

In the Matter of

Department of Industry - Canada Gazette Notice DGRB-003-04
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COMMENTS

BY

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VE6DCM

regarding

RECOMMENDATIONS

from

RADIO AMATEURS OF CANADA (RAC)

to

INDUSTRY CANADA

concerning

MORSE CODE AND RELATED MATTERS

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Executive Summary

The decision made at the World Radiocommunication Conference in 2003 (WRC-2003) removed the mandatory requirement for proficiency in Morse code as a qualification for the amateur radio service. Once a jurisdiction (such as Industry Canada) eliminates the Morse code qualification, it naturally follows that all qualified amateur radio operators in that country would gain access to the HF bands.

The United Kingdom and Australia have both initiated regulatory reform to align their amateur radio services to a structure that does not require Morse code. In both of these instances all existing amateur radio operators were grandfathered to an appropriate qualification. It is noted that 18 other administrations have also removed the Morse qualification for access to HF privileges.

The Radio Amateurs of Canada (RAC) had an opportunity to develop and promote a vision for amateur radio that would embrace all amateur radio enthusiasts and legitimize the RAC's claim that they represent the interests of all amateur radio operators in Canada. However, we are now faced with a proposal from the RAC that fails to establish an appropriate strategy for the amateur radio service. It is a proposal that serves the interests of a small minority and unjustly excludes many thousands of qualified operators from full enjoyment of the hobby.

At present there are about 32,200 amateur radio operators with High Frequency (HF) privileges. The RAC Proposal would add about 3,000 operators to these ranks (i.e. just the holders of Basic + Advanced qualifications) increasing the total to about 35,200 operators. Yet the RAC Proposal neglects almost 24,000 Basic only qualification operators, and actually reduces opportunity for these operators.

This is surprising because it is the Basic examination that tests a candidate's suitability to operate in the HF bands (a privilege enabled when combined with the Morse code qualification). The Advanced examination exists only to test a candidate's suitability for competently working with high power, construction of transmitters and installation of repeaters or club stations. Frankly, the Advanced qualification has nothing to do with HF band privileges.

The RAC Proposal would have Industry Canada impose new regulatory roadblocks to prevent the 24,000 Basic qualification amateur radio operators, without Morse code qualification, from accessing the HF bands. This clearly is an effort to circumvent the spirit of the WRC-2003 decision.

It is difficult to understand the reasoning for the RAC's actions. There appears to be much left unsaid in their proposal. Certainly, justification for many of their recommendations is weak and ill considered. Therefore with considerable reluctance, the following comments are offered in response to the RAC Recommendations.

General Comments

I am the holder of a Basic qualification obtained in October 2001. The subject of Gazette Notice No. DGRB-003-04 affects my privileges as an amateur radio operator, and consequently I have an interest in the outcome of this proceeding. This qualifies me as an “interested party”.

Amateur radio is a hobby, and hobbies are supposed to be fun. To participate in the amateur radio service there is no more requirement than to satisfy Industry Canada of an acceptable competence. How the individual progresses in the service from that point depends on the aptitude and enthusiasm that he / she brings to the hobby.

There is no intended progression from the amateur radio service to a professional pursuit. It is not comparable to the aviation community where one can progress from an amateur as a private pilot to a professional as a commercial pilot through a unified system of examination and practical experience.

All amateur radio operators are proud of their qualifications and achievements. It is important that they be allowed to preserve these accomplishments. However, this should not be done at the expense of making the amateur radio service less inclusive to holders of junior qualifications. Every qualified operator should have the same opportunity to explore and enjoy every aspect of the hobby.

The Recommendations from Radio Amateurs of Canada to Industry Canada concerning Morse Code and Related Matters (the RAC Proposal) presents 12 recommendations affecting the privileges of current and future holders of an amateur radio operating Certificate. In evaluating these proposals I have approached each with the criteria that the recommendation must be inclusive and the recommendation must be fair. Exception is taken where a recommendation has a behaviour of being exclusive or of being unsupported by substantive argument.

A number of the RAC recommendations serve to expand the privileges of operators and are inclusive in nature. In particular:

- RAC Recommendation 1 – elimination of the Morse code proficiency requirement;
- RAC Recommendation 7 – continuation of the Morse code qualification;
- RAC Recommendation 10 – establishment of a new entry-level qualification.

