

REPLY COMMENTS BY RM-10352 PETITIONERS BRIGGS AND TIPPETT

Extremely good response by the amateur community

We would first like to note the excellent response rate by amateurs to RM-10352. **521 total records** compares very favorably to the **96 total records** for ARRL's RM-10209 Petition for a New 5 MHz band filed July 21, 2001 and with the **45 total records** for ARRL's RM-9404 Petition for a Low Frequency allocation (135.7-137.8 and 160-190 kHz) filed October 22, 1998. RM-10352 responses also slightly exceeded the **500 responses** we received as input to ARRL's 160 Bandplan Committee over a much longer period (4 months versus 30 days for RM comments). We attribute this excellent response to very good publicity given us by publications such as QST, the ARRL Newsletter and the Low Band Monitor as well as informational posts on numerous online mailing lists including the Topband, 160 Meter, Contest, CW, PSK31 (a new digital mode) and AM reflectors.

82% of unique responses *in favor* of RM-10352

Excluding all petitioners' comments, duplicate comments and reply comments, we counted 82% *in favor* (401 in favor, 86 against) out of 487 unique comments made with respect to RM-10352 on the FCC ECFS site. We were also pleased to see international endorsement by amateurs from the UK, Finland, Hong Kong, Australia, New Zealand and Canada. Several comments were ambiguous and indicated some misunderstanding of the petition (e.g. some did not favor protection of CW but did favor protection of digital modes). Most negative comments came from two identifiable groups.

1. 25 comments appeared to come from an AM group that frequents the AM Radio Bulletin Board at: <http://www.amwindow.org/wwwboard/wwwboard.html>
2. 20 comments appeared to come from an SSB group primarily located in Florida

Comments in support came primarily from amateurs interested in a separation of wideband and narrowband modes in order to protect weak signal CW, digital and experimental work on the low-end of 160m. In our opinion, the 160 meter experience of the group in favor is clearly recognized by the frequency of their call signs being heard on the band. This can easily be verified by entering their call signs into the DX-Summit Packetcluster database located at the URL below, selecting Band-160m and any year from 1997-2002 for a summary of reported activity:

<http://oh2w.kolumbus.com/dxs/qin.html>

The 160 meter experience of one person (Courson) commenting negatively can best be summarized by his own words currently posted at:

<http://www.qrz.com/database?callsign=WA3VJB>

"I consider myself an "AM Activist" in the sense of promoting the mode with its warm and inviting sound, and the enjoyment of restoring, building and operating older vacuum tube equipment.

Very active operating schedule on 75, 40 and 10 meters AM. In early 2002 will be adding 15 and 20M activity, and some WARC band action."

His words stand in contrast to his ECFS reply comment posted on February 7, 2002 in which he stated:

"From the first-hand observations this year by others and myself with multi-faceted expertise on 160 meters, I am prepared to testify there has NOT been a significant level of weak-signal interference observed against CW activity."

Our point in noting this is that the true 160 meter operating experience and background of all amateurs making comments is not the same and cannot necessarily be taken at face value. We can assure the FCC that most of those amateurs in support of RM-10352 are frequent and experienced users of the 160 meter band, under many different geographical operating environments, taken over many years.

One noteworthy observation about the objections raised by the SSB and AM communities is that they seem to feel they are giving up spectrum below 1843 kHz were RM-10352 to be adopted. In fact, they do not presently have wideband mode access to this area of the band unless they choose to violate established ARRL (old and new) and IARU voluntary Bandplans. ***The only reason they seemingly can object to restricting wideband modes to 1843 kHz and above would be their implied intention to transmit using wideband modes below 1843 in violation of existing voluntary bandplans.***

Confusion about the intent of RM-10352; the issue at hand is *not* CW vs. SSB

It is clear from some negative comments that some individuals either did not read the petition or misunderstood it. The issue at hand is not CW versus SSB; it is the incompatibility between wideband and narrowband modes within a narrow slice of amateur spectrum.

