

Before the

Federal Communications Commission
Washington, D.C. 20554

26 July 1999

In the matter of:

Proposed changes to Part 97.305)
of the Commission's Rules to limit)
certain types of transmission) RM-9673
on prescribed portions of the)
Amateur VHF and UHF bands)

Comments Offered by

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MY BACKGROUND

I have been a licensed radio amateur since 1948 with call letters W3OTC. I have long been primarily interested in the amateur bands above 50 MHz and am currently operational on the 50,144 and 432/440 MHz bands, as well as on HF. I have belonged to the ARRL since 1944 and am a Life Member. I am also a Life Member of AMSAT and a member of the Central States VHF Society (CSVHFS). I constructed and maintained a 2-m repeater station during the early 1970s. I was one end of the first amateur meteor burst packet radio contact on 6 meters. Professionally, I built equipment for a ground to air digital computer data link in the early 1950s. In the later 1950s I designed and built the first two-way US meteor burst digital (teletype) communication system. In the early 1970s I designed and built the RF and analog-to-digital portion of a VLF spherics receiver which used DSP in a minicomputer for signal detection. In the late 1970s I designed and built from the chip level a coax local area network that eventually grew to about 1,200 user nodes in two linked sites about 1,600 miles apart. For the last 15 years I have been involved in multiprocessor computer and network performance characterization including the design of ASIC integrated circuits and design and construction of submicrosecond-accuracy time distribution apparatus.

THIS RULEMAKING PROCEEDINGS

The CSVHFS has filed a petition with the Commission proposing rule changes to protect weak signal work and experimentation on the bands above 50 MHz. CSVHFS observes that weak signal operation is in jeopardy because of increasing encroachment of wide band modes such as FM voice and packet into the small sub-bands where weak signal work customarily takes place. On June 28, 1999, the Commission designated the CSVHFS filing as RM-9673.

SUMMARY OF MY FILING

> The characteristics of narrow-band weak-signal uses of the subject amateur bands are fundamentally different from the FM, data, etc., wideband users of these bands. Weak-signal users strive

for distant communication. Wideband users seek local communication.

> Even if they wanted to avoid interfering with weak-signal operation, the equipment used by users of wideband modes prevents them from hearing weak narrow-band signals.

> While numerous voluntary band plans exist, they are often out-of-date, conflicting, and/or poorly distributed. Manufacturers have distributed plans showing weak signal as extending only from 50.0 to 50.1, 144.0 to 144.1 MHz, etc.

> Many wideband amateurs do not follow the band plans that provide for narrow-band weak-signal subbands either through lack of knowledge or the fact that they can find a published band plan that sanctions wideband use.

> The only form of education that reaches all incoming and upgrading amateurs is study to pass the exams. Only by having an FCC rule can we expect sample questions concerning the narrow-band VHF/UHF subbands in the study guides.

> For these reasons I strongly support the establishment by the FCC of mandatory narrow-band subbands on the 50, 144, 222, and 420 MHz amateur bands. There should be no change whatsoever in the 92.5% or greater portion of these bands that would remain available for wideband use.

> With the increased recognition and clout recently given to amateur radio's Official Observer corps, the enforcement cost to the FCC should approach zero.

TWO FUNDAMENTALLY DIFFERENT USES OF THE VHF/UHF AMATEUR BANDS

There are two fundamentally-different uses of the VHF and UHF amateur bands: distant (DX) and local communications. Because of the limited transmitter power authorized to radio amateurs, DX communication employs a limited signaling rate narrow bandwidth single sideband (SSB), keyed carrier (CW), or low-data-rate digital modes. Local communication on these bands is universally employs wideband techniques such as frequency modulation with a modulation index considerably higher than one, medium to high data rate digital modulation (data), television, and other wideband modes.

The FCC has previously recognized this difference by establishing VHF subbands for exclusive use by CW and similar very-narrow-bandwidth nonvoice modes. A similar situation exists on the ten-meter amateur band where the FCC has not only established a "CW" subband, but it has established a subband above 29 MHz where FM and similar wider-band modes may be used. The ten-meter band provides a successful precedent for subdividing an amateur band into narrow- and wide-band subbands.