A number of the RAC recommendations are just the opposite. They seek to exclude or limit the privileges of operators and lack appropriate fair treatment to qualified operators. In particular:

- RAC Recommendation 2 – sets an unreasonable pass mark for the Basic examination;
- RAC Recommendation 3 – exclusion of HF privileges from operators who have not obtained a Morse code qualification;

- RAC Recommendation 4 – exclusion of HF privileges unless qualified operators submit to being retested to a new standard;
- RAC Recommendation 6 – exclusion of a path to obtain the Advanced qualification by current Basic qualification operators;

RAC Recommendations 2, 4, 5, 6, 11 and 12 in one way or another deals with a policy issue of raising the pass mark for examinations. I am in support of an adjustment to the pass mark if it serves the community by establishing an appropriate evaluation of a candidate's ability to operate safely and competently. I am not in support of an adjustment to the pass mark if its fundamental purpose is to restrict access to the amateur radio service by Canadians.

RAC Recommendations 8 and 9 deal with the transfer of privilege to construct transmitter equipment from the Advance qualification to the Basic / Intermediate qualification. These recommendations may require substantive transfer of material from the Advanced to Basic / Intermediate syllabi.

The RAC Proposal includes reference to the development of a new syllabus. Since there is no direct implication to the privileges of new or existing operators in the RAC Proposal there is no need to comment here on the merits of that initiative.

There is fair argument for the establishment of three (3) Certificate Qualifications reflecting different levels of competence and privileges. However, the RAC Proposal provides for 4 license classes (entry-level, Basic, Intermediate, and Advanced); but only 3 available on a going forward basis (entry-level, Intermediate, and Advanced) once new syllabi and examinations are established. The Basic qualification would continue only as an orphaned qualification with frozen privileges.

A review of the amateur call sign database (obtained from the RAC website at <ftp://ftp.rac.ca/pub/cdncaldb.zip> on September 20, 2004 with 59,088 listings) indicates that there are about:

23,860	Basic qualification operators
3,009	Basic + Advanced qualification operators
5,560	Basic + Morse code qualification operators
26,659	Basic + Advanced + Morse code qualification operators.

It would appear that the RAC Proposal would grandfather 8,569 operators with Basic + Advanced and Basic + Morse to the new Advanced or the new Intermediate qualifications. However, those operators with Basic + Morse code currently have full HF privileges and consequently gain nothing. It is just the 3,009 Basic + Advanced qualification operators which benefit from the RAC Proposal by acquiring HF privileges not currently enjoyed.

It would also appear that the RAC Proposal would not provide any benefit to the 23,860 Basic only qualification operators. The RAC Proposal entrenches the Basic qualification as the only qualification without HF privileges and will isolate 40% of all qualified operators for decades to come.

It is entirely possible that many existing Basic qualification operators may seek a future entry-level qualification to acquire some HF privileges. This would be a truly embarrassing regulatory twist.

It is unfortunate that the Gazette Notice as well as Mr. Daniel Lamoureux's letter of July 20 2004 to Mr. Jan Skora, downplayed the consequences of the RAC Proposal. Both of these documents should have clearly brought to the reader's attention that there would be significant numbers of amateur radio operators left without HF privileges. This matter is central to the RAC Proposal and it should have been expressed in the clearest of terms.

The RAC Proposal reads with the intent to add complexity to the operator classes, to limit grandfathering of qualified operators, to limit access to bands, to require the retesting of operators, and to extend privileges without merit. It is regrettable that the RAC Proposal serves the interests of a select few in their enjoyment of amateur radio at the exclusion of so many others.

The RAC Proposal is complex to explain to the average amateur radio operator, it will be complex and costly to implement, and it does not satisfy fundamental issues of fairness, inclusion and expansion of the amateur radio service to all Canadians.

Recommendations

It is requested that Industry Canada approve RAC Recommendations 1, 5, 7 and 10.

Industry Canada should disapprove RAC Recommendations 2, 3, 4, 6, 8, 9, and 11.

Industry Canada should consider proceeding on a modified basis for RAC Recommendation 12.

To ensure the health of the Amateur Radio Service, Industry Canada should extend HF privileges to all current Certificate holders.

Industry Canada should establish a new “entry-level” or “Restricted” qualification, which will carry HF privileges at reduced power, as the initial qualification for all future amateur radio operators.

Industry Canada should establish a single pass mark for the Basic / Intermediate and Advanced examinations of 70%.

Should Industry Canada accept the recommendations in the RAC proposal, and does not extend HF privileges to the Basic qualification, then there should be a reasonable grace period for amateur radio operators to select an appropriate upgrade path. This could be:

- by rewriting the Basic examination,
- by acquiring the Morse code qualification, or
- by acquiring the Advanced qualification.

