

WT Docket 11-27 • AMTRAK Use of AMTS Frequencies

Comments of Hammett & Edison, Inc., Consulting Engineers

This filing is in response to the Commission's February 18, 2011, Public Notice, DA 11-322, *Wireless Telecommunications Bureau Seeks Comment on National Railroad Passenger Corporation (AMTRAK) Request for Waiver of Certain Part 80 Automated Maritime Telecommunications System (AMTS) Rules To Implement Positive Train Control (PTC)*. The comment deadline is March 11, 2011, so this filing is timely.

I. Requested Waivers Constitute a New Radio Service

1. First, Hammett & Edison, Inc., Consulting Engineers (H&E) believes that the requested waivers of the Part 80 AMTS rules are so extensive that they actually constitute a *de facto* request for rulemaking. According to Footnote 8 of DA 11-322, no fewer than twenty-five Part 80 rules would require waivers. For this reason alone, the requested rule waivers should be denied. If AMTRAK wishes to create a new Part 90 PTC radio service using 217–218 MHz AMTS and 219-220 MHz AMTS A and B block maritime service frequencies, it should file a Petition for Rulemaking to that effect.*

2. We realize that the reason for requesting additional spectrum for PTC is a 2015 federal mandate for U.S. railroad traffic to employ PTC, pursuant to the Rail Safety Improvement Act of 2008 (RSIA), because existing 220–222 MHz Part 90 Private Land Mobile Radio frequencies are not expected to offer sufficient spectrum for a new PTC system.† Nevertheless, this shortcoming does not justify bypassing the rule making process. Further, because of this RSIA nationwide mandate for PTC, grant of the rule waivers to AMTRAK would make “me too” waivers by other railroads likely, and the Commission would then be hard pressed to deny other railroads those same waivers.

II. Potential for Interference to TV Channels 10 and 13

3. Even if the creation of a new land mobile radio service by rule waiver was permitted under the Administrative Procedures Act (APA), which we believe is not the case, it would be inappropriate to grant such waivers because of the potential interference to TV Channels 10 and 13.

* It is unclear from the January 3, 2011, AMTRAK *Request for Waiver* whether AMTRAK is limiting its waiver request to just the AMTS A and B blocks between 217–219 MHz, and excluding AMTS C and D blocks at 216-217 MHz, or including the C and D blocks. This is because, at page three of the AMTRAK request, it states that the waivers are desired for “AMTRAK’s use of any AMTS spectrum to which it may acquire (as a licensee or spectrum lessee) in the 35 counties of interest to it.”

† As claimed in the January 3, 2011, AMTRAK *Request for Waiver*, at pages 7–8.



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4. The DTV transition period has of course ended (on June 12, 2009). The Commission is well aware of the multitude of viewer complaints that resulted when many VHF high band analog TV stations transitioned from their interim UHF DTV channel back to their VHF high band DTV channel.

5. To address this problem, on November 30, 2010, the Commission commenced a rulemaking, ET Docket 10-235 (“VHF Improvements”), but the notice of proposed rulemaking (NPRM) was not published in the Federal Register until February 1, 2011; thus, comments are not due until March 17, 2011, and reply comments are not due until April 18, 2011.

6. At paragraph 15 of the ET Docket 10-235 NPRM, the Commission states:

We also are aware that broadcasters have encountered technical issues in using VHF channels to provide satisfactory [DTV] service to viewers.

At paragraph 42 the NPRM states:

We recognize that television broadcasters have had some difficulty in ensuring consistent reception of [DTV] signals.

At paragraph 43 the NPRM states:

Complaints from individuals typically have indicated that a consumer who was previously able to receive a station’s analog VHF signal was not able to receive that station’s digital VHF signal.

At paragraph 46 the NPRM states:

We are therefore seeking solutions to the VHF digital TV reception difficulties. In this regard, we are considering changes to our DTV operating rules to mitigate or overcome these challenges.

III. Complication of AMTS Interference to TV Channels 10 and 13

7. The requested waivers are problematic because of the unknown impact of AMTS operations on VHF high band digital TV operations in general, and digital TV operation on TV Channels 10 and 13 in particular. Section 80.215(h)(2) of the FCC Rules requires AMTS stations less than 169 kilometers from a TV Channel 13 station, or less than 129 kilometers from a TV Channel 10 station, or using a transmitting antenna height of greater than 61 meters AGL, to submit “a plan to limit interference.” Further, while the AMTRAK waiver request claims, at page 7, that “favorable action on this request will not harm operations on television channels 10 and 13,” it offers no additional information on why that might be the case. That is, no supporting engineering study was provided as required by FCC Rules.

