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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules Governing Certain Aviation Ground Station Equipment	)	WT Docket No. 10-61
	)	
Establishment of Audio Visual Warning System as New Subpart T to Part 87 of the Commission's Rules and Regulations to Authorize Advanced Audio Visual Warning Systems for Antenna Structures and other Air Navigation Obstacles	)	RM-11596

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FURTHER NOTICE OF PROPOSED RULE MAKING

Adopted: February 22, 2011 **Released: March 4, 2011**

Comment Date: [60 days after publication in the Federal Register]
Reply Comment Date: [90 days after publication in the Federal Register]

By the Commission:

I. INTRODUCTION

1. In the *Notice of Proposed Rule Making* in this proceeding, we sought comment on proposals regarding new aviation ground station equipment that would promote aviation safety.[1] In this *Further Notice of Proposed Rule Making*, we seek comment on an additional proposal, which will help aircraft avoid potential collisions with antenna structures and other obstacles.

2. Specifically, we seek comment on a petition for rulemaking filed by OCAS, Inc. (OCAS) regarding audio visual warning systems (AVWS).[2] OCAS, Inc. installs such technology under the trademark OCAS®. AVWS are integrated air hazard notification systems that utilize radar frequencies and VHF voice frequencies to activate obstruction lighting and transmit audible warnings to aircraft on a potential collision course with obstacles such as power lines, wind turbines, bridges and towers. OCAS requests that we amend Part 87 of the Commission's Rules to permit AVWS stations to operate radar units, and to transmit audible warnings to pilots. We seek comment on operational, licensing, eligibility and equipment certification issues regarding AVWS stations and technology.

II. BACKGROUND

3. According to National Transportation Safety Board resources cited by OCAS, an aviation

[1] *See* Amendment of the Commission's Rules Governing Certain Aviation Ground Station Equipment, *Notice of Proposed Rule Making*, WT Docket No. 10-61, 25 FCC Rcd 3355 (2010).

[2] *See* Petition for Rulemaking of OCAS, Inc. (filed March 4, 2010) (Petition).

accident attributable to an air obstacle occurs every twelve days, on average.[3] More than ninety-five percent of those accidents are related to wires, utility poles and static lines; and eighty-five percent of them occur during the day.[4] AVWS stations are designed to minimize the occurrence of such collisions.

4. OCAS states that AVWS stations manufactured by OCAS have been deployed successfully in Europe and Canada.[5] OCAS's AVWS system includes a low-powered continuous wave radar, and a radio capable of transmitting at the same time on all frequencies in the VHF aeronautical band (118-136 MHz).[6] The radar continuously scans for approaching aircraft, and the system activates obstacle lights if an aircraft enters into a predefined horizontal and vertical perimeter ("warning zone").[7] If, despite this visual warning, the aircraft continues toward the structure into a second warning zone, the VHF radio transmits an audible warning describing the hazard (*e.g.*, "Power line . . . power line . . .").[8]

5. OCAS contends that the audible warning component of AVWS represents a substantial safety enhancement over passive marking and lighting, which are common features of aviation collision avoidance measures currently deployed in the United States.[9] The audible warning is designed to interrupt ongoing ground-to-air, air-to-ground or air-to-air transmissions when an aircraft is in sufficient proximity to an obstacle for the VHF signal to be heard by its pilot. OCAS asserts that it is vitally important to interrupt any ongoing VHF voice transmissions at such times to alert the pilot of imminent danger.[10] Recognizing the importance of interference-free transmission of other safety-related communications, however, OCAS proposes to exclude air traffic control, aeronautical enroute, and flight test frequencies from AVWS use.[11]

6. OCAS also requests the Commission to amend Part 87 to "clarify that antenna structures equipped with or supported by AVWS stations are exempt from the continuous lighting requirements of Section 17.51 of the Commission's Rules."[12] It argues that, in contrast to the continuous lighting of obstacles, deployment of AVWS will engender public benefits beyond those related to aviation – benefits

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[3] *Id.* at 7-8 (citing National Transportation Safety Board accident database, www.ntsb.gov/ntsb/query.asp).

[4] *Id.*

[5] *Id.* at 2.

[6] *Id.* at 3.

[7] *Id.* at 3-4.

[8] *Id.* at 4.

