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

In the Matter of	)	
	)	
Amendment of the Commission's Rules	)	WT Docket No. 11-202
to Permit Radiolocation Operations in	)	
the 78-81 GHz Band	)	
	)	
Request by the Trex Enterprises	)	RM-11612
Corporation for Waiver of Section	)	
90.103(b) of the Commission's Rules	)	

NOTICE OF PROPOSED RULE MAKING AND ORDER

Adopted: December 15, 2011 **Released: December 20, 2011**

Comment Date: [30 days after Federal Register publication]
Reply Comment Date: [45 days after Federal Register publication]

By the Commission:

I. INTRODUCTION

1. Foreign object debris (FOD) at airports, including any substance, debris, or object in a location that can damage aircraft or equipment, can seriously threaten the safety of airport personnel and airline passengers and can have a negative impact on airport logistics and operations.[1] According to the Federal Aviation Administration (FAA), FOD "has the potential to damage aircraft during critical phases of flight, which can lead to catastrophic loss of life and airframe, and at the very least increased maintenance and operating costs."[2] Moreover, the direct maintenance costs to airlines caused by FOD have been estimated to be one to four billion dollars per year.[3] Trex Enterprises Corporation (Trex) has developed radar technology that meets the FAA's guidance and performance specifications for FOD detection equipment and can reduce this risk to personal safety and property by detecting the presence of FOD on airport runways.[4] In this *Notice of Proposed Rule Making and Order*, we seek comment on the best way to enable the use of this new safety-related technology, and in the interim we grant Trex's request for a waiver to permit certification and use of FOD radar detection equipment operating in the 78-81 GHz band, pending the outcome of this rulemaking proceeding.

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[1] Advisory Circular No. 150/5210-24, Airport Foreign Object Debris (FOD) Management, Federal Aviation Administration, U.S. Department of Transportation, September 30, 2010, at ¶ 1.1.d. FOD varies in size and form and includes a wide range of items such as parts fallen from aircraft; misplaced tools, equipment and supplies; rocks and pavement fragments; luggage; and wildlife. *Id.* at ¶ 2.2.c. Dark-colored items that are difficult to detect visually against the tarmac make up almost half of FOD. *Id.*

[2] *Id.* at ¶ 2.1.

[3] *See* Insight SRI Ltd., "The economic cost of FOD to airlines," at 9 (2008). Indirect costs (delays, plane changes, fuel inefficiencies, etc.) are estimated to be another eleven billion dollars. *Id.*

[4] *See* Petition for Rulemaking to Amend Part 90.103(b) to Add the 78-81 GHz Band to the Table Specifying Frequencies Available for Assignment to Stations in the Radiolocation Service (filed August 10, 2010) (Petition) at 4.

2. The 78-81 GHz band in which Trex's equipment operates is allocated on a primary basis for Federal and non-Federal radio astronomy and radiolocation systems[5] but is not listed in the table of frequencies available under Part 90, which authorizes non-Federal radiolocation operations such as Trex's FOD detection equipment.[6] Trex proposes that the Commission commence a rulemaking to make such a listing, and in the interim, grant Trex a waiver to permit the certification, licensing, and use of its FOD detection technology in the 78-81 MHz band.

3. In this *Notice of Proposed Rule Making* (*NPRM*), we seek comment on a proposal by Trex to amend Part 90 of our rules to permit non-Federal radiolocation operations, including Trex's FOD radar detection technology, in the 78-81 GHz band and to impose a specific assignment limitation to protect radio astronomy service operations in this band from harmful interference.[7] We also seek comment on whether we should instead amend Part 15 to open the band to non-Federal radiolocation operations (including FOD detection devices) on an unlicensed basis. And we seek comment on whether we should amend Part 90 to permit use of the 78-81 GHz band by FOD detection devices at airports on a licensed basis, while permitting other uses on an unlicensed basis pursuant to Part 15 of our Rules.

4. In the *Order*, we grant Trex's request for a waiver to permit certification and use of FOD radar detection equipment operating in the 78-81 GHz band, pending the outcome of this rulemaking proceeding.[8] In light of the FAA guidance that the presence of FOD on airport runways, taxiways, aprons, and ramps "poses a significant threat to the safety of air travel," we find that this waiver is in the public interest.

