

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

**In the Matter of** )  
 )  
**EFFECTS OF COMMUNICATIONS** ) **WT Docket No. 03-187**  
**TOWERS ON MIGRATORY BIRDS** )

To: The Commission

**REPLY COMMENTS OF ARRL, THE NATIONAL ASSOCIATION  
FOR AMATEUR RADIO**

ARRL, the National Association for Amateur Radio, also known as the American Radio Relay League, Incorporated (ARRL), by counsel and pursuant to Section 1.415 of the Commission’s Rules, hereby respectfully submits its Reply Comments in the above-captioned proceeding, pursuant to the *Notice of Inquiry*, FCC 03-205, released August 20, 2003 (the Notice). This Notice was published in the Federal Register September 12, 2003 (68 Fed. Reg.53696). These reply comments are timely filed. The Notice seeks information on the impact of communications towers on migratory birds. Specifically, the Notice seeks comment on evidence of bird mortality due to collisions with communications towers and measures that might be taken to minimize such instances. Finally, the Notice asks what effects such mitigation techniques might have on the ability of communications licensees to provide efficient and reliable service.

1. ARRL filed no comments in this proceeding, as it has neither conducted nor participated in studies to date that might be responsive to the Commission’s inquiry. However, ARRL researched the issue in some depth prior to the initiation of the instant proceeding, due to the fact that the issue of the alleged effects of communications antennas on bird mortality often arises at municipal land use hearings and in the drafting

of municipal ordinances regulating communications antenna structures. Amateur Radio operators are routinely subject to extensive land use approval procedures in connection with their outdoor antennas and antenna support structures in residential areas. At public hearings before city, town and county authorities, those who are opposed to communications antennas for aesthetic reasons typically raise issues such as migratory bird mortality as one of several arguments<sup>1</sup> against permitting communications antennas, or limiting the placement of such. These issues are, almost without exception, raised by opponents of Amateur Radio antennas at municipal forums without scientific basis, as a tactical means of attempting to preclude residential outdoor antenna installations.

2. Amateur radio operators utilize fixed antennas and support structures located mostly in residential areas. Typical outdoor Amateur Radio antenna heights are in the 50 to 120 foot range, though some are installed up to 200 feet. Rarely are Amateur antenna installations any higher than that, due to requirements such as FAA approval, painting and lighting applicable to antennas over 200 feet in height; the cost of such antennas, and the difficulties in obtaining land use approval for high antennas.

3. ARRL's research into the scientific literature reveals that communications towers below 400 feet are almost universally considered not to be contributors to bird mortality. In *Avian Mortality at Communication Towers: A Review of Recent Literature, Research and Methodology*, a March, 2000 paper prepared under contract for the U.S. Fish and Wildlife Service by Paul Kerlinger, Ph.D, bird kills associated with communications towers involve tall towers almost exclusively, and most often involve lit

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<sup>1</sup> Arguments typically raised against antennas in residential areas include aesthetic impact, effect on adjacent property values, radio frequency interference, safety, health effects of exposure to radio frequency energy, and environmental issues including bird mortality. Persons who oppose antennas for aesthetic

towers and inclement weather. Kerlinger cites one study<sup>2</sup> over a 28-year period of time, in which a television tower reduced from 600/1000 feet in height was reduced to 300 feet. The number of bird kills during that period was reduced from approximately 275 kills per year to only 8 per year. Another study cited by Kerlinger<sup>3</sup> noted that during 38 Spring and Fall migration seasons, 121,560 carcasses were found representing 123 species of birds, but no carcasses were found at all until the tower was increased in height from 500 feet to 1,000 feet in height. Height was deemed a significant feature, as was the effect of guy wires at that height. Inclement weather was also a contributing factor. Kerlinger himself conducted studies from June through October of 1997 of eleven wind turbines located on a forested hilltop in southern Vermont, each of which was 192 feet in height. There was found no evidence of bird mortality at all. Another Kerlinger study of wind power facilities in Vermont,<sup>4</sup> one of the few that specifically focused on tower height as a factor in bird mortality, concluded that “(l)ittle evidence implicating towers less than 300-450 feet in towerkills that involved anything greater than a few birds.”

4. Kerlinger cites<sup>5</sup> ongoing, unpublished studies, which he concludes reveal that towers less than 400-500 feet in height are not as dangerous to migrating songbirds, especially neotropical species, as are towers in excess of 500 feet. A prevailing theory and basis for continued studies is the disorienting effect of certain tower lighting on birds, which may then fly into guy wires. Lower towers, and unguyed and unlit towers would

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reasons most often raise the issues as a “scattergun” tactic, in hopes of defeating a particular antenna proposal.