[9] *Id.* at 5. OCAS notes that other aviation collision avoidance systems, such as Traffic Collision Avoidance Systems (designed to avoid mid-air collisions between aircraft) and the Terrain Awareness and Warning System (designed to avoid collisions with terrain), also rely on audible warnings. *Id.* at 5-6. Unlike those systems, AVWS does not require any additional on-board equipment, because all aircraft already carry VHF radios. *Id.* at 7 n.7.

[10] *Id.* at 6. OCAS states that, because the system transmits with limited output power and uses a vertically polarized antenna, the VHF transmission is limited to a practical range of approximately four miles horizontal and six thousand feet vertical, so it reaches only aircraft that may collide with the obstacle absent a diversion. *See id.* at 4.

[11] *See id.* at 16, Appendix at 2; OCAS Reply Comments at 4-5; OCAS *Ex Parte* Comments at 1 (filed July 12, 2010). Aeronautical enroute stations provide operational control communications to aircraft along domestic or international air routes, and may not be used for public correspondence. *See* 47 C.F.R. § 87.261. Airlines and other companies that maintain fleets of aircraft use these stations to satisfy certain Federal Aviation Administration requirements. *See* 14 C.F.R. §§ 121.99, 121.125.

[12] *See* Petition at 2.

including lower energy consumption, reduced light pollution, and increased protection of migratory bird populations.[13]

7. In response to a *Public Notice* seeking comment on the petition, the Commission received six comments and one reply comment.[14] Commenters generally support OCAS's proposal to amend Part 87 to authorize AVWS stations.[15] In addition, OCAS submitted memoranda from different offices within the Federal Aviation Administration (FAA) supporting the implementation of AVWS.[16]

III. DISCUSSION

8. An AVWS station requires licensing for three components: (1) the radar unit, (2) the communications link to activate the system when the radar detects an aircraft, and (3) the VHF transmitter to warn the approaching aircraft. We propose to license the radar unit and the VHF transmitter under a single Part 87 authorization, as a form of radiodetermination station.[17]

9. *Radar*. Aeronautical radar frequencies are licensed under Subpart Q of Part 87,[18] after the Commission coordinates with the FAA.[19] The 1300-1350 MHz frequency band is designated for surveillance radar stations and associated airborne transponders.[20] We propose to make this band available for AVWS use.

10. OCAS proposes a maximum output power of two watts, and a maximum effective isotropic radiated power of twenty dBW.[21] Part 87 does not contain power limits for these frequencies; instead, the frequency, emission and maximum power of the radar are determined after coordination with the FAA.[22] Therefore, we tentatively conclude that we need not propose a power limit for radar installations at AVWS stations. We seek comment on these conclusions.

11. *Communications link*. The communications link from the radar to the lights in the OCAS

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[13] *See id.* at 13-15.

[14] Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemakings Filed, *Public Notice*, Report No. 2905 (released March 18, 2010). Comments were received from the Aerospace and Flight Test Radio Coordinating Council (AFTRCC), the Helicopter Association International, Aviation Spectrum Resources, Inc. (ASRI), the National Emergency Medical Services Pilots Association, the Boeing Company (Boeing) and the Utilities Telecommunications Council. OCAS filed reply comments.

[15] The objections in the comments relate primarily to the use of particular VHF frequencies. *See* Boeing Comments at 1; ASRI Comments at 4; AFTRCC *Ex Parte* Comments at 2 (filed May 17, 2010). As noted above, OCAS now proposes to exclude air traffic control, aeronautical enroute, and flight test frequencies from AVWS use, which largely addresses these commenters' concerns.

[16] *See* Petition at Exhibits 1, 3-6.

[17] Radiodetermination is the determination of the position, velocity and/or other characteristics of an object by means of the propagation of radio waves. 47 C.F.R. § 87.5.

[18] 47 C.F.R. §§ 87.471-87.481.

[19] 47 C.F.R. § 87.475(a). The applicant must also notify the appropriate FAA Regional Office prior to submitting an application to the Commission. *Id.*

[20] 47 C.F.R. § 87.475(b)(7). A surveillance radar station is a radionavigation land station employing radar to display the presence of aircraft within its range. *See* 47 C.F.R. § 87.5.

[21] *See* Petition at Appendix at 2.