II. NOTICE OF PROPOSED RULE MAKING

5. Trex and commenters in the record have made a strong case that, for both safety and cost savings reasons, the public interest would be served by amending our rules to permit use of the 78-81 GHz band for FOD detection radar. We seek comment below on how best to amend the rules to reach this result.

6. *Permissible use*. Trex seeks the use of the 78-81 GHz band for FOD detection at airports but also supports the availability of the band for any conforming radiolocation use.[9] Permitting only FOD detection at airports, which Trex asserts is a safety of life service, would effectively prevent any potential co-channel interference between 78-81 GHz band radiolocation operations.[10] We propose to amend our Part 90 rules to permit radiolocation use of the 78-81 GHz band for FOD detection at airports, and we seek comment on whether to amend those rules to permit radiolocation use of the band for any other conforming radiolocation use. We also seek comment on any costs associated with our proposal, as well as any costs associated with of allowing other conforming radiolocation use, including but not limited to any other use of the spectrum that might be precluded by the amendment to our rules.

7. We are concerned, however, that limiting use of the 78-81 GHz band to use by FOD

[5] *See* 47 C.F.R. § 2.106. Space research (space-to-earth), amateur, and amateur-satellite operations are allocated on a secondary basis. *Id*.

[6] *See* 47 C.F.R. § 90.103(b).

[7] *See* Petition. The Wireless Telecommunications Bureau sought comment on the Trex petition. *See* Wireless Telecommunications Bureau Seeks Comment on Petition for Rulemaking filed by Trex Enterprises Corporation to Make the 78-81 GHz Band Available to Part 90 Radiolocation Service Stations, *Public Notice*, RM-11612, 25 FCC Rcd 13167 (WTB 2010). Comments generally supporting the proposal were received from the University of Illinois at Urbana-Champaign, the Chicago Department of Aviation, and the National Radio Astronomy Observatory (NRAO). Trex filed reply comments.

[8] Request for Waiver of Section 90.103(b) (filed November 3, 2010) (Request).

[9] *See* Petition at 11.

[10] *See id.* at 6.

detection devices at airports and potentially other conforming radiolocation uses solely on a licensed basis could frustrate future opportunities for additional systems with safety-related applications to use the band. In Europe, this band is used for Short Range Radar (SRR) equipment for collision mitigation and traffic safety applications[11] and we expect these applications to be an important advance in vehicle safety in the United States.[12] The Commission has proposed to amend its rules to permit use of the 77-81 GHz band for tank level probing radar (TLPR) devices,[13] which is also a safety-related use.[14] Both SRR and TLPR technologies are likely to be authorized on an unlicensed basis.

8. In light of these other safety-related uses of the band, we seek comment on whether we should open the band to other non-Federal radiolocation operations, as well as FOD detection devices, on an unlicensed basis. Because the band will be in demand for other uses, commenters should address whether the FOD detection systems are capable of sharing the 78-81 GHz band. Alternatively, if FOD radars require exclusive use of a frequency band, we seek comment on whether and what frequency bands other than 78-81 GHz may be appropriate for FOD detection systems.[15] What are the advantages and disadvantages of these approaches, and would they be cost effective? We seek comment on whether, since other uses are and will be permitted in the 78-81 GHz band,[16] we should apply exclusion zones or other methods to FOD detection operations at airports to avoid interference. Commenters should address the costs of these methods to avoid interference to FOD detection operations at airports, as well as the potential savings that the use of SSR or TLPR devices may generate. Commenters therefore should address whether one service warrants having a higher priority use of the 78-81 GHz frequency band.

9. *Licensed or unlicensed use for FOD*. We propose to amend our rules to permit the licensing and operation of FOD detection radar pursuant to Part 90.[17] We note, however, that Part 15 of the Commission's Rules permits the operation of low power radio frequency devices without an individual license from the Commission[18] and that the Commission recently proposed to amend the Part 15 rules to

[11] *See* ECC Decision of 19 March 2004 on the frequency band 77-81 GHz to be designated for the use of Automotive Short Range Radars (ECC/DEC/(04)03).

[12] *See* Comments of the National Telecommunications and Information Administration (NTIA) in ET Docket No. 98-153, at 22-23 (filed Jan. 15, 2004) ("NTIA and the Commission should continue to monitor the deployment of vehicular radars in the 24 GHz band, the technology advancements in the 77-81 GHz band, and the development of vehicular radars outside the United States. NTIA will also work with the Commission to ensure that an adequate frequency allocation in the 77-81 GHz band is available for the operation of vehicular radar systems.")