This grace period should provide for at least a year, or longer if implementation of the proposed Intermediate examination were delayed.

Industry Canada would have a duty to inform each Basic only operator of the grace period and of the options available for upgrading. Industry Canada should also provide explicit reasons as to why a previous pass on the Basic examination is now considered inadequate for this purpose.

RAC Recommendation 1

Radio Amateurs of Canada recommends to Industry Canada that the current Morse code Qualification be dropped as a requirement for operation in the bands below 30 MHz.

Comment on Recommendation 1

I support this recommendation as it is in keeping with the WRC-2003 decision to remove the mandatory requirement for proficiency in Morse code as a qualification for the amateur radio service.

It is not necessary for Industry Canada to consider any other factors regarding this recommendation. The decision to remove the mandatory requirement for proficiency in Morse code for the amateur radio service and to extend HF privileges to all Certificate holders can stand on its own.

Once Morse code proficiency as a precondition for HF privileges is removed, Industry Canada should revise:

- The Radiocommunication Regulation as appropriate to remove reference to Morse code;
- RIC-2 Schedule I (and Schedule II and III as appropriate) to delete in “Column IV Operator Qualification” the requirement for Morse code qualification; and
- RIC-3 Section 1.3 to extend access to all amateur bands to both Basic and Advanced qualification holders.

This will automatically extend HF privileges to all holders of the Basic qualification.

There would be no ensuing administrative cost to Industry Canada or disruption to the amateur radio operator community.

Any manipulation of the qualifications for HF privileges, beyond the removal of the mandatory requirement for proficiency in Morse code, must serve a legitimate purpose aligned with the goals of Industry Canada.

From RIC-3 in the Forward these goals are expressed as:

“The Department of Industry believes that amateur radio should be readily accessible to Canadians, so that those who are interested in the science and art of radiocommunication may avail themselves of every reasonable opportunity to learn, enjoy, contribute or participate in this service. The necessity for operators to have some technical and operating knowledge before being allowed access to amateur radio bands is a well established and internationally recognized principle.”

RAC Recommendations 2, 3, 4, and 6 are in conflict the Industry Canada goals. These recommendations, however well intended, will not promote the health of amateur radio in Canada.

RAC Recommendation 2

RAC recommends to Industry Canada that, at the same time as Recommendation 1 comes into force, the achievement of a grade of at least 80% on the Basic examination will be required in order to be permitted to operate in the bands below 30 MHz. Achievement of at least 80% will lead to a new qualification to be called the Intermediate Qualification. Holders of the present Basic plus Morse Qualification will be deemed to hold the Intermediate Qualification.

Comment on Recommendation 2

I **do not** support this recommendation.

All current holders of the Basic qualification have met the technical, regulatory and operating knowledge requirements set by Industry Canada to operate in the HF bands. It is not appropriate to retroactively deem this qualification to be unfit to operate in the HF bands.

A practice of retroactive legislation, or regulation, is undertaken by government only in extreme situations and for the preservation of the public good and stabilization of society. It is not a practice to be undertaken for issues of lesser concern, such as the amateur radio service.

Industry Canada runs the risk of setting a non-binding precedent that, at some time in the future and for a different issue, could place the department in an uncomfortable position.

This recommendation extends to current holders of the Basic + Morse qualifications an automatic grandfathering to the Intermediate qualification. This action achieves a simplification of the licensing formula and can be supported.

This recommendation sets a pass mark of 80% for the Basic examination for which there was no empirical evidence presented by the RAC. The effect will be to drastically reduce the number of candidates that would obtain an Intermediate qualification and consequently HF privileges. This will essentially stall the growth of the amateur radio service in Canada.

The RAC Proposal includes the following two quotes:

Operation in the HF bands requires technical competence on the part of radio amateurs, as well as a good knowledge of international regulations and operating practices. (RAC Proposal p. 8)

Industry Canada published a revised Basic syllabus in RIC-3 in 2001, replacing the previous syllabus appearing in RIC-24, last issued in 1997. Inspection of this revised syllabus will reveal that it is quite comprehensive of the topics relevant to HF operation, although some topics, such as modern digital modes, should be added. It is closely equivalent to the US General syllabus and the UK Intermediate syllabus which carry HF privileges. An examination based on this

syllabus, taken in conjunction with our recommended increase in pass mark discussed below, is therefore an adequate test for the proposed new Intermediate Qualification. (RAC Proposal p. 15)

From the first quote above, the RAC's expression of "technical competence" and "a good knowledge" and Industry Canada's expression of "some technical and operating knowledge" (RIC-3 Forward) reveals that the RAC is perceiving a standard for qualification which does not exist. The RAC is attempting to introduce a higher competency requirement than that deemed appropriate by Industry Canada.