[22] *See* 47 C.F.R. § 87.131 note 4.

system utilizes frequencies licensed under Part 90 of the Rules.[23] OCAS requests that these frequencies be specifically authorized for AVWS use in Part 87,[24] but we tentatively conclude that such action is not necessary, given that any AVWS operator is likely to be eligible for licensing under Part 90.[25] We seek comment on this conclusion.

12. *VHF transmitter*. OCAS proposes that multiple frequencies be assigned to each AVWS station, based on the frequencies assigned for flight operations in the vicinity, to maximize the likelihood that the pilot of an aircraft approaching an obstacle will hear the audible warning.[26] It requests that AVWS stations be permitted to transmit on frequencies designated for air-to-air communications, aeronautical advisory (unicom) and multicom stations,[27] aviation support and aeronautical utility mobile stations,[28] and aeronautical search and rescue stations.[29]

13. We agree that AVWS stations should be permitted to transmit on multiple frequencies based on the use of frequencies in the vicinity of a proposed AVWS facility, but we do not propose to make all of the requested frequencies available for AVWS use. Specifically, we propose to permit AVWS operation only on unicom and multicom frequencies,[30] aviation support frequencies 123.300 MHz and 123.500 MHz, and air-to-air frequencies 122.75 MHz and 123.025 MHz.[31] We believe that this selection

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[23] While the OCAS AVWS uses UHF frequencies, OCAS does not propose that the communications link be restricted to any particular band. *See* Petition at 2, Appendix at 2.

[24] *See* Petition at Appendix at 2.

[25] While we understand that an AVWS licensee may utilize Part 90 spectrum for ancillary AVWS functions, we do not consider the link to be an aviation service, so we do not propose to license it under Part 87. Nor do we wish to preclude an AVWS operator from using other means (such as a wireline communications link, or unlicensed Part 15 spectrum) of linking the radar to the lights.

[26] *See* Petition at 16, Appendix at 2.

[27] Unicom stations, also referred to as aeronautical advisory stations, provide safety-related and other information to aircraft, primarily general aviation aircraft. Unicom transmissions are limited to the necessities of safe and expeditious operation of aircraft, but unicom stations also may transmit, on a secondary basis, information pertaining to the efficient portal-to-portal transit of an aircraft. *See* 47 C.F.R. § 87.215. Multicom stations provide communications of a temporary, seasonal, or emergency nature involving aircraft in flight where there is no unicom. *See* 47 C.F.R. § 87.237(a), (b).

[28] Aviation support stations are used to coordinate aviation services with aircraft and to communicate with aircraft engaged in pilot training, soaring, and lighter-than-air aircraft. *See* 47 C.F.R. § 87.319. Aeronautical utility mobile stations provide communications for vehicles operating on airport runways and taxiways. *See* 47 C.F.R. § 87.345(a).

[29] *See* Petition at 16, Appendix at 2.

[30] We disagree with ASRI's suggestion that unicom and multicom frequencies be excluded from AVWS use. *See* ASRI Comments at 4. We agree with OCAS that, because these frequencies are among the most-monitored by pilots of helicopters and small aircraft, they are needed to enhance the effectiveness of AVWS stations. *See* OCAS Reply Comments at 7. We also disagree with ASRI's suggestion that AVWS transmissions should be limited to frequency 121.5 MHz. *See* ASRI Comments at 4. Frequency 121.5 MHz is an emergency and distress channel, used by the U.S. Coast Guard and other emergency services to locate persons in distress including the location of downed aircraft. *See* 47 C.F.R. § 87.173(b). Therefore, we do not consider AVWS use appropriate for this channel.

[31] We exclude aviation support frequency 121.950 MHz because use of that frequency requires coordination with the appropriate FAA Regional Office, and aviation support frequency 122.775 MHz because it is used for communications "between aviation service organizations and aircraft in the airport area." 47 C.F.R. § 87.323(b), (c).

of frequencies best balances the goal of maximizing the chance that the flight crew of an aircraft approaching an obstacle will hear the AVWS audible warnings with the need to avoid interference to other communications.

