



U.S. Department
of Transportation

**Federal Aviation
Administration**

Aviation Safety

800 Independence Ave
Washington, DC 20591

In the matter of the petition of

HELICOPTER ASSOCIATION
INTERNATIONAL

For an exemption from §§ 91.9(a),
91.205(h)(7), 135.160, and
135.179(a) of Title 14, Code of
Federal Regulations

Exemption No. 18973

Regulatory Docket No. FAA-2021-1028

PARTIAL GRANT OF EXEMPTION

By letter dated October 29, 2021, James Viola, President and Chief Executive Officer of Helicopter Association International (HAI) petitioned the Federal Aviation Administration (FAA) on behalf of HAI and its members and other part 135 helicopter operators for an exemption from §§ 91.9(a), 91.205(h)(7), 135.160, and 135.179(a) of Title 14, Code of Federal Regulations (14 CFR). If granted, the proposed exemption would allow part 119 certificate holders conducting part 135 helicopter operations to operate with inoperative radar (radio) altimeters. The relief would also allow the use of night vision goggles (NVGs) in helicopters “without a normally functioning radar altimeter in accordance with § 91.205(h)(7) and/or rotorcraft flight supplement limitations (§ 91.9(a)) including landings at off-airport or unimproved landing areas.”

The petitioner requests relief from the following regulations:

Section 91.9(a) prescribes, in pertinent part, that no person may operate a civil aircraft without complying with the operating limitations specified in the approved Airplane or Rotorcraft Flight Manual, markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.

Section 91.205(h)(7) prescribes, in pertinent part, that for night vision goggle operations, the following instruments and equipment must be installed in the aircraft, functioning in a normal manner, and approved for use by the FAA: Radar altimeter.

Section 135.160(a) prescribes, in pertinent part, that after April 24, 2017, no person may operate a rotorcraft unless that rotorcraft is equipped with an operable FAA-approved radio altimeter, or an FAA-approved device that incorporates a radio

altimeter, unless otherwise authorized in the certificate holder's approved minimum equipment list.¹

Section 135.179(a) states that no person may take off an aircraft with inoperable instruments or equipment installed unless the person fulfills certain conditions, which include compliance with all applicable conditions and limitations contained in the Minimum Equipment List and the operations specifications authorizing the use of the Minimum Equipment List.

The petitioner supports its request with the following information:

The petitioner states it seeks relief to allow for the continuity of helicopter operations under 14 CFR part 135 “with radar (radio) altimeters that are either inoperative or unreliable due to radio frequency interference caused by the Federal Communications Commission’s (FCC) allocation of a portion of the 3.7–3.98 GHz frequency band available for flexible use including 5G cellular applications.” Pet. at 1.²

The petitioner further states that the relief sought would allow part 135 helicopter operators to operate with inoperative or unreliable radar (radio) altimeters “beyond the constraints of FAA MMEL Policy Letter (PL) 131 for inoperative radar altimeters and allow operations at night to and from off-airport or unimproved landing areas.”³ The relief would also allow the use of NVGs in helicopters without a normally functioning radar (radio) altimeter as required by § 91.205(h)(7) or rotorcraft flight supplement limitations under § 91.9(a).

As described by the petitioner,

The Radio Technical Commission for Aeronautics (RTCA) compiled a report (RTCA Paper No. 274-20/PMC-2073) that revealed a major risk that 5G telecommunications systems in the 3.7–3.98 GHz band (C-Band) will cause harmful interference with radar altimeters on all types of civil aircraft including commercial transport airplanes; business, regional, and general aviation airplanes; and both transport and general aviation helicopters. The results of the study performed indicate that this risk is widespread and has the potential for broad impacts to aviation operations in the United States, including the possibility of catastrophic failures leading to multiple fatalities, in the absence of appropriate mitigations. Further, the impacts are not only limited to the intentional emissions from 5G systems in the 3.7–3.98 GHz band, but also the spurious emissions from such systems within the protected 4.2–4.4 GHz radar altimeter band.

¹ The petitioner requests relief from § 135.160 in its entirety (i.e., paragraphs (a) and (b)). However, paragraph (b) describes the process by which the Administrator may issue a deviation for certain helicopter operations. As paragraph (b) is permissive and describes a process for seeking a deviation, analysis of potential relief from paragraph (b) is not necessary in this decision.