<sup>2</sup> Crawford, R.C. and R.T. Engstrom, *Characteristics of Avian Mortality at a North Florida Television Tower: A 28-year Experience* (to be published).

<sup>3</sup> Kemper, C., 1996. *A study of Bird Mortality at a West Central Wisconsin TV Tower from 1957-1995*.

<sup>4</sup> Kerlinger, P., 2000. *An assessment of the impacts of Green Mountain Power Corporation's wind power facility on breeding and migrating birds in Searsburg, Vermont*.

<sup>5</sup> Kerlinger, P., *Avian Mortality at Communication Towers: A Review of Recent Literature, Research and Methodology*, at 22.

therefore not be a contributor to the problem. Ultimately, Kerlinger notes that the scientific literature is nearly devoid of towerkill information involving towers shorter than 400 feet, and that: “(t)he old literature did not provide information that implicates towers less than 400 feet in anything but a very few kills. Similarly, the results from the most recent studies...in Kansas...West Virginia...and New York..., though only suggestive, do not implicate short towers. Information from the wind power industry are consistent with the communications tower studies that short towers (<300 feet) rarely kill migrants.”<sup>6</sup>

5. The comments in this proceeding to date support the conclusion that communications towers less than approximately 400 feet do not contribute substantially to migratory bird kills, and therefore the Commission should conclude that no regulatory action is justified for towers below that height other than painting and lighting requirements already in place for aviation safety reasons. The Director of the Fish and Wildlife Service (FWS) released a letter to its Regional Directors on September 14, 2000 setting forth service guidelines on siting, construction, operation and decommissioning of communications towers. These guidelines, *inter alia*, urge communications service providers to utilize towers less than 199 feet above ground level. There is no apparent support in the scientific literature for this premise. In fact, the comments in this proceeding from the Department of the Interior, FWS admit that “(w)hile short (less than 200 feet AGL), unguyed and unlit towers may be the least problematic to birds, no systematic research has been conducted on the overall impacts of the short towers on birds.” FWS also admits that “tower height alone may not necessarily be a critical issue that results in mortality. Admittedly, some of the largest kills have been historically

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<sup>6</sup> *Id.*, at 30.

documented at tall television towers.” However, FWS does not focus on height in the abstract, but rather on the effects of tower lighting on bird mortality: “While some have argued that there is a likely height threshold beyond which avian mortality will be significant, the Service points out that studies previously cited have documented nighttime bird attraction to lights at or nearly at ground level during inclement weather.” (FWS comments, at 9). Therefore, it would appear that the issue of tower lighting, and not short towers themselves, would be a candidate for further study. In any case, unlit Amateur Radio antennas cannot be considered candidates for regulation under any circumstances, based on the record.

6. The Commission’s principal role in this issue is to determine whether, pursuant to its obligations under the National Environmental Policy Act (NEPA), 47 U.S.C. §4321 *et seq.*, the Commission should require Environmental Assessments or Environmental Impact Statements for communications towers prior to authorizing new or modified facilities, relative to the impact of such on migratory bird mortality. Regardless of how the Commission decides to deal with this from the perspective of tall towers, the scientific literature does not justify any regulation of towers less than approximately 400 feet in height. In any case, Amateur Radio antennas, which rarely exceed 200 feet in height, should be exempt from routine environmental processing. The Commission should conclude that there is no basis for environmental assessment of Amateur Radio antennas less than 200 feet in height.

Therefore, the foregoing considered, ARRL, the National Association for Amateur Radio, respectfully requests that the Commission specifically exempt Amateur Radio antennas, and in general all antennas less than 400 feet in height, from routine

environmental processing, relative to their impact on migratory bird mortality, since there is no scientific evidence that towers below that height contribute significantly to migratory bird kills.

Respectfully submitted,

**ARRL, the National Association  
for Amateur Radio**

225 Main Street  
Newington, CT 06111

By: \_\_\_\_\_  
Christopher D. Imlay  
Its General Counsel

Booth, Freret, Imlay & Tepper, P.C.  
14356 Cape May Road  
Silver Spring, MD 20904-6011  
(301) 384-5525 telephone  
(301) 384-6384 facsimile  
W3KD@arrl.org

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