

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Amendment of Section 90.20(e)(6) of the Commission's Rules	)	WT Docket No. 06-142 RM-11135

To: The Commission

**JOINT COMMENTS OF THE  
ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.  
AND THE  
NATIONAL ASSOCIATION OF BROADCASTERS**

The Association for Maximum Service Television, Inc. (“MSTV”)<sup>1</sup> and the National Association of Broadcasters (“NAB”)<sup>2</sup> hereby file in response to the Commission’s Notice of Proposed Rulemaking in the above captioned proceeding that seeks to relax several important rules that are designed to prevent interference to television reception.<sup>3</sup> We urge the Commission to safeguard Channel 7 operations and to reject the flawed proposals of LoJack Corporation (“LoJack”) with respect to Section 90.20(e)(6) of the Commission’s rules. It is critically important that the Commission protect the viewing public’s ability to receive over-the-air television programming, including emergency information, news, and entertainment programming. LoJack’s proposals would create a serious risk of interference to this important

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<sup>1</sup> MSTV is a nonprofit trade association of local broadcast television stations committed to achieving and maintaining the highest technical quality for the local broadcast system.

<sup>2</sup> NAB is a nonprofit trade association that advocates on behalf of more than 8,300 free, local radio and television stations and also broadcast networks before Congress, the Federal Communications Commission, the Courts, and other federal agencies.

<sup>3</sup> See *Amendment of Section 90.20(e)(6) of the Commission’s Rules*, Notice of Proposed Rulemaking, WT Dkt. No. 06-142, RM-11135 (rel. July 24, 2006) (“*SVRS NPRM*”).

public service by, among other things, combining unjustified power increases with dramatically intensified spectrum usage, all while eliminating critical Channel 7 interference studies.

The Commission should preserve the Channel 7 study requirement. These studies protect the ability of local television broadcast stations to make their service available to the viewing public. They should not be disregarded, especially in light of LoJack's desire to increase power, intensify the spectrum's use for purposes other than the recovery of stolen vehicles, and use digital emissions whose interference risks have yet to be tested and established. Elimination of the Channel 7 interference studies would be premature and imprudent. As the Commission has noted, "the public interest is better served by minimizing the potential for interference prior to its occurrence rather than afterwards."<sup>4</sup> In fact, in order to minimize the potential for interference, the requirements for applicants with respect to these studies should be revised so that all affected parties are given adequate notice that interference may occur and so that the technical information with respect to potential interference to Channel 7 operations is more accurate.<sup>5</sup> MSTV and NAB are also concerned about the fact that some SVRS applications have requested authority for hundreds of thousands of VLU transmitters, enough to cast doubt on

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<sup>4</sup> *Amendment of Section 90.20(e)(6) of the Commission's Rules to Revise the Authorized Duty Cycle on 173.075 MHz*, Report and Order, WT Dkt. No. 01-97, RM-9798, 17 FCC Rcd 16938 (2002), at ¶ 15.

<sup>5</sup> *See* Statement of Hammett & Edison, Inc., Consulting Engineers, attached hereto as an Appendix, at ¶ 14. LoJack's interference studies have been deeply flawed. *See* Appendix at ¶¶ 7-11 (citing studies' tendency to dismiss grave interference concerns on the basis of erroneous assumptions and to omit critical showings and details). Further, the MicroLogic report incorrectly assumed that all TV Channel 7 signals are horizontally polarized, a mistake that should be corrected in future interference studies. *See id.* at ¶ 13.

the assumption that signals from VLU transmitters are unlikely to be a significant interference threat.<sup>6</sup>

LoJack's proposal to eliminate the interference studies ignores critical distinctions between analog television service and digital service. As the engineering analysis of Hammett & Edison, Inc., demonstrates, the suggested historical lack of interference to analog Channel 7 operations cannot be extrapolated to DTV Channel 7 operations.<sup>7</sup> The Commission has already pointed out the problem of the "all-or-nothing" nature of DTV service.<sup>8</sup> Although interference to analog operations "results in progressive degradation of the visual and aural signals... interference to a digital signal can result in the total loss of an otherwise excellent television signal."<sup>9</sup> Another important difference between analog and digital television signals lies in the protected signal thresholds: from F(50,50) 56 dBu for analog signals to F(50,90) 36 dBu for digital signals.<sup>10</sup>

Given these significant distinctions between analog and digital Channel 7 operations, the requirement pursuant to Section 90.20(e)(6) that applicants submit Channel 7 interference studies is particularly important. The value of these studies is underscored by the

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<sup>6</sup> *See id.* at ¶ 10.

<sup>7</sup> *See id.* at ¶¶ 4-5, 15.

<sup>8</sup> *SVRS NPRM* at ¶ 20.

<sup>9</sup> *Id.* Moreover, mitigation factors relied on in the analog SVRS context, such as notch filters, could actually make the problem worse with respect to DTV reception; this risk warrants further study. Also, "[i]t can hardly be in the public interest to expect thousands or tens of thousands of viewers to figure out what the problem is, contact their local TV Channel 7 station, and eventually have a custom notch filter installed." *See Appendix* at ¶¶ 11-12.