As pointed out in our petition, as well as by other commenters (Rauch, Subich, etc.), wideband and narrowband modes are inherently incompatible for technical reasons. A wideband user may easily filter an interfering narrowband signal with a notch filter, but a narrowband user cannot filter an interfering wideband signal. Today's narrowband mode of choice happens to be CW because of its efficacy on 160 meters (see Appendix 2 of the petition), but we are quite certain that future digital modes will improve their utility to the point that they can deal more effectively with the noise and fading inherent to 160 meters. The QRSS CW mode (using spectrographic DSP software) was used one

year ago to make the first transatlantic contact between Canada and England on 136 kHz. While this mode is too slow (~0.8 words per hour) for practical use today, we can foresee the day when processor speeds will improve to the point that new digital modes may allow real time contacts with the ability to extract signals 20dB below the noise floor as QRSS has already demonstrated. Furthermore, inter-modal incompatibility is exacerbated by the fact that wideband modes are typically favored for local contacts and hence have much stronger signals than the narrowband modes (within the same shared spectrum) favored for weak-signal distance work. **The main thrust of RM-10352 is to provide a reasoned slice of the 160 meter band for all narrowband modes that is free from unavoidable interference caused by wideband modes.**

Reply Comments to Specific Objections to RM-10352

1) "It ain't broke....please don't try to fix it....!"

A number of negative comments suggested variations on the common theme "It ain't broke....please don't try to fix it....!" We wish very respectfully to disagree strongly with this notion. And, we are pleased to elucidate our point of view.

The situation on Topband today, in our opinion, is not broken beyond repair but it is indeed broken and will remain so as long as the only rules of the road are those of a voluntary bandplan, ARRL or otherwise. For about 17 years we have been operating under voluntary ARRL bandplan administration of 160 meters and during this period, here is what we have learned:

- a) Casual users of the band will drop below 1843 kHz into the narrowband segment in order to conduct local LSB ragchews. Some will move back into the wideband segment when asked politely to do so; some won't.
- b) Some users of the band when asked to move refuse to do so citing their right under FCC regulations to operate LSB activity below 1843 irrespective of what the ARRL bandplan may suggest. In this case, these users (like W5TZ and others warned by Mr. Hollingsworth on September 12) seem to relish asserting their rights as more important than the common good of the vast majority of other users of the low-end of Topband.
- c) Some amateurs will dip below 1843 to work a new DXCC entity on LSB. When asked about their actions, they usually reply "Well, I know I should not be there but I just had to call the new country I needed. Besides, I only stayed for a few minutes.....surely that is of no consequence."
- d) Other amateurs will dip below 1843 during a competitive operating event (such as the ARRL or CQWW DX Contest) in order to work a new multiplier in the contest that is needed. Their rationale for doing so is usually similar to "c" above.

e) Others will simply conduct lengthy LSB contest activities all over the low-end of 160m in the absence of any sponsor recommendations other than obeying the legal limitations of their license. Specific concerns here include the CQ160m SSB Contest, North American SSB QSO Party (twice annually) and ARRL SSB Sweepstakes among many other state specific QSO parties which, even though episodic in nature, simply exacerbate a bad situation - causing others *at other times* to think they may do the same with impunity.

When viewed individually, examples (a-e) above may not seem all that severe but they are indicative of the flawed nature of voluntary bandplans. The principal problem with a voluntary bandplan is that it is subject entirely *to the interpretation of the individual amateur* at the time which often is seriously out of step with the general welfare of the overall amateur community.

On no other amateur band below 144 MHz must amateurs constantly police intruders during the course of their daily operations in an attempt to educate, beg, or otherwise cajole their peers in an attempt to promote order. And, when we compare this fragmented, pockmarked approach to the stability and general welfare that exists on the low-end of the other HF amateur bands, it is abundantly clear which approach works and which does not. The rule of FCC law is well understood and respected by all amateurs; voluntary bandplans just do not produce the same constancy of results and we have nearly 55 years of experience with the former to draw from in making this assessment.

160m operations *are certainly impaired today* in the absence of the guiding hand of limited FCC modal segmentation; they will become even more impaired in about three years time as we head into the next solar minimum. Again, it is respectfully requested that the Commission use the time available to it now to remedy this situation prior to the influx of amateurs who will once again migrate down to 1.8 MHz when the upper HF bands close during darkness hours in years around the next solar minimum.

