

**BEFORE THE  
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WASHINGTON, D.C.**

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**IN THE MATTER OF**

**Petition of BNSF Railway Company for Amendment to Exemption No. 11206A**

**Docket Number: FAA-2014-0704**

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**COMMENTS OF THE SMALL UAV COALITION**

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**Introduction**

The Small UAV Coalition<sup>1</sup> is pleased to provide its comments in support of the petition by BNSF Railway Company (“BNSF”) for an amendment to Exemption No. 11206A to permit BNSF to operate its small unmanned aircraft systems (“sUAS”) (1) at night; (2) from a moving vehicle; (3) in inclement weather; (4) within 500 feet of vehicles; and (5) within the line of sight of either the pilot in command (“PIC”) or one or more visual observers (“VOs”).

Members of the Small UAV Coalition share an interest in advancing regulatory and policy changes that will permit the operation of small UAVs in the near term, within and beyond the line of sight, with varying degrees of autonomy, for commercial, consumer, recreational and philanthropic purposes. The Coalition believes there are additional steps the FAA can take to broaden the authority to conduct commercial operations. In particular, the FAA has the authority and the discretion to grant the relief requested by BNSF in its petition for amendment.

**Operations at night**

In comments on the FAA’s sUAS NPRM, the Coalition urged the FAA to revise proposed section 107.29 to allow sUAS operations beyond the proposed window between the hours of official sunrise and official sunset. We stated that FAA should allow nighttime sUAS operations where such operations may be conducted safely without any appreciable increase in risk to other aircraft or persons on the ground and where the sUAS operator is able safely to perform the see-and-detect-and-avoid responsibilities.

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<sup>1</sup> Members of the Small UAV Coalition include AirMap, AGI, Amazon Prime Air, Botlink, Flirtey, Google[x] Project Wing, Intel, Kespry, PrecisionHawk, Strat-Aero, T-Mobile, Verizon Ventures, and Zero Tech.

Accordingly, the Coalition urged the FAA to revise this section to allow the Administrator or his delegate to authorize nighttime operations, through exemption, deviation authority (certificate of waiver or authorization), or certification, upon a demonstration of a level of safety equivalent to daylight operations, in consideration of the technological capabilities of the sUAS – including any lighting equipment – the capability of the sUAS operator, the presence of one or more visual observers, the particular use scenario, and the operating environment, including the degree of illumination. The Coalition believes the authority Congress provided in section 333 of the FAA Modernization and Reform Act of 2012 gives the FAA the discretion to authorize nighttime operations in advance of and independent of its sUAS rulemaking.

BNSF has equipped its sUAS with LED navigational and/or strobe lights on its sUAS with AR-180 light to improve visibility, which BNSF asserts provides visibility over one mile, based on field tests conducted outside of the United States.

The Coalition supports BNSF's request with the understanding that its pilots will be properly trained in nighttime operations and that such operations in the particular environment will not pose an increased risk to persons or property on the ground.<sup>2</sup>

### **Operations from a moving vehicle**

In comments the Coalition filed in response to the FAA's small UAS ("sUAS") proposed rule, 80 Fed. Reg. 9544 (Feb. 23, 2015), we urged the FAA to allow operations from moving vehicles with appropriate safeguards. Operating a small UAV in place of a helicopter provides a significant increase in safety for all persons on the set. Operations from a moving vehicle may be safely conducted where the operator of the motor vehicle or water vessel is not also the operator of the sUAS.