[13] *See* Amendment of Part 15 of the Commission's Rules to Establish Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz, *Notice of Proposed Rule Making and Order*, ET Docket No. 10-23, 25 FCC Rcd 601, 604 ¶ 8 (2010) (*TLPR NPRM*). TLPR devices are used in closed storage tanks and vessels made of metal, concrete, or material with similar attenuating characteristics, at fixed locations at petroleum and chemical production and storage facilities, and similar commercial and industrial sites. *See id.* at 601 ¶ 1.

[14] For example, SRR systems used for collision mitigation and traffic safety services could significantly improve safety for millions of drivers. *See* Amendment of Part 2 of the Commission's Rules to Realign the 76-81 GHz Band and the Frequency Range above 95 GHz Consistent with International Allocation Changes*, Report and Order*, ET Docket No. 03-102, 19 FCC Rcd 3212, 3216 ¶ 11 (2004). In addition, TLPR systems have the potential to help avoid overfilling and spillage of hazardous materials which could have serious environmental consequences, as well as result in personal injury and property damage. *See TLPR NPRM*, 25 FCC Rcd at 604 ¶ 8.

[15] Commenters should also discuss any potential costs associated with using other bands for FOD detection radar.

[16] Tank level probing radars are currently operating in the 77-81 GHz band under a waiver. *See TLPR NPRM*, 25 FCC Rcd at 601 ¶ 2. *See also* note 12, *supra*, regarding the prospective use of SRR for vehicle radar systems in the United States.

[17] *See* Appendix A, *infra*.

[18] *See* 47 C.F.R. Part 15. The Trex FOD detection equipment operates with a transmit power of one hundred milliwatts. *See* Petition at 11.

permit use of the nearby 76-77 GHz band for fixed ground-traffic radar at airports.[19] Moreover, a commenter in that proceeding has proposed that FOD detection radar also be authorized in the 76-77 GHz band under Part 15.[20] Trex argues that unlicensed operation is not appropriate because FOD detection is a critical safety operation. If, however, airport ground-traffic and FOD detection radar can operate effectively in the 76-77 GHz band on an unlicensed basis, then Part 15 may also be appropriate for FOD detection radar in the 78-81 GHz band.[21]

10. It is also unclear whether interference is a material concern. 78-81 GHz band services typically employ highly directional antennas because propagation loss is significant over short distances at these frequencies.[22] The narrow beams utilized by the Trex FOD equipment, taken together with the very high path losses in this region of the spectrum, generally mitigate potential interference. We seek comment on whether there is any potential for interference from 78-81 GHz band radiolocation systems to other services in the 78-81 GHz band, including TLPR and SRR devices.

11. In light of these factors, we seek comment on whether radiolocation use of the 78-81 GHz band should be authorized pursuant to Part 15 of our rules rather than Part 90. Commenters supporting an unlicensed approach should suggest specific changes to the Part 15 rules and provide information regarding the qualitative or quantitative costs, as well as benefits, likely to result from those changes. In addition, we ask whether we should require manufacturers to maintain a record of FOD detection radar equipment that they operate or sell (including the identity of the customer and the address or geographic coordinates of the airport), to be made available to the Commission upon request. Commenters that recommend operational restrictions and record keeping information should also address how such requirements could be enforced effectively for unlicensed devices. Furthermore, we encourage commenters to address the cost of maintaining these records and the benefits that maintaining such records could provide. We also seek comment on whether Part 15 radar applications should be limited to specific locations, such as airports, and what other safeguards might be appropriate in light of the importance of FOD detection to the safety of life. Part 15 devices may not cause harmful interference and must accept any interference received, including interference that may cause undesired operation.[23] Do these restrictions make Part 15 operation unworkable for FOD detection?[24]

12. *Interference mitigation measures.* With respect to potential interference to radio astronomy operations, Trex proposes a detailed procedure for coordinating radiolocation operations in the 78-81 GHz band with radio astronomy service (RAS) observatories.[25] We believe that Trex's proposal, which

[19] *See* Amendment of Sections 15.35 and 15.253 of the Commission's Rules Regarding Operation of Radar Systems in the 76-77 GHz Band, *Notice of Proposed Rule Making*, ET Docket No. 10-28, 26 FCC Rcd 8107, 8114 ¶ 18 (2011).