The second quote above indicates that the RIC-3 syllabus used for the Basic qualification examination is equivalent to the syllabus used for HF privileges in the USA and the UK. Accordingly, the Basic qualification examination itself is deemed acceptable for the granting of HF privileges. This is the position taken by Industry Canada for its granting of HF privileges when combined with the Morse code qualification.

The examination for Morse code proficiency is in a simulated setting, i.e. not on the air, and does not include any component that could be deemed to test a candidate's competence to operate in the HF bands.

It is difficult to see a valid argument that existing holders of the Basic qualification lack adequate qualification to transmit in the HF bands.

The foundation of the RAC's Recommendation 2 is that there must be a higher pass mark in place to pass the Basic examination and obtain HF privileges. The RAC Proposal provides only the sketchiest of evidence in support of this position. They note:

Based upon the experience of two members of the Committee as amateur radio course instructors (and one as an Accredited Examiner), and taking into account statistics relating to grades obtained on the Basic examination, as well as a mathematical analysis of the examination process (see Appendix 2), it has been concluded that the current Basic examination with a pass mark of 60% allows some persons to obtain that qualification without having an adequate knowledge of regulations, operating practices and radio theory. For this reason RAC believes that a change in the Basic examination pass mark should be implemented at the same time as the proposed elimination of the code requirement. (RAC Proposal p. 9)

The RAC has not provided evidence in support of abuse of the examination process whereby a material number of individuals have wrongly obtained a Basic qualification. Granted the probability for a marginal student to pass the examination does exist, but this is an attribute of the existing 60% pass mark and the nature of multiple-choice tests.

The RAC has not provided evidence in support of setting the pass mark at the 80% level. In fact, the chart "Probability of Passing Multiple Choice Exam" (RAC Proposal, page 17) presents

statistics for only 60% and 70% pass marks, with and without guessing. For a candidate with half-knowledge, with guessing:

- using a 60% pass mark the candidate should pass the examination 73% of the time;
- using a 70% pass mark this same student should pass the same examination only 5% of the time.

To set the pass mark at 80% would only serve to drive down the probability of this half-knowledge student passing from 5% to zero. It would appear that there is no purpose served by raising the pass mark to 80%.

In addition, the RAC has not demonstrated that the existing Basic qualification with the existing pass mark of 60% fails to meet the objectives of Industry Canada.

The corollary of the RAC argument is that those operators who obtained test score of less than 80% should have been failed and not granted a Certificate. In essence the 60% pass mark should never have been allowed.

To accept the RAC's argument Industry Canada is obligated to suspend all operating privileges of all holders of the Basic qualification who obtained a low pass mark. Should these operators wish to continue with the amateur radio service they would be retested under a new standard.

This argument brings the existing examination process into disrepute and consequently may be considered by other jurisdictions to be materially flawed. It potentially could jeopardize reciprocal operating privileges with other countries.

I am concerned that the RAC is attempting to "raise the bar" and thereby arbitrary limit the number of operators which may operate in the HF bands. In their proposal they commented:

"The bandwidth factor would come into play, as well, if the Morse code requirement is dropped. It is likely that an increased number of radio amateurs will commence to make use of the HF bands for single sideband communication. This will add pressure to the sub-bands now recommended by RAC for such transmissions." (The Role of Morse Code, page 7)

Whether active operators saturate the HF bands is not germane to the matter of granting HF privileges upon the removal of the Morse code qualification requirements.

The RAC Recommendation 2 has the effect of reinstating a filter previously served by the mandatory requirement for Morse code proficiency that limited the number of Canadian operators in the HF bands. To accept this recommendation Industry Canada will by inference be endorsing a practice of restricting the HF bands to a elite subset of the amateur radio operator community.

I consider it highly unlikely that droves of existing Basic qualification operators will seize the day and purchase new rigs, erect towers, and run kilometers of long wires to capitalize on new HF privileges. It is much more likely that the adoption of HF privileges will be gradual as operators feel they can afford the investment.

In any regard, the number of potential operators in Canada is dwarfed by the existing presence of American operators in the HF bands.

If there is a legitimate concern regarding the transition of Basic qualification operators to the HF bands then it can be dealt with by Industry Canada by imposing a transmitter power limitation. It may be reasonable to limit these new HF operators to a maximum of 10 watts PEP operation for a period of time. For example, low power or QRP operation would be permitted through December 31, 2006, after which the operator may go to the full power allowed by his / her qualification.

