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20th January, 2006

The Director General,
Telecommunications Policy Branch,
Industry Canada,
300 Slater Street,
Ottawa, Ontario,
K1A 0C8.

Re: DGTP-004-05 “Proposed Changes to the Spectrum in Certain Bands Below 1.7GHz”

Thank you for the opportunity to comment on the Gazette Notice. My firm is an operator of land mobile radio systems in British Columbia. As the designer and supplier of the only maritime mobile system in Canada, and one of the few used for voice communication, I would like to review this document covering the Department's intentions in the sub-bands contained in 216-222 MHz, and make the following comments:

PROVISIONAL ALLOCATION CHANGES IN THE FREQUENCY BAND 220-225 MHz:

The present Canada/U.S. sharing arrangement was created in 1999 to accommodate spectrum assignments conducive to very specific forms of narrow band technology. At that time, amplitude compandered single sideband (ACSB) and linear modulation (LM) equipment were available from number of manufacturers specifically for this spectrum in the U.S. To the best of my knowledge, there are no ACSB or linear modulation products in current production.

In the U.S., a rush of speculators followed the opening of the 220-222MHz band. (4) Many systems were deployed, and few systems presently support any significant loading, save for a small handful in the eastern U.S. The remaining majority sits running silent in order to hold onto spectrum. (4) To this end, I disagree that there is a “mass of radio equipment in use” in any area on the U.S. other than in select markets of the eastern seaboard.

The reasons behind the failure of ACSB and/or linear modulation methods are well known and are a topic of discussion themselves (4)(1).

A well-known manufacturer has introduced 11K0F3E - 220 MHz products in the U.S. To accommodate this and the other presently available products, many of which are already type accepted for use in Canada, the ability to aggregate the channels that the Department has proposed is vital. This would not be contrary to the policy, which the Department has implemented at 150/450 MHz, and would still allow for the transition to 5kHz channelization when a suitable technology is available. Aggregation has already been done in a handful of systems in the U.S. One example of such system is presently in use in the mid-west of the U.S. (1).

In section 3.2, the Department proposes to allow Amateur operations on a secondary basis, under exceptional circumstances. This would be difficult should aggregation not be implemented, as amateur equipment for this band has traditionally been 16K0F3E, and would be incapable of interoperation with ACSB and LM schemes.

The Department in its development of a policy must allow for equal access to spectrum in this and the other sub-band in discussion to all Canadians. Should public safety, government and utilities have a period of time before other users, including commercial, have access to spectrum, product development and introduction will be needlessly slowed. In most markets, public safety has already been given significant access to 150 and 800 MHz, and will access even more spectrum when 700 MHz is released.

PROVISIONAL SPECTRUM POLICY FOR THE FREQUENCY BAND 220-225 MHz:

I support the use of the first-come, first-served (FCFS) licensing policy and it is appropriate in this manner. This would allow for the greatest diversity in users and applications, which is necessary to develop new technologies and methods.

In section 4.3, technical parameters should also be refined off of the Department's experience with actual users as the spectrum is developed.

Spectrum assignments in the U.S. in this band were made in a manner that limited their utility. Contiguous blocks of adjacent channels made combining difficult to design, inefficient, and expensive. This should be avoided in the Department's policy to promote utilization of the band in rural and underserved areas where economy becomes a deciding factor.

PROPOSED SPECTRUM DESIGNATIONS IN THE FREQUENCY BAND 216-220 MHz

I support the use of the 216-220 MHz band for fixed and land mobile services. Specifically, the band would support trunking radio systems, which are difficult, if not impossible to implement in the very congested band 138-174 MHz, and existing UHF sub-bands. An important consideration for system planning is the availability of additional spectrum for system expansion –something that is impossible in VHF in most Canadian markets.

Use of this spectrum would allow unique solutions that are presently not available in existing available bands in Canada. Presently available equipment, again, some of which is already type approved, operate in 11K0F3E. This equipment is available and ready for deployment from a number of manufacturers.

Licensing for this sub-band should also be handled in the manner suggested for 220-222MHz, FCFS.

In section 5.1: I feel that interference to television channel 13 by fixed or land mobile operations is of little concern. Extensive research was conducted in the U.S. prior to authorizing operations to determine the effects of these operations on channel 13 and the results favored fixed or land mobile operations (2), (3). With the transition to modern DTV transmit facilities, one can expect reduction in out of band emissions from operations on channel 13.

Under-utilization of the band is due in part to the Department allowing very limited development. On the West Coast, maritime mobile operations were only permitted in the sub band 219-220 MHz by the Department, not 217-218 MHz as suggested in the document. This may account for the apparent under-utilization of the band.

A Canadian bandplan should be implemented for land mobile systems in a manner that is compatible with the U.S. -split into two sub bands with pairing of channels. These channels should conform as in the U.S. where 217-218 MHz is used for base station transmit, paired with 219-220 MHz for the mobile terminals transmit operation.

Use of 216-217 MHz and 218-219 MHz in an ad-hoc or structured manner would accommodate both unique and developing applications as well as continued maritime mobile operation. This would also protect base stations in both the U.S. and Canada.

Operation of license exempt devices such as auditory assistance products should be confined to 216-217MHz. Additional devices that can be found in this band already include wireless microphones and entertainment production intercoms.

I hope that my comments will assist in the development of this necessary and unique spectrum. I invite interested parties to read the documents I have listed in "references"

Sincerely,

P.J. Van Baggen,
Owner

References:

- (1) “*Shotgun Wedding*” Don Bishop, Mobile Radio Technology, October 2002
- (2) “*Analysis of the Potential for Interference to Television Reception of Channel 13 by Base Station Transmitters in the Automated Maritime Telecommunications System (AMTS)*” Professor A.E. Hull, California State Polytechnic University, Department of Electrical and Computer Engineering.
- (3) “*Analysis of Potential Interference from Automated Maritime Telecommunications Service to NTSC Receivers*” Allen Davidson, Davidson Consulting Engineering, Crystal Lake, IL.
- (4) “*Why 220 MHz?*” Todd Ellis, Mobile Radio Technology, March 2002

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