2) Reply to Wilder K3DI comment dated February 6, 2002:

K3DI wrote:

*SPECTRUM NEED: For many years, there has been an informal frequency division between the CW and SSB operations in the 160 meter band. During periods of casual communications (non-contests), traffic is usually sufficiently light that a suitable voluntary division of the band occurs with CW operation in the lower 35 kHz (more or less) and SSB from that frequency up to 2.000 MHz. However, during single band single mode 160 meter contests, there is an extraordinary demand for spectrum such that (based on my observations) it is typically necessary for CW station to use 1.800 to 1.880 MHz two weekends each year and SSB station to use 1.800 to 1.925 MHz on one weekend each year. See footnote.**

The last 4 week period in which Mr. Wilder listened is probably **near the null of activity** on 160 because we are near the sunspot cycle peak rendering poor conditions on the low bands due to high absorption. At the same time, 20 and even 15 meters are open worldwide on most nights so most amateurs are using the higher bands. As the sunspot cycle declines over the next few years, we will observe increasing activity on 160. At the solar minimum, when 160 conditions are best, we will see the band **filled with DX signals** (both SSB and CW) below 1860. At the same time, there will be more pressure on 75 meters and we believe we will begin to see more local SSB nets begin operation since 160 is a relatively open field compared to 75 meters. From those having experience with 75 Meter traffic (section) nets going back to the 1970's, 75 Meters "goes long" so early in the evening during the low part of the sunspot cycle that it is almost useless for coverage of an area the size of most states (other than the very small New England states). In the 70's, section nets did not have the option to move to 160 because most equipment lacked that capability. In the late 80's, there was more talk about using 160. In another four years, 160 traffic nets may become an increasing fact of life due to off-the-shelf solutions for 160 antennas and transceivers. An influx of high-powered section nets using high-angle antennas for local coverage would destroy narrowband/weak signal activity if left uncontrolled. We believe the inevitable future result will be more demand for spectrum and more conflict between wideband and narrowband modes.

K3DI wrote:

FRICITION BETWEEN OPERATORS: The FCC rules for the other HF amateur band restrict voice emissions to a portion of each band and allows CW to operate over the entire band. However, due to a reasonable feeling of fair play, CW operation in the SSB portion of other HF bands so divided is extremely rare and when it does occur, the CW operator is immediately chastised by SSB operators. Without a specific sub-band division in the 160 meter band, the ARS operators seem to make adjustments to the division of the band based on spectrum needs as stated in the prior paragraph. However, if a sub-band wall is built at 1.843 MHz then that will likely be a basis for SSB operators to reasonably complain if CW operation occurs above 1.843 MHz. If RM-10532 were implemented and the "fair play" custom migrates to 160 meters, then CW operators would face the dilemma of inadequate spectrum below 1.843 MHz during contests or being chastised by SSB operators for operating CW above 1.843 MHz. In the two cited CW contests, due to the heavy traffic, I expect that CW stations will be forced into the SSB band with the result of gravely impacting inter-modal relationships.

In Wilder's 4 weeks of listening, he may have missed the following episode during the NAQP SSB Contest on January 20. Several NAQP SSB stations were calling CQ Contest below 1840 at the same time and in the same area as the Hungarian DX CW Contest participants. Numerous European CW stations were audible just below 1840 and petitioner Tippett contacted 3 of them just before the following incident which was recorded on the DX-Summit Packetcluster database previously cited:

Posted by kHz Call Comment UTC time/date

N4XD	1836.0 N8VW	cw portion of band Tnx	K0356 20 Jan 2002
N8VW	1800.0 N4XD	contest time buddy	0406 20 Jan 2002

We feel this case exemplifies the arrogance some SSB contest operators show even when there is plenty of space above 1843. There are numerous SSB contests such as NAQP (twice per year), ARRL Sweepstakes and numerous State QSO Parties which frequently invade the narrowband area. Regarding the CQ SSB Contest, it typically consumes 100% of the narrowband segment below 1843 while the CQ 160 CW Contest consumes up to 1870 or only 17% (27/157) of the wideband segment above 1843. In fact contests are not our main long-term concern. Instead, it is the potential downward migration of local SSB nets on 75 meters as sunspots decline and as more operators migrate from the higher bands with full access to 160 using wideband modes. Without legal segmentation of modes, and should FCC enforcement revert to pre-Hollingsworth levels, we could easily have all of 160 meters filled with local SSB nets as is generally the case on 75 meters today.