[20] *See Ex Parte* Notice in ET Docket 10-28 of XSight Systems, Ltd. dated January 13, 2011.

[21] The Commission previously recognized the importance to aviation safety of monitoring the movement of aircraft and service vehicles to avoid collisions and runway incursions. *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, 3356 ¶ 3 (2010).

[22] *See, e.g., TLPR NPRM*, 25 FCC Rcd at 603 ¶ 9.

[23] *See* 47 C.F.R. § 15.19(a)(3).

[24] We note that NTIA has filed comments on behalf of FAA in other rulemaking proceedings stating that FAA supports the authorization of FOD detection radar only on a licensed basis, in order to ensure that the operations do not incur interference. *See* Comments of the National Telecommunications and Information Administration in ET Docket Nos. 10-28 and 11-90 (filed Nov. 21, 2011)

[25] *See* Petition at 9. Specifically, Trex proposes that an entity seeking to conduct radiolocation operations in the 78-81 GHz band first reach a coordination agreement with the National Science Foundation, then submit the agreement to the Wireless Telecommunications Bureau, which would issue a public notice stating that the entity may (continued….)

appears to be based on the model for coordinating vehicle-mounted earth stations in the 14.47-14.5 GHz band,[26] is unnecessarily burdensome, particularly if use of the 78-81 GHz band is limited to airport FOD detection. We do not believe that the same coordination procedure is required because, unlike FOD detection at airports, vehicle-mounted earth stations in the 14.47-14.5 GHz band operate ubiquitously with an upward-oriented antenna.

13. Rather, if we conclude that operation of FOD radars is appropriate under Part 90 of the Commission's Rules, we propose to rely on existing mitigation procedures: Under our procedures currently in place, no coordination of radiolocation systems is required before an applicant submits its application for a license to the Commission. However, because the 78-81 GHz band is shared with Federal operations, applications would be coordinated with the National Telecommunications and Information Administration (NTIA). We request comment on this proposal and on whether any additional procedures would be necessary to protect RAS observatories in the event that use of the 78-81 GHz band is authorized for applications other than FOD detection. We also seek comment on the costs and benefits of relying on our existing procedures, or any other procedures commenters suggest may be necessary.

14. *Technical specifications*. In addition, we request comment on the technical parameters for radiolocation equipment operating in the 78-81 GHz band. While Trex states that its FOD detection technology complies with the applicable technical requirements for radiolocation devices in Part 90,[27] we note that Part 90 contains no specific power limit, bandwidth limitation, or frequency stability requirements for operations in this band and that applications are considered and authorized on a case-by-case basis.[28] We request comment on whether we should place limitations on radiolocation equipment in general or FOD detection equipment in particular, the costs of doing or not doing so, and the benefits of either course of action.

III. ORDER

15. Trex requests a waiver of Section 90.103 to permit certification, manufacture, licensing, and use of its FOD detection radar equipment pending the resolution of its petition for rulemaking.[29] Section 1.3 of the Commission's Rules provides that we may grant a waiver if good cause therefor is shown.[30] We conclude that we should grant a waiver to permit the certification, manufacture, and licensed use of the Trex equipment pursuant to Part 90, pending the resolution of this proceeding, under certain conditions. We find granting this waiver to be in the public interest, for the reasons set forth below.

16. Part 90 currently does not authorize radiolocation operations in the 78-81 GHz band.[31] We believe that FOD detection radar equipment operating with the technical specifications specified by

(Continued from previous page)
commence operations in thirty days if no party has opposed the operations. *See id.* at 10. Trex submitted a list of sites with which coordination would be required. *Id.* at 9-10. NRAO's comments identify additional observatories with which coordination would be required, as well as sites that can be deleted from Trex's list because they do not observe in the 78-81 GHz band. *See* NRAO comments at 1-2.

[26] *See* 47 C.F.R. § 25.226(d); *see also* Amendment of Parts 2 and 25 of the Commission's Rules to Allocate Spectrum and Adopt Service Rules and Procedures to Govern the Use of Vehicle-Mounted Earth Stations in Certain Frequency Bands Allocated to the Fixed-Satellite Service, *Report and Order*, IB Docket No. 07-101, 24 FCC Rcd 10414, 10433-34 ¶¶ 58-64 (2009).