² The petitioner uses the term “radar (radio) altimeter” in the exemption request. For the purposes of this petition for exemption, the FAA will use the term “radio altimeter” unless quoting the petitioner or the regulation itself.

³ Pet. at 1 (citing MMEL Policy Letter (PL) 131, Revision 0, GC (Oct. 23, 2019), *available at* https://fsims.faa.gov/wdocs/policy%20letters/pl-131_rev_0.htm).

The petitioner further states, “currently, no information is available pertaining to which areas will be affected by 5G C-Band emissions but the [RTCA] report indicates the interference will be widespread and could occur anywhere 5G antennas are present and will include most areas where helicopters operate.” Pet. at 2.

Section 135.160 requires an operable radio altimeter, or an FAA-approved device that incorporates a radio altimeter, unless otherwise authorized in the certificate holder's approved minimum equipment list (MEL). The petitioner states that while relief is available for inoperative radio altimeters in an operator's approved MEL, current MELs that operators hold prohibit landing at off-airport or unimproved sites and prohibit operations using NVGs. With appropriate mitigations to ensure safe operations, the petitioner states such operations can occur safely, notwithstanding these MEL conditions.

The use of NVGs also requires a normally functioning radar altimeter in accordance with § 91.205(h)(7) and limitations set forth in rotorcraft flight manual supplements for operations using NVGs. The petitioner stated, operators conducting helicopter air ambulance (HAA) operations currently use NVGs to increase the level of safety while conducting vital life-saving operations. With effective mitigations, the petitioner states safe operations can occur at night to off-airport and unimproved landing sites with an inoperative or unreliable radar altimeter.

The petitioner states that operators can maintain a level of safety equivalent consistent with the level that compliance with the applicable regulations provides in operations conducted under part 135 by using proper preflight planning, minimum altitudes, and VFR visibility requirements higher than those specified in § 135.205. The petitioner also asserts that using ground personnel to assist in hazard identification when landing at off-airport or unimproved landing areas would achieve the necessary level of safety.

The petitioner states that HAA operators also predominantly use NVGs to enhance safe operations at night. Pilots can safely use the latest generations of NVGs allowing for the use of exterior lighting, such as movable searchlights, to provide detection of landing zone obstacles and in determining the rate of closure to a landing area. NVGs also allow for the detection of obstacles while HAA aircraft are en route to and from hospitals. The petitioner asserts it is safer to fly at night with NVGs without a normally functioning radar altimeter than it is to fly at night with a fully functioning radar altimeter but without the aid of NVGs. Pet. at 2.

Additionally, the petitioner contends issuing this exemption would be in the public interest. Part 135 HAA operators transport over 300,000 injured or seriously ill people annually. Of those, the petitioner estimates that approximately 40,000 to 50,000 operations occur from off-airport or unimproved areas at night. Based on these assertions, the petitioner contends that granting the exemption would be in the public interest.

In further support of its argument that the requested relief is in the public interest, the petitioner states that helicopters operated under part 135 fly an estimated 200,000 hours to

transport tens of thousands of workers to and from oil exploration facilities in the Gulf of Mexico annually. Not allowing these operations to continue due to unreliable or inoperative radar altimeters could potentially cause a significant impact to the nation's energy supply and economy.

Summary of public comments:

The FAA published a summary of the petition in the *Federal Register* on November 17, 2021 (86 FR 64291). As of the close of the comment period on December 7, 2021, the FAA received comments from twenty-five commenters.

All commenters expressed support for the granting of this petition, with a particular focus on HAA operations. STAT Medevac commented that the use of NVGs has been one of the primary factors in the improvement of HAA operational safety and is critical to the ability of HAA operators to provide essential services. Boston MedFlight, LifeFlight of Maine, Mayo Clinic, North Flight Aero Med, and Spectrum Health all stated that the flight restrictions due to possible 5G spectrum interference will negatively impact their ability to transport hundreds of critical care patients each year, jeopardizing necessary medical treatment.