14. OCAS proposes to limit the AVWS VHF transmitter to a maximum transmitter power of approximately 0.5 milliwatts, and an omnidirectional antenna with a maximum gain of +5 dBi.[32] It also proposes that the audible warning not exceed two seconds in duration, with no more than six audible warnings transmitted in a single transmit cycle.[33] We tentatively concur with these proposed technical and operational limits. We invite comment on our conclusion that these limits will minimize the effect of the audible warning on aircraft that are not in the vicinity of an obstacle, and on whether these technical requirements are adequate to both protect existing services and ensure proper operation of AVWS equipment. We also ask commenters to specify each technical and/or operational standard that the equipment should be required to meet for FCC certification.

15. *Eligibility.* OCAS proposes to limit eligibility to owners or operators of antenna structures and other air navigation obstructions that are subject to Part 17 of the Commission's Rules, FAA rules and FAA advisory circulars.[34] We do not believe such restrictions are necessary, as AVWS may be a consideration for any structure deemed by the owner/operator to be a navigation hazard. Moreover, as noted above, use of the radar frequencies must be coordinated with the FAA. Therefore, we propose that AVWS station applicants simply meet the basic Part 87 eligibility requirements.[35] We request comment on this proposal.

16. *Part 17 lighting requirements.* Under Part 17 of the Commission's Rules, an antenna structure must conform to the FAA's determination painting and lighting recommendations set forth on that structure's FAA determination of "no hazard."[36] Section 17.51(a) of the Commission's Rules requires that any antenna structure for which the FAA mandates red obstruction lighting be illuminated from sunset until sunrise, "unless otherwise specified."[37] Similarly, Section 17.51(b) requires that any structure for which the FAA mandates high intensity or medium intensity obstruction lighting be illuminated continuously, "unless otherwise specified."[38] OCAS requests that we amend Part 87 of the Rules to exempt structures equipped with or supported by AVWS stations from the Part 17 continuous

[32] *See* Petition at 4, Appendix at 2.

[33] *See* Petition at Appendix at 2. In addition, the transmit cycle would be limited to twelve seconds, with at least a twenty-second interval between transmit cycles. *Id.*

[34] *See* Petition at Appendix at 1.

[35] *See* 47 C.F.R. § 87.19.

[36] *See* 47 C.F.R. § 17.23. If the FAA determines that an antenna structure construction or alteration is subject to lighting or marking standards prescribed in the current version of FAA Advisory Circular AC 70/7460-1, "Obstruction Marking and Lighting," it sends an acknowledgment to the antenna structure owner describing how the structure should be marked and lighted. *See* 14 C.F.R. § 77.19. This acknowledgment constitutes a determination of "no hazard to air navigation," meaning that the FAA has determined that the structure will pose no hazard to aircraft, provided it is marked and/or lit consistent with the FAA's recommendations. 2004 and 2006 Biennial Regulatory Reviews – Streamlining and Other Revisions of Parts 1 and 17 of the Commission's Rules Governing Construction, Marking and Lighting of Antenna Structures, *Notice of Proposed Rulemaking*, WT Docket No. 10-88, 25 FCC Rcd 3982, 3984-85 ¶ 3 (2010).

[37] *See* 47 C.F.R. § 17.51(a).

[38] *See* 47 C.F.R. § 17.51(b).

lighting requirements.[39]

17. OCAS previously requested a similar determination from the Wireless Telecommunications Bureau's Spectrum and Competition Policy Division (Division). Noting the "otherwise specified" language in Section 17.51, the Division concluded that "where the FAA has issued a Determination of No Hazard for a tower based on the use of an AVWS and where the use of AVWS for that tower is specified in the Commission's Antenna Structure Registration database, Section 17.51 does not require continuous exhibition of lights on that tower."[40] We agree with this analysis. As noted above, the Part 17 lighting requirements flow from the FAA determination of how an antenna structure should be marked and lit. Consequently, if the FAA concludes that a structure does not constitute a hazard to air navigation if it is equipped with an AVWS station in lieu of continuous lighting, then the use of an AVWS station in lieu of continuous lighting would comply with our Part 17 requirements. Therefore, we conclude that there is no need to amend Part 87 as proposed by OCAS.