<sup>10</sup> *See Appendix* at ¶ 4 (noting that "ratios derived for protection of an analog TV signal having a Grade B signal threshold of 56 dBu, and based on an interfering signal using frequency modulation (FM) and a duty cycle of 200 mSec every 10 seconds... are not applicable to the ratios for protection of a digital TV signal having a DTV threshold of 36 dBu, and based on an interfering signal using digital modulation and a duty cycle of 5 seconds per minute....").

fact that the Commission and local broadcasters are currently devoting their efforts to ensuring a smooth DTV transition. Harmful interference on Channel 7 would be a set-back not only for local television broadcasters and the Commission, but also for the public that relies on the television service provided by Channel 7 licensees. Consequently, the Commission should minimize the potential for interference and avoid upsetting the public's expectation and right to receive clear, uninterrupted digital service on Channel 7.<sup>11</sup>

Section 90.20(e)(6)'s provisions with respect to Channel 7 interference studies do not specify which desired-to-undesired ("D/U") signal ratio should be used for purposes of determining whether the interference contour is limited to fewer than 100 residences within 169 kilometers of each base station. It would be a mistake to apply the MicroLogic methodology that was used to establish initial interference ratios for SVRS operations to proposed digital SVRS operations.<sup>12</sup> Rather, in order to establish appropriate LoJack-into-DTV interference criteria, LoJack should be required to conduct laboratory tests using SVRS test transmitters and various consumer grade DTV tuners. These studies should determine the tuners' susceptibility to interference from both wideband (20 kHz) and narrowband (12.5 kHz) LoJack signals. These tests should also study the sensitivity of DTV receivers to the various duty cycles of SVRS base

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<sup>11</sup> See Joint Comments of MSTV and the National Association of Broadcasters, *Unlicensed Operation in the TV Broadcast Bands*, ET Dkt. Nos. 04-186 and 02-380 (filed Nov. 30, 2004), at 3-4 (observing that "[i]f consumers are subject to harmful interference [] – even if such interference could eventually be corrected – they will see a frozen picture or a blank screen. Such disruption could easily derail the digital transition, which is currently at a critical juncture in its development"). Such a loss of service could also have more immediate and harmful effects if it came, for example, in the midst of an emergency broadcast.

<sup>12</sup> See Appendix at ¶¶ 2-5 (noting that the MicroLogic report used U/D ratios that appear to have been misinterpreted as D/U ratios, and that in any case, such ratios are inapt in light of changed circumstances such as the digital transition and proposed power and duty cycle increases).

stations and VLU transmitters.<sup>13</sup> The nature of the LoJack VLU signals should be studied as well, and if they are not identical to SVRS base stations signals then separate D/U interference ratios will need to be developed. Without such careful study, the risks posed to digital Channel 7 operations by LoJack's proposal would not be justified.

MSTV and NAB further note that LoJack has not explained why a decrease in bandwidth from 20 kHz to 12.5 kHz requires *doubling* the maximum power limit for both base stations and for vehicle location unit ("VLU") output power. LoJack seeks to increase base station ERP from 300 watts to 500 watts and VLU power from 2.5 watts to 5 watts to compensate for asserted degradation in the units' performance. As the Commission has noted, however, LoJack "has not shown how it arrived at [the] asserted degradation values" of 2.2 dB for base stations and 3 dB for VLUs.<sup>14</sup> Also troubling is LoJack's failure to account for the increased risk of interference to Channel 7 operations.<sup>15</sup>

Finally, the Commission should not accept LoJack's proposal to use the 173.075 MHz spectrum for uses other than for the recovery of stolen vehicles. LoJack seeks to intensify dramatically the use of this spectrum, a proposal that would create similarly dramatic interference effects.<sup>16</sup> LoJack's suggestion of a plethora of additional services in the 173.075 MHz band would fundamentally change the band's use for the worse and would cause predictable harm to the public. As the Commission has already recognized, "the breadth and

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<sup>13</sup> See Appendix at ¶ 15.

<sup>14</sup> SVRS NPRM at ¶ 11.

<sup>15</sup> *Id.*

<sup>16</sup> See Appendix at ¶ 16 (noting that increased frequency of transmissions due to expanded permissible uses could raise the interference threat to unacceptable levels for both analog and digital Channel 7 operations).

vagueness of LoJack’s proposed expansion of uses” is worrisome because “overuse of the frequency could result in spectrum congestion and interference” to other users, including the Federal Government and Channel 7 television operations (both analog and digital).<sup>17</sup> Such overuse could ultimately prevent the beneficial use of the 173.075 MHz band for its intended law enforcement purposes. The expansion of uses that LoJack seeks is particularly astonishing because it is made alongside LoJack’s proposed elimination of Channel 7 interference studies, request for increased power, and an insufficiently tested proposal to use digital emissions. LoJack’s plan could make interference a chronic problem and make identification of the source of interference impractical.

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<sup>17</sup> *SVRS NPRM* at ¶ 26.

**CONCLUSION**

In order to prevent harmful interference to Channel 7 operations, MSTV and NAB respectfully request that the Commission reject LoJack's proposal and require LoJack to conduct additional technical studies before proceeding further. The attached engineering analysis of Hammett & Edison, Inc. explains these concerns in more detail.

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## Appendix