

Comments submitted by:

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In the Matter of Amendment of Parts 1, 2, 15, 25, 27, 74, 78, 80, 87, 90,97, and 101 of the Commission's Rules Regarding Implementation of the Final Acts of the World Radiocommunication Conference (Geneva,2007) (WRC-07), Other Allocation Issues, and Related Rule Updates

Amendment of Parts 2, 15, 80, 90, 97,and 101 of the Commission's Rules Regarding Implementation of the Final Acts of the World Radiocommunication Conference (Geneva, 2012)(WRC-12), Other Allocation Issues, and Related Rule Updates

Petition for Rulemaking of James E. Whedbee to Amend Parts 2 and 97 of the Commission's Rules to Create a Low Frequency Allocation for the Amateur Radio Service

Petition for Rulemaking of ARRL to Amend Parts 2 and 97 of the Commission's Rules to Create a New Medium-Frequency Allocation for the Amateur Radio Service

My comments address the proposal for amateur radio operation on the 2200m and 630m bands. These comments are anecdotal in nature but will serve to indicate the extent of successful operation on both of these bands.

I have been operating on the 2200m since July, 2004 (first under the 2200m experimental program here in Canada) until very recently, while my 630m operations consist of one winter (2014-2015) of operation only. Hopefully, others who have been operating in Canada for several years under the 630m variant licence, can describe their operational outcomes as well.

On both 2200m, my antenna system is the same. It consists of an inverted 'L' style antenna with a vertical drop wire of approximately 70'. The vertical drop wire is further connected to the end of a large tophat, consisting of three-wires approximately 100' in length, each spaced approximately 1 meter apart. The antenna's ground system consists of approximately 50 buried radials, varying in length from 100' to 40' at a depth of approximately 2". The ground system is structured over a very poor natural ground consisting mainly of large sandstone deposits. Dual-band operation is possible by switching the appropriate loading coil in place at the bottom of the vertical element and feeding power to the antenna via a small ferrite matching transformer.

My dual-band transmitter is capable of 1000W DC input but rarely run at this level so as not to exceed legal ERP/EIRP restrictions. All of my operation (except the very early days of the experimental program) is run at the maximum allowable ERP/EIRP limits, calculated to the best of my ability to do so. This mainly consists of using the antenna's modeled gain at the two frequencies and adjusting power to comply with ERP/EIRP restrictions.

My antenna is located approximately 25' from my lot's 220V service wire while the nearest distribution (street) wiring is approximately 100' away.

Combining activities on both bands, several hundreds of 'on-air' hours have been logged. To date, no instances of any interference to the power system has been caused or reported. Interference from power authority PLC signals has not been an issue and in fact, these signals are very very weak and difficult to detect. I suspect that they would only be heard in the quietest of locations and not from a typical suburban or city lot operation. In order to hear these signals at a level strong enough to cause interference, I believe amateurs would need to be so close to transmission lines that the noise generated by the lines themselves would likely prohibit any meaningful

operation.

From my own perspective, I can state that both power authorities and amateurs can co-exist on either band without one bothering the other.

Re section 167 ... Sharing of Spectrum. I agree that most operation will be experimental in nature and much of it done at less than maximum power limitations ... nothing at all similar to typical HF style operation. Coexistence is a reality in Canada and has been for thousands of on-air man hours (as it has also been with the U.S. Part 5 experimental programs) on both bands.

Re section 168 ... Fixed Locations. For the most part I see no difficulty in requiring amateurs to operate from fixed locations only. Minimum distances from PLC-carrying transmission lines can be enforced but personal experience when listening near such lines would largely discourage amateur operation in their near vicinity simply because they generate too much noise. Restricting amateur operation to 'fixed' locations should not prevent a 'fixed portable' operation (such as a Field Day site or a Grid Square activation) as long as the required distance from transmission lines is maintained.

Re section 171 ... Interference From PLCs. A portable operation by VA7LF (several years ago) at a very remote and quiet location, located across a large expanse of ocean from the U.S. border, did yield reception of a vast number of very weak PLC signals that were presumed to be coming from the northern Washington coast line. Even at this extremely quiet location, the PLC signals were so weak as to be of no consequence in our operation, also at maximum ERP.

My own station, due to its location in the Canadian Southern Gulf Islands, is actually situated below the natural U.S. boundary line and only on very quiet nights can very weak PLC signals be detected.

Re section 172 ... New Powerlines. I believe the easiest solution for addressing 'new powerline construction' that might impede established amateur operations would simply be a requirement that prohibited any 'new' PLC systems from being operated within the pre-established amateur bands ... however, as indicated before, power lines that moved close enough to cause PLC interference would likely force any amateur operations down due to the larger increase in powerline generated noise.

Re section 175 ... Reduced Power. From hundreds of operational hours at maximum ERP, I don't believe it is necessary for this power restriction to be reduced. Indeed, I believe that this level could be increased without causing any problems. It should be noted that most amateurs, due mainly to the inefficiencies of backyard antennas, will not likely be running at maximum ERP levels.

Re section 176 ... Powerline separation distance. Most amateurs will not be located sufficiently close to high voltage distribution lines to consider this problem. Those that are closer can readily measure or calculate via Google Maps the distance to their locations. Submission of such distance measurements could require a 'witness verification' letter to be submitted with a map printout verifying the correct distances. Additionally, GPS coordinates showing powerline and station locations could be submitted.

Re section 178 ... Antenna Height. I see no need for restrictions on antenna height. As long as ERP/EIRP limits are followed, there is no advantage for extraordinarily high antennas as power levels will only need to be reduced to compensate for increased antenna efficiency. Because of the strong groundwave characteristics of these bands, having a high antenna that might be able to 'see' more possible PLC-carrying wires, does not in itself mean that PLC interaction would be any greater than a lower antenna located in the same spot.

Re section 179 ... Power Limits. I agree that there is a problem in measuring and determining a station's actual ERP/EIRP unless amateurs have access to sophisticated measuring equipment and the knowledge to operate it correctly. For this reason, I strongly agree that power limits should be either stated in Watts of PEP output or, and preferably, since it is the easiest to determine, DC Watts of input power. From my own experience I would have no difficulty in recommending a 1Kw DC input level for the 2200m band and a 500w DC input level for the

630m band. This puts everyone on a level playing field, and for most suburban backyard antenna systems, a more realistic opportunity to conduct worthwhile experimental work.

Re section 180 ... Modes. I agree with the ARRL's rationale that there is no reason to limit the occupied bandwidth to less than 2.1 kHz, for either band. Such restrictions would be counterproductive to experimentation. As well, I agree that licence-classification should not be a restriction to access of the new bands. The more activity that can be generated, the better.

Re section 181 ... Other Allocated Uses. I see no need for exclusion zones. As long as amateurs operate on either of these bands with the understanding that harmful interference to primary users will not be tolerated then both parties should have the opportunity to solve the few, if any, problems that might arise from amateurs working on these frequencies.

The above summary of on-air personal experience is submitted in support of the establishment of the 2200m and 630m amateur bands in the U.S.A.