18. With respect to Commission-registered antenna structures, Section 17.47(a)(1) of the Commission's Rules requires daily "observation" of their lighting, either visually or by "observing an automatic properly maintained indicator designed to register any failure of such lights."[41] The OCAS® system monitors the AVWS station, and alerts a remote facility if the radar or lighting malfunctions. OCAS's petition, however, does not include a proposal to make this a required feature of an AVWS installation.[42] It appears, however, that automatic monitoring of the lights would be necessary to satisfy Section 17.47, given the difficulty of visually monitoring lights that are illuminated only intermittently. We seek comment on whether the rules should require automatic monitoring of the lighting component of an AVWS station.

IV. CONCLUSION

19. We believe that the public interest will be served by amending our Part 87 rules to authorize AVWS stations to help aircraft avoid potential collisions with antenna structures and other obstacles. We seek comment on operational, licensing, eligibility and equipment certification issues regarding deployment of AVWS stations and technology.

V. PROCEDURAL MATTERS

20. *Initial Regulatory Flexibility Analysis.* Pursuant to the Regulatory Flexibility Act,[43] the Initial Regulatory Flexibility Analysis is set forth at Appendix B. We request written public comments on the Initial Regulatory Flexibility Analysis. These comments must be filed in accordance with the same filing deadlines as the comments on the rest of the *Further Notice of Proposed Rule Making*, but they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, shall send a copy of this *Further Notice of Proposed Rule Making*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with the Regulatory Flexibility Act.

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[39] *See* Petition at 17.

[40] *See* Melissa McCarthy, *Letter*, 25 FCC Rcd 7118, 7118-19 (WTB SCPD 2010).

[41] *See* 47 C.F.R. § 17.47(a)(1).

[42] *See* Petition at 4-5, Appendix at 1-2

[43] 5 U.S.C. § 603.

21. *Paperwork Reduction Analysis.* This *Further Notice of Proposed Rule Making* does not contain any proposed information collection(s) subject to the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, it does not contain any new or modified "information collection burden for small business concerns with fewer than 25 employees," pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. § 3506(c)(4).

22. *Ex Parte Presentations.* This is a permit-but-disclose notice and comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's Rules.[44]

23. *Alternative formats.* To request materials in alternative formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to <FCC504@fcc.gov> or call the Consumer and Governmental Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (TTY). This *Further Notice of Proposed Rule Making* also may be downloaded from the Commission's web site at <http://www.fcc.gov/>.

24. *Comment Dates.* Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using: (1) the Commission's Electronic Comment Filing System (ECFS), (2) the Federal Government's eRulemaking Portal, or (3) by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

25. Commenters may file comments electronically using the Commission's Electronic Comment Filing System (ECFS), the Federal Government's eRulemaking Portal, or by filing paper copies.[45] Commenters filing through the ECFS can send their comments as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Commenters may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form." Commenters will receive a sample form and directions in reply. Commenters filing through the Federal eRulemaking Portal <http://www.regulations.gov>, should follow the instructions provided on the website for submitting comments.

26. Commenters who chose to file paper comments must file an original and two copies of each comment. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number. All filings must be sent to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

27. Commenters may send filings by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., S.W., Room TW-A325, Washington, DC 20554. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of **before** entering the building. Commenters must send commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) to

[44] *See generally* 47 C.F.R. §§ 1.1202, 1.1203, 1.1206(a).

[45] *See* Electronic Filing of Documents in Rulemaking Proceedings, *Report and Order*, GC Docket No. 97-113, 13 FCC Rcd 11322 (1998).

9300 East Hampton Drive, Capitol Heights, MD 20743. Commenters should address U.S. Postal Service first-class mail, Express Mail, and Priority Mail to 445 12th Street, S.W., Washington, DC 20554.

28. Interested parties may view documents filed in this proceeding on the Commission's Electronic Comment Filing System (ECFS) using the following steps: (1) access ECFS at http://www.fcc.gov/cgb/ecfs. (2) In the introductory screen, click on "Search for Filed Comments." (3) In the "Proceeding" box, enter the numerals in the docket number. (4) Click on the box marked "Retrieve Document List". A link to each document is provided in the document list. Filings and comments are also available for public inspection and copying during regular business hours at the FCC Reference Information Center, 445 12th Street, S.W., Room CY-A257, Washington, DC, 20554. Filings and comments also may be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., Portals II, 445 12th Street, S.W., Room CY-B402, Washington, DC 20554, telephone 1-800-378-3160, or via e-mail www.bcpiweb.com.

