



ARRL *The national association for*
AMATEUR RADIO
INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

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Via Courier and Email
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**RE: Interference Complaint, Municipal Broadband
Over Power Line System at Manassas, Virginia;
Request for Immediate Cessation of Operation.**

Greetings:

This letter responds to that of Mr. Casey dated November 30, 2005, addressing numerous pending complaints of harmful interference to licensed Amateur Radio stations in Manassas, Virginia caused by unlawful operation of an Access Broadband over Power Line (BPL) system during a period of well over a year and a half. ARRL, the National Association for Amateur Radio, also known as the American Radio Relay League, Incorporated (ARRL), complained by letter dated October 13, 2005 about the unlawful operation of this system located in Manassas, Virginia owned by the City of Manassas, and operated by Communications Technologies, Inc. (COMTek). This facility, which has been the subject of unresolved interference complaints to the Commission dating back to March of 2004, is still regularly causing harmful interference to Amateur Radio stations and should not now be operating. To date, no action has been taken by the

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Commission to stop the interference. The Commission cannot reasonably conclude that a period of over a year and a half of unabated harmful interference does not justify enforcement action.

On November 30, 2005, Mr. Casey issued a letter calling for responses by the individual Amateur Radio complainants and ARRL not later than 15 “working days” from that date. The Casey letter states that documents on file with the Commission indicate that the “parties have begun (sic) to meet together to discuss the nature and extent of any (sic) interference and some steps have been taken to resolve the complaints.” The letter indicates that the Spectrum Enforcement Division (SED) “commends this action” and asserted that it is in the “best interests of the parties for this dialogue to continue.” The letter calls for a status report from all parties describing in detail all instances of interference, “or” a report of all actions that have been taken or are planned in response to complaints of interference.

ARRL strenuously disagrees with Mr. Casey’s assessment that it is in the best interests of the parties to continue meetings and discussions about the ongoing interference from this hopelessly flawed BPL system, while the system is allowed to continue to operate. It is quite obviously *not* in the best interests of the radio amateurs, who are regularly and continuously receiving interference, to suffer that interference while being called to meetings with the operator of the BPL system. These meetings have not produced any solution to the interference problem, but have instead created the illusion that the problem is being addressed. COMTek, by its own admission, has not been able to control the BPL system it is operating. This system should have been taken off the air long ago, pending reconfiguration or re-engineering of it, and the only operating that it should be doing is for purposes of interference testing. Had the Commission acted responsibly in the discharge of its most fundamental obligation (to prevent, or to resolve, interference to and from facilities it authorizes, this system would not have been allowed to operate, and the interference would not have been permitted to continue for such an absurdly long period of time. It has, however, because the Commission, for political reasons, has consistently refused to enforce its rules with respect to BPL, including Section 15.5.

There have been repeated meetings and discussions about the interference problem, which have supplanted any actual resolution of the interference by either the City of Manassas or COMTek. COMTek and Manassas are well aware that they can avoid having to do anything at all about the BPL interference if they continue a “dialogue” with the victims of the interference. That is an avoidance tactic and one no longer to be tolerated by either ARRL or its members in Manassas. The Commission’s Rules do not require that the BPL operator report on its progress in interference resolution, or in this case the lack thereof. Rather, they require elimination of the interference. The only solution at this late date is to order that the Manassas system, which is an unlicensed system of RF devices which are permitted to operate only on a non-interference basis, cease operation, save for interference testing. It cannot be permitted to resume operation unless and until it demonstrates that the system does not cause harmful interference. It is time for the Commission to start doing its job.

According to Section 15.615(d) of the Commission's Rules, a BPL operator, upon being informed of the presence of harmful interference, must investigate the reported interference and resolve confirmed harmful interference. This has to be "*successfully completed*" by the BPL operator "*within a reasonable period according to a mutually acceptable schedule, after the receipt of an interference complaint, in order to avoid protracted disruptions to licensed services.*" No reasoned examination of this case could produce a finding that this rule has been complied with in Manassas. There has been no resolution of the interference at all; COMTek and the City have shown a complete inability to resolve the interference (despite the good faith investment by numerous licensed radio amateurs of hundreds of hours of their uncompensated time); the interference resolution was not successfully completed within a reasonable time; and it most certainly was not resolved according to a "mutually acceptable schedule." The interference from this system has caused repeated harmful interference for a period of more than a year and a half. This is, looking objectively at the matter, an absurdly long and unacceptable amount of time in the estimation of anyone except, apparently, the Commission.

Most recently, at yet another meeting held December 13, 2005 at which an ARRL representative was present, COMTek and the City of Manassas openly acknowledged the interference to Amateur stations that had been complained of since March of 2004. They claimed, however, that until about 30 to 45 days previous to the meeting, they had not been able to notch Amateur allocations, because they had not acquired the "necessary equipment" to do so. It is readily apparent therefore that the Manassas BPL system has been uncontrollable by COMTek, and that the claims that have been made in the past, in response to formal interference complaints, that certain portions of the system were notched, was in fact not the case. This explains why, after COMTek and Manassas claimed earlier that they had notched certain Amateur bands, the complaining Amateurs continued to notice unabated interference when they would operate mobile within the area.

In an e-mail message sent in mid-November by Walter Adams of COMTek to the Manassas Amateurs suffering the interference, Mr. Adams stated as follows:

Although Main.net devices have the ability for us to manually log into them (an authority level we were granted by Main.net or October 24th), Main.net's software does not have an automated notching feature that automatically notches new/replaced devices. We have begun working on our own tool to automate detection and most (if not all) of the notching process. We will keep you periodically advised re progress...