K3DI wrote:

FREQUENCY ALLOCATIONS: The band 1.800-1.900 MHz is allocated on a primary basis to the ARS while the band 1.900-2.000 MHz is allocated to the Radiolocation service on a primary basis with the ARS as secondary per footnote US490. My concern is that during a SSB contest, if SSB stations are denied the portion below 1.843 MHz, then (based on a heavy traffic demand of approximately 125 kHz) the SSB stations would be forced up to 1.843 to 1.968 MHz which would increase the potential of interference to the primary service above 1.900 MHz. Based on the allocation status of the ARS it would prudent to minimize the contest operating above 1.900 MHz.

In all our years of 160 experience, we have never heard of a single instance of interference to Radiolocation services being a problem. We believe this comment refers to a "theoretical problem" when in fact there is **no history** of interference complaints in the FCC Enforcement Logs and Letters from July 19, 1999 to the present date. These logs may be examined at:

http://www.arrl.org/news/enforcement_logs/

We also received the following summary from Dave Sumner K1ZZ, ARRL EVP, who substantiates our own feelings that Radiolocation services above 1900 kHz have been rendered obsolete by similar services at VHF frequencies and higher as well as alternative systems using GPS:

*From: "Sumner, Dave, K1ZZ" <dsumner@arrl.org>
Subject: RE: Radiolocation Services 1.9-2.0 MHz
Date: Thu, 7 Feb 2002 14:39:09 -0500*

There were active plans in the 1980s for radiolocation systems that could guide ships back to underwater wellheads to an accuracy of one meter or less. There was a strong possibility that we would face new restrictions or

possibly even the loss of 1900-2000 kHz. I recall that at the time we did quite a bit of investigation of differential GPS because it seemed to offer equivalent accuracy for a lot less money, including a trip to the Coast Guard lab at Avery Point for a demonstration by KIWA. I haven't heard anything recently about commercial plans for 1900-2000 kHz.

In a March 1995 report on spectrum trends, NTIA said about radiolocation usage: "There are a large number of assignments in the 1705-1800 and 1900-2000 kHz bands, and operations can be expected at least for the next five years. Many of the systems currently operating in the 1705-1800 and 1900-2000 kHz bands will most likely continue to operate over the next five years. However, long-range spectrum requirements for the radiolocation service in the 1705-1800, 1900-2000, and 3230-3400 kHz band are expected to decrease over the next five years as activities are shifted to GPS. The requirements beyond five years are unclear, but nevertheless, are expected to decrease even more because of the increased use of GPS."

Dave K1ZZ

We have also informally approached FCC agency staff concerning complaints of radiolocation service interference and, so far as we can determine, none have been filed.

In summary, we feel **interference to radiolocation services above 1900 kHz has not been an issue**, and we believe that the FCC should review whether this allocation should be changed from secondary to primary for amateur use. Given that, we believe most SSB contest activity rarely extends above 1925 or 1950 kHz. Moving the starting point of that activity up by 40 kHz (from 1803 to 1843) would not cause any significant additional "crowding" for contest participants, but would merely shift that activity upwards into the less utilized area of the band above 1900.

K3DI wrote:

ANTENNA BANDWIDTH: Antenna size restrictions often limit the antenna bandwidth on the 160 meter band. In cases where a licensee operates both contest modes, it is convenient not to need to retune between CW or SSB contest weekends where retuning may require dropping wires that are hung between trees to change the antenna lengths or climbing a tower to change a matching section. An antenna tuner can't be used to accomplish the frequency change because in a modern contest station, the transmission frequency is usually under computer control resulting in the capability and need to instantly jump as much as 100 kHz without retuning when the target communication frequency and call sign is retrieved directly from a VHF/UHF packet communication system and put into the radio and log. A side advantage of the continuation of both contest modes using the

lower portion of the 160 meter band is that it will make more spectrum available to non-contesters using SSB in the upper portion of the band.