The Air Medical Operators Association (AMOA) and the Association of Air Medical Services (AAMS), in addition to supporting the granting of HAI's petition, suggested changes to the Conditions and Limitations proposed in the HAI petition to include allowing part 135 operations with radar altimeters that are also "suspected of not functioning normally." AMOA and AAMS also suggested clarifying that the minimum visibilities and altitudes for overwater operation applied to operations conducted under Visual Flight Rules (VFR) and are not applicable to operations being conducted in accordance with an authorized instrument (IFR) procedure.⁴ Additionally, AMOA and AAMS recommended revising the requirement to contact personnel on the ground while conducting operations to unimproved areas at night only if circumstances do not prohibit making such contact. Ten commenters (Air Methods Corporation, CareFlite, Global Medical Response, LifeFlight of Maine, North Flight Aero Med, PHI Health, REACH Air Medical Services, Seven Bar Aviation, Sanford Health, and Spectrum Health) supported the recommendations made by AMOA and AAMS in a grant of HAI's petition.

Air Center Helicopters stated the radar altimeter is only one of a number of tools available to the crew in HAA operations or any night flying scenario. This commenter further stated that not having access to NVGs (due to a radar altimeter being adversely affected by frequency use) only reduces safety as NVGs are a critical safety element and benefit for off-airport and unimproved landing areas. An anonymous commenter stated that all HAA pilots can perform helicopter NVG operations safely with or without an inoperative or unreliable radar altimeter, and that not being able to use NVGs would be detrimental to all HAA part 135 operators and devastating to the communities they serve. The National Air Transportation Association stated it is imperative that the FAA ensure continuity of part 135 helicopter operations, generally, until a solution to the interference issue is developed and deployed.

⁴ The comments regarding minimum visibilities and altitudes are outside the scope of this petition for exemption.

The remaining commenters expressed general support for granting the petition.

The FAA's analysis is as follows:

The FAA agrees with the petitioner that a strong public interest in continued, safe HAA operations using NVGs exists. Commenters also expressed support for enabling HAA operations using NVGs. HAA operations allow critical care patients to receive urgent medical care and transport that they might not otherwise receive or might receive only after an unacceptable delay. HAA operations frequently must operate in and out of unimproved landing areas to access patients. Although FAA regulations permit such operations at night with and without NVGs, certificate holders engaged in HAA operations typically use NVGs. NVGs allow the pilot to better identify obstacles when landing at night on unimproved or off-airport sites and improve depth perception when performing landings especially when used in conjunction with a moveable searchlight. Permitting the use of NVGs in HAA operations in off-airport or unimproved area locations when a radio altimeter might experience interference is in the public interest. As the petitioner described, HAA operations often must occur at night at off-airport or unimproved areas to transport patients who need immediate medical care; the public interest in allowing such operations to continue is considerable, especially given that approximately 40,000 to 50,000 of such operations occur from off-airport or unimproved areas at night. Pet. at 2. A limited number of Part 135 helicopter operators that do not conduct HAA operations also utilize NVGs in their operations. While the petitioner cited the need for continuity of operations to oil exploration facilities in the Gulf of Mexico, the petitioner did not provide information concerning the public interest in exempting certificate holders from § 91.205(h)(7) and § 91.9(a) to enable operations involving oil exploration. As explained below, the safety of NVG operations by HAA operators when a radio altimeter is experiencing interference can be assured through alternate means.

The FAA recently issued AD 2021-23-13 for all helicopters equipped with a radio altimeter.⁵ In issuing AD 2021-23-13, the FAA reviewed the RTCA Report (RTCA Paper No. 274-20/PMC-2073) identified by petitioners and other data described in the AD, and determined that operators cannot rely upon radio altimeters to perform their intended function if they experience interference from wireless broadband 5G C-Band emissions. AD 2021-23-13 requires revising the rotorcraft flight manual (RFM) to incorporate limitations prohibiting certain operations requiring radio altimeter data when in the presence of 5G C-Band interference.⁶ The FAA will issue Notices to Air Missions (NOTAMs) to identify the heliports, airports, and areas within the United States where radio altimeters will be unreliable due to 5G C-Band interference.⁷

Section 135.160(a) requires all rotorcraft operating under part 135 to be equipped with an operable, FAA-approved radio altimeter unless otherwise authorized in certificate holders' MELs. The FAA acknowledges that, in some circumstances, a radio altimeter may provide inaccurate altitude readings; however, consistent with the FAA's past position regarding

⁵ 86 FR 69992 (Dec. 9, 2021).

