ft horizontal distance from the marked structure.~~ C9D UAS operations will not exceed at an altitude of no more than 400 feet AGL.

Document Name: 'C9D Intended Operations and Public Interest'
Page: 14
Original Text:
By permitting C9D to operate above 500ft and no higher than 10ft AGL of the tower under inspection,
New Text:
By permitting C9D to operate up to 400ft AGL ~~above 500ft and no higher than 10ft AGL of the tower under inspection,~~

4) Pilots will require a sports license and valid US driver's license

Document Name: 'C9D Request for Exemption'
Page: 1
Original Text:
The UAS PIC will be an FAA licensed airman with a commercial pilot's certificate and third class medical
New Text:
The UAS PIC will be an FAA licensed airman with at least a sport pilot's certificate or higher rating and valid US driver's license

No Exemption Necessary:
14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.
C9D will require that UAS pilots have a commercial pilots license and a third class medical. In addition to these requirements, the PIC will have to complete UAS training as specified in the C9D Operator Qualifications and Training Manual.
New Text:
Exemption Requested From:
14 C.F.R. § 61.113 (a) & (b): Private Pilot Privileges and Limitations: Pilot in Command.
C9D will require that UAS pilots have at least a sport pilot's certificate or higher rating and a valid US driver's license. In addition to these requirements, the PIC will have to complete UAS training as specified in the C9D Operator Qualifications and Training Manual.

Document Name: 'C9D Request for Exemption'
Page: 10
Original Text:

The Pilot In Command (PIC) must possess a commercial pilot certificate and at least a current third-class medical certificate.

New Text:

The Pilot In Command (PIC) must possess at least a sport pilot's certificate or higher rating and at least a valid US driver's license.

Document Name: 'C9D Operator Qualifications and Training Manual'

Page: 3

Original Text:

- *Hold at least a Private Pilot License*
- *Maintain at least a 3rd Class Medical*

New Text:

- *Hold at least a sport pilot's certificate or higher rating*
- *Hold a valid US driver's license*