Retuning is commonly done on 75 and 80 meters, which actually requires a greater percentage frequency shift than is required on 160 meters. This is certainly not a unique problem to 160 and can be handled in the same manner that amateurs currently use to shift from 3.5 MHz to 3.8 MHz. The problem of jumping 100 kHz on 160 meters is no different if one moves from 1875 to 1975 kHz instead of from 1825 to 1925 kHz...in fact it is actually easier because the 100 kHz frequency shift represents a slightly lower percentage shift when moving from the higher area of the band.

3) Reply to Thompson K4JRB comment dated January 23, 2002:

I don't feel that having a separate CW band on 160 serves amateur radio at all. We have the ARRL Gentlemen's agreement and this works except for one or two weekends each year. Any segmentation in The USA will put USA SSB operators at a disadvantage at not being able to transmit in prime Dx ranges. I support the ARRL plan and have asked the IARU to address the issue of a world wide band between 1800 and 1900KHz. At this time the IARU is more concerned with 40 meters (at least through 2003) and tells me that European hams will not support the bandplan during contests. And contests is the time when the proponents want SSB off the portion used for CW.

I am Director of The CQ WW 160 Contests and to implement the suggested changes will cause problems with the SSB section. Split operation will cause the same problems we have on 75 and 40 with complaints from stations operating on frequencies where the Dx is listening split. I also note I get many complaints from SSB operators about CW operations above 1850 (as high as 1880 some years) in normally SSB ranges. I have noted SSB operation from 1800 to 1950 at the height of activity on Friday and Saturday nights with no clear spots between.

We feel this comment from the Contest Director of the most popular CW and SSB 160 worldwide contests illustrates the very problem described in 1) above. Everyone has an excuse for why **they should be exempt from voluntary bandplans**, which thus renders them totally ineffective. In the rules for the CQ Contest, it is stated:

“A log may be disqualified for violation of amateur radio regulations”

and yet even the Contest Director refuses to endorse the ARRL Bandplan and all three Regional IARU Bandplans (below) which specify no wideband modes below 1840 kHz. This illustrates why mode segmentation **must be regulated** to be consistently honored.

http://www.iaru-r2.org/hf_e.htm

We also take issue with Thompson's assertion that:

Any segmentation in The USA will put USA SSB operators at a disadvantage at not being able to transmit in prime Dx ranges.

In 2001, Mr. Tippet won the USA single-operator category in the CQ 160 CW Contest and Mr. Briggs won the USA single-operator category in the CQ 160 SSB Contest, as well as both having won or placed highly in numerous CQ 160 Contests over the past 15 years. We do know whereof we speak **We can absolutely guarantee that more DX will be worked by USA stations on SSB if they stay above 1843 kHz.** The reason is very simple. As it stands now, the entire band down to 1800 is filled with very strong local USA stations continuously calling CQ. Most of them do not have the specialized receiving antennas (Beverages, etc.) which would allow them to hear the overseas DX stations underneath them and, even for those with good receiving antennas, they cannot hear the DX stations because of all the very strong local stations continuously calling. If overseas stations choose to violate their IARU Bandplan by using SSB below 1840, that is their business, but restricting USA wideband modes would actually make it possible for **more DX stations to be heard and worked by USA stations.** The superiority of split operation on 75 meters when working weak DX stations has already proven itself by the most successful contest operators. Most avoid the area that is common to IARU Regions 1 & 2 (3750-3800 kHz) and the most successful USA stations operate above 3800 and listen for Region 1 DX stations below 3750. This is a matter of proven fact and not conjecture.

4) Reply to Courson WA3VJB comment dated February 5, 2001:

WA3VJB wrote:

I find it extraordinary that the Petitioners, who filed on September 17th, had the self-centered guile to try to gain an advantage for their little slice of a hobby pursuit at a time the rest of the country was in shock and alarm about the terrorist attacks of less than a week earlier.

Mr. Courson obviously did not read the petition. If he had, he would have noted the following timeline:

September 10, 2001 Petition date on both the cover letter and Executive Summary.
September 17, 2001 Petition date-stamped received by FCC.