⁶ AD-2021-23-13, paragraph (g).

⁷ See 86 FR at 69994.

Global Positioning System (GPS) and Automatic Dependent Surveillance-Broadcast (ADS-B) interference, the FAA does not consider radio altimeters inoperable based solely on inaccurate altitude reading due to interference, provided the radio altimeter would otherwise be considered operable. Therefore, relief from § 135.160(a) is not necessary and is denied.

The petitioner requested relief from § 135.179(a), which contains several requirements that apply when an operator conducts operations in accordance with relief provided by an MEL. FAA-approved MELs allow operations of an aircraft under specified conditions with certain equipment inoperative, including radio altimeters. Whether certain equipment is operable or inoperable is determined by whether it conforms to type design. Relief provided by an MEL does not encompass the potential impact of local interference on equipment. Therefore, relief from the provisions of § 135.179(a) is not needed and is denied.

The petitioner requested relief from § 91.205(h)(7), which is necessary because § 91.205(h)(7) prohibits operators' use of NVGs without use of a radio altimeter that is "installed in the aircraft, *functioning in a normal manner*, and approved for use by the FAA" (emphasis added). When interference affects a radio altimeter, the FAA considers the radio altimeter to not function normally for purposes of compliance with § 91.205(h)(7).

NVGs play an important role in enhancing safety during night operations both for en route and operations at off-airport or unimproved landing areas. They allow the pilot to better identify obstacles when landing at night on unimproved or off-airport sites and improve depth perception when performing landings especially when used in conjunction with a moveable searchlight. Under this exemption, using NVGs when the radar altimeter is not functioning normally due to 5G C-band interference requires pilots to use a moveable searchlight. Use of a searchlight will allow for better visual cues for the pilot to determine height above the ground and to assist in determining rates of closure when landing at off-airport or unimproved landing sites. This determination ensures the pilot operates at a requisite level of safety with decision-making concerning landing.

Condition and Limitation No. 4.d. requires pilots or other crewmembers to contact ground personnel to obtain information regarding landing site obstacle and hazard identification. In certain cases, ground personnel may not be present at the landing location to assist with obstacle and hazard identification. AMOA and AAMS recommended an alternative procedure if circumstances do not prohibit making such contact. Consistent with these comments, when ground personnel such as first responders are not present or communication cannot be established with ground personnel, the pilot will be required to perform a high reconnaissance⁸ in order to evaluate the landing environment. By allowing for an alternate procedure, the FAA intends to avoid delaying necessary medical care in instances, for example, when a helicopter air ambulance arrives at a remote off-airport site in advance of ground personnel. Compliance with these conditions requires pre-flight planning and a determination regarding whether the operation is likely to enter an area identified by NOTAM in which radio altimeter is unreliable due to 5G C-band interference.

⁸ As discussed in the Helicopter Flying Handbook (FAA-H-8083-21B) 10-2, *available at* https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/helicopter_flying_handbook/media/hfh_ch10.pdf.

The petitioner requested relief from § 91.9(a), which requires compliance with the operating limitations specified in the approved RFM. Each operator that the FAA expects will need the relief has an RFM or RFM supplement that requires a normally functioning radio altimeter to conduct operations with NVGs. For the same reasons discussed above, the FAA has determined relief from § 91.9(a) is appropriate because many RFMs or RFM supplements require compliance with § 91.205(h) which requires a normally functioning radio altimeter for NVG operations. The relief this exemption provides from § 91.9(a) applies only to any limitations that would conflict with the NVG operations enabled by this exemption. The relief provided by this exemption does not allow operations contrary to any other RFM limitations, including those limitations required by AD 2021-23-13.