[27] *See* Petition at 11.

[28] *See* 47 C.F.R. §§ 90.205(r) (power and antenna height limits); 90.207 (types of emissions); 90.209 (bandwidth limitations); 90.210 (emission masks); 90.213 (frequency stability).

[29] *See* Request at 12.

[30] 47 C.F.R. § 1.3; *see also* WAIT Radio v. FCC, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

[31] *See* 47 C.F.R. § 90.103(b).

Trex[32] is comparable with other Part 90 radiolocation devices and that its operation at airports would not cause interference. Commenters have made a strong case regarding the critical safety-related issues associated with the use of FOD detection systems, to protect both life and property. Permitting use of the 78-81 GHz band for FOD detection radar pending the resolution of this rulemaking proceeding would benefit airline passengers and crews and airport personnel by enhancing their safety. Moreover, it could save airlines substantial expenses associated with FOD damage, without imposing any new compliance costs or posing any substantial interference threat to other users of the band. Therefore, considering the public interest in aviation safety and the minimal interference potential of the Trex equipment, we conclude that a grant of a waiver pending the outcome of this rulemaking proceeding would be in the public interest.

17. Although we believe that interference to radio astronomy is very unlikely, we nonetheless will require that, for the duration of the waiver, operation of Trex FOD detection systems be limited to airports. Because we believe that the risk of interference from such operations to other authorized users is very low, we will not limit the number of deployments during the waiver period.[33]

18. Accordingly, pending the resolution of Trex's petition for rulemaking, we waive Section 90.103 to permit the manufacture, certification, and use of Trex's FOD detection radar technology in the 78-81 GHz band, subject to the following conditions:

1) The FOD detection radar equipment shall conform to the technical specifications contained in Trex's rulemaking petition and waiver request, as listed below:

   Transmit power: 100 mW
   Antenna gain: 45 dBi
   System EIRP: 35 dBW
   Transmit polarization: Vertical
   Transmit beamwidth: (3 dB) 1 deg (el) x 0.2 deg (az)
   FMCW Chirp (el scan) repetition rate: 139.5 Hz.

2) The FOD detection radar equipment shall comply with all the technical specifications applicable to operation under Part 90,[34] with the exception of Section 90.103(b), and shall be certified by the Commission. A copy of this *Notice of Proposed Rule Making and Order* shall be submitted with the equipment authorization application.

3) Eligibility is restricted to airport authorities or entities approved by the Federal Aviation Administration. Use is limited to FOD detection. Operation of Trex's FOD detection systems by eligible entities will require a separate Commission authorization. Applications must reference this *Order* (by the FCC number set forth above). Applicants must specify the proposed area of operation and the requested frequency segment. Part 90 frequency coordination is not required.[35] No operation is permitted prior to license grant, and no applications will be granted until Trex obtains equipment authorization. The FCC will

[32] *See* Petition at 11; Request at 5.

[33] *See TLPR NPRM*, 25 FCC Rcd at 614 ¶ 39.

[34] We note that Part 90 does not contain any emission masks specific to operation in the 78-81 GHz frequency band. The FOD detection radar most closely resembles vehicular radars permitted under Section 15.253 of our Rules, 47 C.F.R. § 15.253, so we will use the out-of-band emissions mask applicable to those vehicular radars for the purposes of this waiver. Specifically, radiated emissions below 40 GHz shall not exceed the general Part 15 emission limits in Section 15.209 of our Rules, 47 C.F.R. § 15.209, and radiated emissions outside the operating band and between 40 GHz and 200 GHz shall not exceed 600 pW/cm^2 at a distance of three meters from the exterior surface of the radiating structure. *See* 47 C.F.R. § 15.253(c).

[35] *See* 47 C.F.R. § 90.175(j)(6).

coordinate license applications with the NTIA.

IV. PROCEDURAL MATTERS

19. *Initial Regulatory Flexibility Analysis.* As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the proposals suggested in the *Notice of Proposed Rule Making*. The IRFA is set forth in Appendix B.