We were not aware of it at the time of our filing, but we later learned that on September 12, 2001, FCC Special Counsel Hollingsworth sent enforcement letters to 3 amateurs for willfully violating the ARRL Bandplan by operating an SSB net on 1823 and interfering with other amateurs attempting to use CW in the same area. Again, we feel this action by the FCC underscores the need for mandated mode segmentation which would obviate the need for future FCC and taxpayer resources to be wasted in this manner.

5) Reply to Critchell WA6CDR comment dated February 8, 2002:

While Mr. Critchell is generally supportive of RM-10352, we would like to take issue with one comment:

I suggest that an allocation of 1.800 to 1.835 MHz may be sufficient. Many other countries have upper limits of 1.850 MHz. Many of these countries also have a lower limit between 1.810 and 1.825 MHz. Utilizing 1.835 MHz as the segment edge allows for stations in those countries to have a sufficiently large place to operate SSB that is co-incident with USA allocations. Allowing them sufficient space will reduce the need for them to operate SSB in the USA CW segment.

We disagree for the following reasons:

1. All 3 Regional IARU Bandplans recommend narrowband modes only below 1840.
2. Most of the overseas countries which most utilize 160 meters (IARU Region 1 Countries in Europe) **do allow operation above 1850**. In the listing of 160 frequency allocations by ARRL DXCC entity summarized at:

<http://www.machlink.com/~k0ckdennis/topband20010517.html>

it indicates that 42 of 69 European DXCC entities listed (61%) have access above 1850.

1840 has been the unofficial (voluntary) boundary for SSB for many years and generally has worked well when amateurs abide by it.

3. Reserving 40 kHz for narrowband modes out of 200 kHz total on 160 meters is actually a smaller percentage (20%) than any other HF amateur band with the exception of 10 meters (17%) which is 1.7 MHz wide and has a significant portion devoted to satellite downlinks and wideband FM. Both 80 and 40 meters are currently 50% narrowband by comparison. 40 kHz for narrowband should result in better utilization of the entire 200 kHz allocation by all amateurs since the area above 1900 is relatively uncrowded.

We also note the following comment from Mr. Critchell which we do agree with:

I believe the petitioners erred in requesting 1.843 MHz on the basis of the sidebands from a lower sideband emission occurring on 1.843 MHz. The current Commission rules do not assign a band edge based on the carrier frequency of an AM or SSB emission. The rules require that an emission be kept within the band allocation. This means that the sidebands must be kept above the assigned edge of the narrow bandwidth segment (or, for that matter, kept wholly within the band allocation, top or bottom).

Mr. Critchell is correct in his assessment. As members of the ARRL 160 Bandplan Committee, we discussed the problem of some amateurs not understanding the 1840 limit to be the **edge** of their lower sideband emission. We chose to use 1843 as the lowest **carrier frequency** for LSB emissions, ensuring that no portion of an LSB signal would fall below 1840. The applicable FCC definition in Part 97.307b states:

“Emissions resulting from modulation must be confined to the band or segment available to the control operator. Emissions outside the necessary bandwidth must not cause splatter or keyclick interference to operators on adjacent frequencies.”

Given this definition, we are in agreement that our request could be revised to “1840-2000 Phone, image” in Part 97.305c without materially changing our intent that RM-10352 be kept consistent with the ARRL Bandplan recommendation. This modification would also keep RM-10352 consistent with the IARU Region 2 Bandplan recommendation at:

http://www.iaru-r2.org/hf_e.htm

Summary:

As the joint petitioners who filed RM-10352, we wish to thank all those members of the amateur fraternity who took the time to file comments on our petition. We also wish to thank the members of the Commission who saw fit to bring this matter forward to the public comment stage in order for it to be given a full airing within the "court of public opinion." For all of this, we are most grateful and genuinely thankful to have been granted this opportunity.

We continue to believe in the merits of RM-10352 and we believe the comments filed make a compelling case for this matter to proceed to the NPRM stage. Thank you again for your consideration of our petition.

Respectfully submitted,

Jeffrey T. Briggs, K1ZM
William R. Tippett, W4ZV