BNSF proposed to operate its sUAS from a moving vehicle traveling on an access road that parallels the track as well as an on-track vehicle. We agree with BNSF that these operations provide a natural buffer similar to a waterway given that BNSF has control over the tracks and adjacent property, including many access roads. BNSF is amenable to other conditions such as having a visual observer scan the horizon to ensure no aircraft are at risk and to fly below 100 feet AGL. Accordingly, the Coalition supports BNSF's request to operate its sUAS from moving vehicles.<sup>3</sup>

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<sup>2</sup> The Coalition has previously supported the petitions of Industrial Skyworks (FAA 2014-1060), Ars Electronica (FAA 2014-1095), AeroBo (FAA 2014-0400), SkyPhilly (FAA 2014-0908), Alaska Aerial Media LLC (FAA 2015-0173), Firestorm UAV (2015-0931), Unmanned Services, Inc. (FAA 2015-1302), Walt Disney Parks and Resorts (FAA 2015-8680), and Drone Consultants (FAA 2015-5557) to conduct nighttime operations.

<sup>3</sup> The Coalition has previously supported the petitions of Goodwyn Group (FAA 2015-2336), The Visual Arts Group (FAA 2015-0036), Sky-Futures USA, Inc. (FAA 2014-0461), Helicopters West (FAA 2015-0430), Unmanned Services, Inc. (FAA 2015-1302), and Trumbull Unmanned LLC (FAA 2014-0890) to operate from a moving vehicle.

### **Operations in inclement weather**

BNSF explains that operating a sUAS during bad weather events may be critical to performing the required inspection of track and will avoid the risk of injury to workers who otherwise would have to walk the track during the weather event. To ensure an equivalent level of safety, BNSF proposes to operations its sUAS within the parameters in FAR 91.155 (VFR weather minimums) for Class G airspace. Given that operations will be conducted over BNSF property and rights-of-way, and that manned aircraft flying IFR will not be interfered with by sUAS operations below 400 feet AGL, the Coalition supports this request for relief.

### **Operations within 500 feet of a vehicle**

BNSF explains that much of its track is closely parallel to highways and other road on which the public travels, and thus a 500 feet lateral distance requirement would preclude such track inspections. And it would be impossible for BNSF to obtain consent from persons operating motor vehicles closer than 500 feet. The Coalition agrees that BNSF can safely operate its sUAS within close proximity to cars and trucks on public roads under certain conditions. Its sUAS may be geo-fenced to stay at least 100 feet from the public roads. Also, the driver and passengers riding in a vehicle are protected from the consequences of a collision with a sUAS because of the vehicle structure, which BNSF assets meets the barrier or structural requirement to permit operations closer than 500 feet laterally. For operations that would cross a public road, BNSF will station a VO to scan the roads and notify the PIC of any vehicle traffic that will need to cross the track.

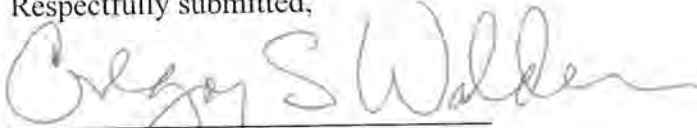
### **Operations within the visual line of sight of the pilot or one or more visual observers**

BNSF explains that on occasion it will be necessary for the sUAS operation to be conducted outside the line of sight of the PIC but within the visual line of sight of s visual observer, such as where there is heavy tree cover or hilly terrain. Strictly observing the PIC VLOS requirement would be delay the inspection, requiring the manned relocation of the sUAS at regular junctures. BNSF states, "Allowing 'daisy-chaining' using multiple VOs reduces both the amount of time spent by BNSF personnel on the track or other infrastructure and disruption to rail operations."

BNSF proposes to have one or more VOs fulfill the VLOS requirement provided BNSF follows procedures the FAA has imposed as part of experimental airworthiness certificates and at test sites, and confines such operations to the airspace over property over which it has ownership or control. VOs will be suitably trained and be in constant communication with the PIC. BNSF will also file a NOTAM request and conduct community outreach where such operations would be adjacent to residential areas. Under these circumstances, the Coalition supports BNSF's request for relief.

For the reasons stated above, the Coalition supports BNSF's petition for amendment.

Respectfully submitted,

A handwritten signature in cursive script that reads "Gregory S. Walden". The signature is written in black ink and is positioned above a horizontal line.

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