20. *Initial Paperwork Reduction Analysis.* The *Notice of Proposed Rule Making* contains proposed new information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

21. *Ex Parte Presentations*. The proceeding this Notice initiates shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.[36] Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

22. *Comment Dates.* Pursuant to Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments and reply comments to the *Notice of Proposed Rule Making* 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 Fed. Reg. 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: http://fjallfoss.fcc.gov/ecfs2/ or the Federal eRulemaking Portal: http://www.regulations.gov.
- Paper Filers: Parties who choose to file by paper must file an original and two copies of each filing. 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.

[36] 47 C.F.R. §§ 1.1200 *et seq.*

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, 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.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.
- U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th St., SW, Washington, DC 20554.

23. *Alternate Formats.* To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

24. Interested parties may view this *Notice of Proposed Rule Making and Order* and 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, SW, 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, SW, Room CY-B402, Washington, DC 20554, telephone 1-800-378-3160, or via e-mail www.bcpiweb.com.

25. *Further Information.* For further information, contact Tim Maguire, Mobility Division, Wireless Telecommunications Bureau, at 202-418-2155 or TTY 202-418-7233, or via the Internet at tim.maguire@fcc.gov.

VI. ORDERING CLAUSES

26. IT IS ORDERED that, pursuant to Sections 1, 4(i), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 303(f), 303(g), and 303(r), this *Notice of Proposed Rule Making and Order* IS ADOPTED.

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

28. IT IS FURTHER ORDERED that, pursuant to Sections 4(i), 302, and 303(e) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 302, and 303(e), and Section 1.3 of the Commission's Rules, 47 C.F.R. § 1.3, the Request for Waiver filed by Trex Enterprises Corporation on

November 3, 2010, IS GRANTED IN PART and DENIED IN PART to the extent set forth above. This action is effective upon release of this *Notice of Proposed Rule Making and Order*.

FEDERAL COMMUNICATIONS COMMISSION

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 90 – Private Land Mobile Radio Services

1. The authority citation for Part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).

2. Section 90.103(b) is revised by amending the table in paragraph (b) by inserting a new entry at the end of the table, and adding a new paragraph (c)(30) to read as follows:

§ 90.103 Radiolocation Service.

* * * * *

(b) * * *

RADIOLOCATION SERVICE FREQUENCY TABLE

Frequency or band	Class of stations	Limitations
* * *	* * *	* * *
78,000-81,000	……do	30

(c) * * *

(30) Eligibility is restricted to airport authorities, or entities approved by the Federal Aviation Administration. Use is limited to foreign object debris detection.

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 *Notice of Proposed Rule Making* in WT Docket No. 11-xxx (*NPRM*). 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 *NPRM* as provided on the first page of this document. The Commission will send a copy of the *NPRM*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.[2] In addition, the *NPRM* 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 *NPRM* are intended to permit non-Federal radiolocation operations in the 78-81 GHz band. In the *NPRM*, we request comment specifically on whether we should permit the use of the band for foreign object debris detection at airports 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), 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 such term which are appropriate to the activities of the agency and publishes such definition(s) in the

[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.

Federal Register."[8]

The SBA has developed a small business size standard for airport operations within the two broad economic census categories of "Air Traffic Control"[9] and "Other Airport Operations."[10] Under both categories, the SBA deems a business to be small if it has average annual receipts of seven million dollars or less. For the census category of Airport Operations, Census Bureau data for 2007 show that there were 1,075 firms in this category that operated for the entire year.[11] Of this total, 899 had annual revenue of less than five million dollars, and 74 had annual revenue between five and ten million dollars.[12] 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."[13] 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.[14] 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 1,000 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 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 *NPRM* would require manufacturers to meet certain criteria and potential users to operate the equipment as prescribed in the Rules. We believe the proposed rules would have no other 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

[8] 5 U.S.C. § 601(3).

[9] 13 C.F.R. § 121.201, NAICS code 488111.

[10] 13 C.F.R. § 121.201, NAICS code 488119.

[11] U.S. Census Bureau, 2007 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization," Table 5, NAICS code 48811 (issued Nov. 2010).

[12] *Id.*

[13] 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.

[14] 13 C.F.R. § 121.201, NAICS code 334220.

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.[15]

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. We will consider any significant alternative presented in the comments.

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

None.

[15] 5 U.S.C. § 603(c)(1)-(4).