8. Section 80.215(h)(2)(ii) requires an analysis of residences within the predicted interference contour(s) of Channel 10 and 13 TV stations. The interference calculating methodology is given in a



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1982 FCC Office of Science & Technology (OST, now Office of Engineering & Technology, or OET) Technical Memorandum FCC/OST TM82-5, *Guidance for Evaluating the Potential for Interference to TV from Stations of Inland Waterways Communications Systems*. This technical memorandum was, of course, designed for the protection of analog TV Channel 10 and 13 operations, not digital TV Channel 10 and 13 operations, and therein lies the problem: Neither AMTRAK, nor the Commission, know the interference impact of greatly expanded AMTS operations by AMTRAK on the reception of digital TV Channel 10 or 13 signals, or VHF high band DTV signals in general.

9. Given that DTV tuners are not required to be double-conversion receivers, or have any minimum interference-rejection requirements,[‡] it is reasonable to expect that AMTS signals are still an adjacent-channel interference threat to digital operation on TV Channel 13, and still a half-intermediate frequency (IF) interference threat to digital operation on TV Channel 10. Compounding the problem is that while the former VHF high band Grade B protected contour was the F(50,50) 56 dBu, the VHF high band DTV protected contour is the F(50,90) 36 dBu, which would be at least 17 dB weaker.[§]

10. Thus, before creating a new land mobile PTC radio service at 217-218 MHz and 219–220 MHz, the Commission needs to have OET undertake an updated study, to determine the interference susceptibility of consumer-grade DTV tuners from potentially interfering AMTS signals. While digital TV signals have coding isolation that analog signals did not, it is unknown whether that coding isolation will offset the weaker DTV protected signal strength. As the technical regulatory agency for communications in the U.S., the Commission owes it to the viewing public, and to broadcasters, to find out.

IV. Related WT Docket 06-142 SVRS Rulemaking

11. We note that there is a pending related rulemaking, WT Docket 06-162, regarding 173.075 MHz Stolen Vehicle Recovery System (SVRS) stations. This rulemaking is in response to a waiver request by Lojack Corporation (Lojack), to (1) expand the use of SVRS from just Police Departments to all Public Safety Pool eligible entities; (2) allow system activation via portable or mobile devices; and (3) increase the allowable duty cycle to 1,000 mSec every eight seconds. SVRS operations are an adjacent-channel interference to TV Channel 7 operations, and like the AMTS rules, the SVRS protection rules have not been updated to consider the impact to digital TV Channel 7 operations. Perhaps one updated OET study could therefore be used to determine the interference susceptibility of

[‡] While the Advanced Television Systems Committee, Inc. (ATSC) has its Document A/74:2010, *Receiver Performance Guidelines*, it is a Recommended Practice rather than a full ATSC standard, and in any event its usage is not mandatory under Section 15.117 of the FCC Rules.

[§] This is less than the full 20 dB field strength differential to account for the greater time variability required for DTV reception.



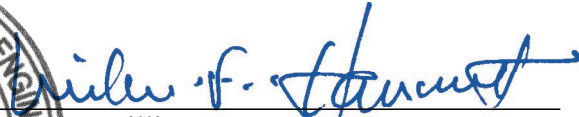
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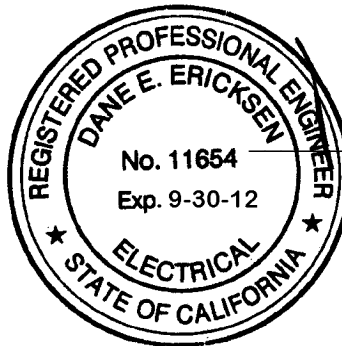
consumer-grade DTV tuners both to SVRS-into-TV Channel 7 reception and to AMTS-into-TV Channels 10 and 13 reception.

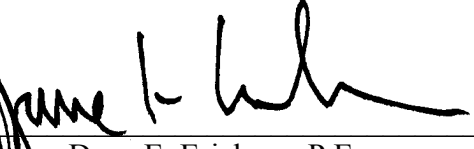
V. Summary

12. Grant of the requested waiver would be inappropriate, because the scope of the rule waivers are so extensive as to constitute a request for a new land mobile radio service; the correct vehicle is therefore a Petition for Rulemaking, not a request for a waiver of twenty-five FCC rules. Even if re-submitted as a Petition for Rulemaking, it would be inappropriate to allow such expanded use of 217–218 MHz and 219–220 MHz AMTS frequencies until the Commission completes an updated study of the interference susceptibility of consumer-grade DTV tuners to AMTS signals.




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