THE NEED FOR FCC-MANDATED NARROW-BAND SUBBANDS AT VHF AND UHF

The FCC requires that radio amateurs not cause intentional interference to other amateurs. This implies that amateurs should

listen before transmitting. Unfortunately, the fundamental technical characteristics of wideband receiving equipment make it impossible for its users to hear the weak signals (CW/SSB/etc) that are being interfered-with. Thus the good amateur practice of "listen before transmitting" can't prevent wideband users from interfering with narrowband weak signal communications.

Various amateur organizations have created band plans for the VHF and UHF bands. Some of these have been prepared by frequency-coordinating bodies. Frequency coordinators are local or regional in jurisdiction. By definition, weak-signal operation often involves distances of a thousand miles or more, even on the 420-450 MHz band [communication by moon reflection]. The relatively-local parochial view seen by frequency coordinators is entirely out of place in the narrow-band weak-signal world. It must be noted that frequency coordinators are generally driven exclusively by the FM, data, and other wideband users. In at least one case (Southern California) they promoted a plan for the 222-225 MHz band with absolutely no provision for weak-signal narrow-band users.

One need only look at the ARRL Repeater Directory's 144-148 MHz bandplan to see that nationwide coordination can be a failure. There are three or more different repeater standards within the USA. In some cases there are even two different incompatible repeater offset plans within the same state. The clear lack of effective nationwide planning ability evidenced here would destroy weak-signal DX operation.

It is unclear whether up-to-date "approved" nationwide band plans exist for 144-148, 222-225, and 420-450 MHz. Remember that weak signal work covers long distances, so conflicting local band plans are not acceptable. The ARRL Web page says that the plans they list for these three bands are being studied by their VHF/UHF Advisory Committee (VUAC). The VUAC went out of business about a decade ago. Band plans which have languished in an interim state for about a decade don't give confidence that the ARRL can resolve this issue. If they can't, what nationwide amateur organization can? It is hard to expect compliance with multiple conflicting band plans. It is even more unreasonable to essentially require such adherence as I understand to be an ARRL position on this Petition. Since the ARRL has demonstrated that it has "dropped the ball" on plans for bands in question, the FCC needs to act favorably on the CSVHFS Petition.

FREQUENCIES TO BE AFFECTED

The Appendix accompanying the CSVHFS filing is clearly at variance with the Petition's main text to a major extent. I support CSVHFS if it is understood that the request does not in any way affect operation on the 92.5% of 6 meters that lies above 50.3 MHz and the 92.5% of 2 meters that lies above 144.3 MHz. This should leave adequate space for any wideband modes to continue unimpeded. Similarly the remaining 95% of the 222-225 MHz band above 222.15 MHz and the remaining 97.7% of the 420-450 MHz band outside 431.8 to 432.5 MHz should be adequate for wideband modes.

The requested changes would recognize that weak signal operation on

these VHF and lower UHF bands has a great deal in common with operation on the HF bands. I support the CSVHFS Petition in its proposal that rules similar to those on the bands below 29 MHz be applied to these small VHF/UHF segments.

THE FCC'S ENFORCEMENT COST OF THESE PROPOSED RULES

The FCC has given increased recognition to amateur radio's Official Observer corps. The efforts of these unpaid volunteers should reduce the FCC's cost of enforcing the requested rules to essentially zero. Only really "bad apples" will continue to willfully violate these new rules after being warned by an Official Observer. The gross violators that would require FCC action would likely have seriously transgressed in other ways as well, so that the existence of these new rules should not result in significant additional FCC workload.

CONCLUSION

The FCC's web site contains a number of excited comments on the RM from people who have taken the erroneous Appendix at face value. I can understand their concerns, but their comments are not germane since the Appendix surely does not represent the intention of the CSVHFS.

I urge the Commission to overlook the unfortunate careless errors in the CSVHFS filing and consider only the body of the text, and then act favorably in this matter. It will assure the continued viability of an important aspect of amateur radio at essentially no monetary cost to the FCC.

Respectfully submitted by

(Signed by) Robert J. Carpenter