HAI cannot receive an exemption from FAA operating regulations because HAI does not conduct HAA operations. However, based on the unprecedented nature of the widespread impacts to radio altimeters as discussed above, the FAA will grant relief to part 119 certificate holders conducting HAA operations in areas in which the FAA has determined that 5G C-Band interference affects or might affect the radio altimeter. To operate under this exemption, each affected certificate holder must submit to the FAA a request in the form of a Letter of Intent to use this exemption and affirm its intentions to comply with the conditions and limitations of this exemption. Consistent with this decision, Condition and Limitation No. 2 requires part 119 certificate holders conducting operations under part 135, subpart L that wish to exercise the relief provided in this exemption to submit a Letter of Intent prior to conducting any operation under Exemption No. 18973. Letters of Intent must be submitted to the Federal eRulemaking Portal: Go to <http://www.regulations.gov> and submit Letters of Intent under Docket Number FAA-2021-1028. Certificate holders should retain documentation to verify proper and timely submission of the Letter of Intent.

Further, this exemption will only be available to operators that need relief because they operate in areas identified by NOTAM in which radio altimeters are susceptible to 5G C-band interference. The FAA expects operators with radar altimeters that are susceptible to 5G C-band interference to modify or replace such equipment to eliminate that susceptibility, to ensure the proper functioning of the equipment and to gain FAA approval to remove the restrictions imposed by AD 2120-23-13 through an Alternative Method of Compliance (AMOC). Based on these expectations, the FAA determined that two years is an appropriate duration for this exemption as it allows sufficient time for operators to accomplish the foregoing actions.

Finally, because this exemption will apply to certificate holders only in particular circumstances, the FAA has determined that, prior to serving in an operation under this exemption, all pilots must receive training on its applicability and use.

In conclusion, the FAA recognizes the safety benefits of using NVGs by HAA operators. Enabling NVG operations in areas that may be affected by 5G C-Band interference through alternate mitigation than the normal functioning of the radio altimeter is in the public interest.

The FAA's Decision

In consideration of the foregoing, I find that a grant of an 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, part 119 certificate holders authorized to conduct HAA operations under part 135, subpart L, are granted an exemption from 14 CFR §§ 91.9(a) and 91.205(h)(7) to the extent necessary to conduct part 135 operations with NVGs, including night landings and takeoffs from unimproved or off-airport sites, in areas identified by NOTAM, in which the radar altimeter is unreliable and thus may not be functioning normally due to 5G C-band interference. Certificate holders exercising the relief provided by this exemption must comply with all conditions and limitations listed below.

The FAA denies the petition for relief from §§ 135.160(a) and 135.179(a), as the petitioner has not established the need for such relief.

Conditions and Limitations

1. This exemption applies only to part 119 certificate holders authorized to conduct HAA operations under part 135, subpart L.
2. Certificate holders must submit a Letter of Intent to the Federal eRulemaking Portal, under Docket No. FAA-2021-1028. Go to <http://www.regulations.gov> and follow the online instructions for submitting documents electronically. The Letter of Intent must state the certificate holder's intention to exercise the relief granted in this exemption and affirm the intention to only conduct operations in a manner consistent with all conditions and limitations herein.
3. Certificate holders must receive authorization from their assigned POI in operations specification A005.
4. For helicopter operations using NVGs, including operations to and from off-airport and unimproved landing sites, such operations may be conducted in areas where a NOTAM identifies the radio altimeter as unreliable, provided:
 - a. The aircraft is equipped with an operable radio altimeter.
 - b. The pilot monitors the radio altimeter and uses it when it is performing normally.
 - c. The aircraft is equipped with a moveable searchlight installed via an FAA-approved installation method, which the pilot must use to assist in determining height above the ground and rates of closure.
 - d. Prior to landing, the pilot or another crewmember must establish radio contact with personnel on the ground at the landing site to receive and confirm a description of the landing site. If radio communication cannot be established with personnel on the ground, the pilot must perform a high reconnaissance to assess the landing location.

5. All pilots must receive training on the applicability and use of this exemption prior to serving in an operation under this exemption. Certificate holders must maintain a record of such training and provide it to the FAA upon request.

The Effect of the FAA’s Decision

This exemption terminates on January 31, 2024, 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-2021-1028 (<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.

Issued in Washington, D.C., on

Robert C. Carty
Acting Executive Director, Flight Standards Service