VI. ORDERING CLAUSES

29. Accordingly, IT IS ORDERED that, pursuant to Sections 4(i), 4(j), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 303(r), NOTICE IS HEREBY GIVEN of the proposed regulatory changes described in the *Further Notice of Proposed of Rule Making*, and COMMENT IS SOUGHT on the proposed regulatory changes as set forth in Appendix A.

30. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this *Further Notice of Proposed Rule Making*, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch

Marlene H. Dortch
Secretary

APPENDIX A

Proposed Rules

Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

Part 87 – Aviation Services

1. The authority citation for Part 87 continues to read as follows:

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, 307(e) unless otherwise noted. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-156, 301-609.

2. Section 87.171 is amended by adding a symbol and class of station to read as follows:

§ 87.171 Class of station symbols.

* * * * *

Symbol and class of station

AVW-Audio visual warning systems

* * * * *

3. Section 87.173 is amended in the table in paragraph (b) to read as follows:

§ 87.173 Frequencies.

* * * * *

(b) Frequency table:

Frequency or Frequency Band	Subpart	Class of Station	Remarks
* * *	* * *	* * *	* * *
122.700 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
122.725 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
122.750 MHz	F, Q	MA2, AVW	Private fixed wing aircraft air-to-air communications.
* * *	* * *	* * *	* * *

122.800 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
* * *	* * *	* * *	* * *
122.850 MHz	H, K, Q	MA, FAM, FAS, AVW	
* * *	* * *	* * *	* * *
122.900 MHz	F, H, L, M, Q	MA, FAR, FAM, MOU, AVW	
* * *	* * *	* * *	* * *
122.950 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with control tower; Aeronautical utility stations.
122.975 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
123.000 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
123.025 MHz	F, Q	MA2, AVW	Helicopter air-to-air communications; Air traffic control operations.
123.050 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
123.075 MHz	G, L, Q	MA, FAU, MOU, AVW	Unicom at airports with no control tower; Aeronautical utility stations.
* * *	* * *	* * *	* * *
123.300 MHz	K, Q	MA, FAS, AVW	
* * *	* * *	* * *	* * *
123.500 MHz	K, Q	MA, FAS, AVW	
* * * * *			

4. Section 87.483 is added under *Subpart Q – Stations in the Radiodetermination Service* to read as follows:

§ 87.483 Audio visual warning systems.

An audio visual warning system (AVWS) is a radar-based obstacle avoidance system. AVWS activates obstruction lighting and transmits VHF audible warnings to alert pilots of potential collisions with land-based obstructions. The continuously operating radar calculates the location, direction and groundspeed of nearby aircraft that enter one of two warning zones reasonably established by the licensee. As aircraft enter the first warning zone, the AVWS activates obstruction lighting. If the aircraft continues toward the obstacle and enters the second warning zone, the VHF radio transmits an audible warning describing the obstacle.

(a) Radiodetermination (radar) frequencies. Frequencies authorized under § 87.475(b)(7) of this part are available for use by an AVWS. The frequency coordination requirements in § 87.475(a) of this part apply.

(b) VHF audible warning frequencies. Frequencies authorized under § 87.187(j), § 87.217(a), § 87.241(b) and § 87.323(b) (excluding 121.950 MHz) of this part are available for use by an AVWS. Multiple frequencies may be authorized for an individual station, depending on need and the use of frequencies assigned in the vicinity of a proposed AVWS facility. Use of these frequencies is subject to the following limitations:

(1) The output power shall not exceed -3 dBm watts for each frequency authorized.

(2) The antenna used in transmitting the audible warnings must be omnidirectional with a maximum gain equal to or lower than a half-wave centerfed dipole above 30 degrees elevation, and a maximum gain of +5 dBi from horizontal up to 30 degrees elevation.

(3) The audible warning shall not exceed two seconds in duration. No more than six audible warnings may be transmitted in a single transmit cycle, which shall not exceed 12 seconds in duration. An interval of at least twenty seconds must occur between transmit cycles.