The Radio Amateurs in Manassas do not want to be periodically advised of what COMTek views as "progress." They reasonably expect the interference to be eliminated in a timely manner. This hasn't happened. It is apparent that the Main.net devices used in Manassas do not permit interference resolution in a reasonable time period. By the admission of COMTek, the capability of reducing interference in this system does not

exist. COMTek cannot remove by notching interference across all amateur HF bands, and in fact can't even remove interference within a single HF band, as has been demonstrated in the 40-meter Amateur band, most often tested in Manassas. The system should have been shut down heretofore, and it should now be ordered to shut down, pending a final, certain determination that the system can be operated without interference.

Mr. Casey's letter asks what the results were of an October 28, 2005 meeting. That response has been provided by Mr. Donald Blasdell, W4HJL in his response to the Casey letter, dated December 9, 2005. It is apparent that the October 28, 2005 meeting produced no measurable results, since BPL interference levels at the areas near Weir and Traveller Streets and Barnett Street were "S9 plus 40 dB" on normal amateur radio equipment. That level precludes virtually all Amateur Radio communications. As Mr. Blasdell indicates, the interference levels vary, but as of December 9, 2005, the interference levels were, in that same area, around S9 plus 20 to 40 dB.¹ As Mr. Blasdell concluded, "it appears COMTek has no control over the notching of the (first generation) system."

It is apparent from the minutes of the October 28 meeting that neither COMTek nor Main.net has any intention of replacing the uncontrollable Main.net hardware prior to, at the earliest, mid-2006, and it is unclear that even then, any replacement equipment will have any improvement over the current system equipment. COMTek and Main.net, according to the minutes of the meeting, were debating whether the interference from their system rose to the level of "harmful" interference, and apparently urged that there be some agreed-upon definition. It is this kind of "smoke and mirror" discussion that obfuscates the rather simple fact that it is the obligation of Manassas and COMTek to eliminate the interference, not to debate definitions that are objective and firm. No reasonable person can debate that BPL noise resulting in a full-scale signal strength meter reading in a good-quality Amateur Radio receiver which makes Amateur Radio communications impossible meets the definition of harmful interference found in Resolution 68 of the Radio Regulations and in 47 C.F.R. § 2.1.

Mr. Tarnovsky reports that what has been shown by COMTek is that the Main.net system "can only be notched to a limited degree. Going back to the same location that was notched a day earlier, yields as much interference as (there was prior to the notching)." Mr. Tarnovsky reports "radical variations of BPL interference throughout the city. For instance, one day the BPL interference levels are almost undetectable; surveying the same area the following day, we find the BPL interference up to unacceptable levels again (20-40 dB over S9)." He goes on to state that the "BPL consortium claims it cannot

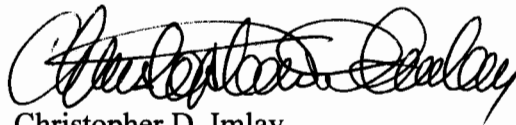
¹ Although communications receivers and typical mobile antennas do not provide an absolute indication of the field strength of the BPL signal, an estimate based on the antenna factor of a typical mobile antenna, the bandwidth of a communications receiver and the distances involved shows that the field strength of an "S9+40 dB" signal is approximately 60 dBuV/m. Most mobile antennas are approximately 10 meters distant from overhead power lines. If this level were extrapolated to 30 meters distance and adjusted for bandwidth, the level of the BPL emission would be approximately 46dBuV/m. Any BPL noise of S6 or better, and certainly noise over S9 on a good quality amateur receiver, will preclude many, if not all Amateur communications by masking desired received signals, and would therefore constitute harmful interference as a practical matter.

tell if the programmed notch for a specific modem has been accepted by the modem.” As stated above, this indicates that this BPL system is uncontrolled, and apparently uncontrollable. It is to this day causing harmful interference to Amateur Radio communications and must be shut down, pending successful resolution of the interference.

As a final matter, the data entry for the Manassas BPL system remains incomplete. On November 23, 2005, ARRL supplemented its Complaint by a second letter which noted that the Manassas BPL system was in violation of Section 15.615 of the Commission’s rules. As of that date, no information about the Manassas BPL system had been entered in the “publicly available” database of BPL systems. According to the *Public Notice*, DA 05-2701, released October 13, 2005, all information called for by Section 15.615 of the Commission’s Rules had to be in the BPL database on or before November 19, 2005. On November 30, 2005, some, but not all, of the required information was added to the database with respect to the Manassas system (obviously in response to ARRL’s complaint supplement). However, to the present time, the database information provided still fails to comply with Section 15.615(a)(4), because the only information about the type of Access BPL equipment in use provided about this system is the name of the Manufacturer, “Main.net”. The Manassas system therefore remains in violation of Section 15.615(a) of the Commission’s rules.

ARRL again requests that the BPL facility at Manassas, Virginia be instructed to shut down immediately; and that it not resume operation unless the entire facility is shown to be in full compliance with Commission rules regarding radiated emissions; with the non-interference requirement of Section 15.5 of the Commission’s Rules; and not in any case until thirty days subsequent to full compliance with Section 15.615(a) of the rules.

Yours very truly,



Christopher D. Imlay

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