APPENDIX B

Initial Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act (RFA),[1] the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the *Further Notice of Proposed Rule Making* in WT Docket No. 10-61 (*FNPRM*). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *FNPRM* as provided in paragraph 24 of the item, *supra*. The Commission will send a copy of the *FNPRM*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.[2] In addition, the *FNPRM* and IRFA (or summaries thereof) will be published in the Federal Register.[3]

A. Need for, and Objectives of, the Proposed Rules

The proposed rules in the *FNPRM* are intended to address new requirements for aviation radio equipment in a manner that will further aviation safety. In the *FNPRM*, we request comment specifically on whether we should permit the operation of audio visual warning systems (AVWS) to promote aviation safety.

B. Legal Basis

Authority for issuance of this item is contained in Sections 4(i), 303(r), and 403 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r) and 403.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply

The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.[4] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[5] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[6] A small business concern is one that: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.[7] Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency after consultation with the Office of Advocacy of the SBA, and after opportunity for public comment, establishes one or more definitions of

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[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

[2] *See* 5 U.S.C. § 603(a).

[3] *Id.*

[4] 5 U.S.C. § 603(b)(3).

[5] *Id.*

[6] 5 U.S.C. § 601(3).

[7] 5 U.S.C. § 632.

such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

Small businesses in the aviation radio services use very high frequency (VHF), medium frequency (MF), high frequency (HF) radio and other radio frequencies for radar, aircraft radio, and/or any type of emergency locator transmitter (ELT). The Commission has not developed a small business size standard specifically applicable to these small businesses. For purposes of this analysis, the Commission uses the SBA small business size standard for the category Wireless Telecommunications Carriers(except satellite)," which is 1,500 or fewer employees.[8] Census data for 2007, which supersede data contained in the 2002 Census, show that there were 1,383 firms that operated that year.[9] Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. Additionally, the Commission notes that most applicants for recreational licenses in this category of wireless service are individuals. Approximately 131,000 aircraft station licensees operate domestically and are not subject to the radio carriage requirements of any statute or treaty. For purposes of our evaluations in this analysis, the Commission estimates that there are up to approximately 712,000 licensees that are small businesses (or individuals) under the SBA standard. Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.[10] Thus, under this category and associated small business size standard, the majority of firms can be considered small.

Some of the rules proposed herein may also affect small businesses that manufacture aviation radio equipment. The Commission has not developed a definition of small entities applicable to aviation radio equipment manufacturers. Therefore, the applicable definition is that for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturers. The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment."[11] The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.[12] For this category of manufacturers, Census data for 2007, which supersede the similar data in the 2002 Census, show that there were 398 such establishments that operated that year. Of those 398 establishments, 393 (approximately 99%) had fewer than 1000 employees and 912 (approximately 97%) had fewer than 500 employees. Between these two figures, the Commission estimates that about 915 establishments (approximately 97%) had fewer than 750 employees and, thus, would be considered small under the applicable SBA size standard. Accordingly, the majority of

[8] 13 C.F.R. § 121.201, NAICS code 517210.

[9] U.S. Census Bureau, 2007 Economic Census, Sector 51, 2007 NAICS code 517210 (rel. Oct. 20, 2009), http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0700A1&-_skip=700&-ds_name=EC0751SSSZ5&-_lang=en.

[10] *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "1000 employees or more."

[11] U.S. Census Bureau, 2002 NAICS Definitions, "334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing"; http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342.

[12] 13 C.F.R. § 121.201, NAICS code 334220.

establishments in this category can be considered small under that standard.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

The rule changes under consideration in the *FNPRM* would require manufacturers to meet certain criteria and potential licensees would be required to operate the equipment as prescribed in the Rules, including prior coordination with the FAA. We believe the other proposed rules would have no significant effect on the compliance burdens of regulatees. We invite comment on our tentative conclusion that the possible rule changes will not have a negative impact on small entities, or for that matter any entities, and do not impose new compliance costs on any entity. To the extent that commenters believe that any of the above possible rule changes would impose a new reporting, recordkeeping, or compliance burden on small entities, we ask that they describe the nature of that burden in some detail and, if possible, quantify the costs to small entities.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[13]

We hereby invite interested parties to address any or all of these regulatory alternatives and to suggest additional alternatives to minimize any significant economic impact on small entities. Any significant alternative presented in the comments will be considered.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

None.

[13] 5 U.S.C. § 603(c)(1)-(4).