Regardless of the historical testing process for the Basic qualification and whether some individuals have or have not mastered the body of knowledge, the Basic qualification should be recognized as the expected qualification for operators engaged in most aspects of amateur radio.

All existing holders of the Basic qualification should be treated equally. All holders of Basic, Basic + Morse and Basic + Advanced should be extended the same privilege of operating in the HF band. It is not reasonable to fragment the radio amateur service into different classes based on an unproven assumption regarding inadequacy of the examination process.

RAC Recommendation 3

RAC recommends to Industry Canada that current holders of the Basic Qualification who have not also obtained the Morse Qualification should continue to have their existing operating privileges. That is, they will be permitted only to operate on the bands above 30 MHz.

Comment on Recommendation 3

I **do not** support this recommendation.

All current holders of the Basic qualification have met the technical, regulatory and operating knowledge requirements set by Industry Canada to operate in the HF bands. It is not appropriate to retroactively deem this qualification to be unfit to operate in the HF bands.

The RAC's justification of this recommendation is that:

“Most existing holders of the Basic Qualification (without the Morse code Qualification) will not have real experience of the technical, regulatory and operating requirements referred to above. In most cases, they will not be well-prepared to operate in the HF bands.” (RAC Proposal p. 8)

There are two flaws in this argument. First, many Basic + Morse qualification operators will have obtained a test score on the Basic examination in the range of 60 to 79%. These operators have not demonstrated a superior understanding of the technical, regulatory and operating requirements on the Basic examination. And as such, have not proved that they are better prepared to operate in the HF bands.

Second, there is no regulatory requirement for operators to have “real experience” or, to be able to demonstrate having acquired experience, prior to commencing to operate in any particular band.

The Basic + Morse operator may begin using phone and data modes in the HF bands from day one upon receiving his / her Certificate. He / she may chose to never operate using Morse code and to never make a single contact using Morse code.

It does not logically follow that a current operator with Basic + Morse qualification has any better preparation than an operator with just Basic qualification for phone or data transmission in the HF bands. An implication that Morse code proficiency has by some unspecified attribute imbued the operator with the technical, regulatory and operating skills necessary of operate on the HF bands is unsupportable.

RAC Recommendation 4

RAC recommends to Industry Canada that any current holder of the Basic Qualification who does not also have the Morse Qualification should have the option of re-taking the Basic examination with a view to obtaining a grade of at least 80%. Those who are successful will receive the Intermediate Qualification.

Comment on Recommendation 4

I **do not** support this recommendation.

All current holders of the Basic qualification have met the technical, regulatory and operating knowledge requirements set by Industry Canada to operate in the HF bands. It is not appropriate to retroactively deem this qualification to be unfit to operate in the HF bands.

The RAC Proposal fails to recognize the accomplishments of those individuals who studied hard, and who fairly passed the Basic examination. By suggesting that all current Basic qualification holders “*have the option of re-taking the Basic examination*” this Recommendation has the effect of nullifying the test score originally obtained by candidates on the Basic examination. This rewriting of history would relegate all Basic only qualification holders to an inferior status within the amateur radio service.

For Industry Canada to accept the arguments of the RAC, it must be absolutely certain that there is sufficient merit to abrogate the rights of existing Basic qualification operators. It is considered that this would require substantively superior evidence that that put forward by the RAC. In addition, there is a duty on Industry Canada to explain its reasoning to the amateur radio community and to society at large.

Further, it marginalizes the expectation held important by all Canadians that the Government of Canada will extend fair treatment to its citizens. There is no precedent in Canadian history that would require the retesting of thousands of Canadians to preserve an existing privilege.

In their consideration of the revised syllabi for the different license classes the RAC commented:

“The Entry and Intermediate syllabi would be derived from the present Basic syllabus and the Advanced syllabus would be substantially unchanged.” (RAC Proposal p. 13, 14)

It is clear that the current Basic syllabus includes the two proposed qualifications, entry-level and Intermediate. The RAC Proposal does not enlighten us as to which subjects the Intermediate examination would cover that are not already covered by the current Basic examination. There is no evidence presented in the RAC Proposal that leads to the conclusion that the current Basic examination does not include subject matter, or specific test questions, which would be necessary for a candidate to demonstrate competence and acquire HF privileges.

The RAC survey results indicate that a majority of respondents “... believe that the Basic examination should be more rigorous.” (RAC Proposal p. 7) Perhaps on a going forward basis this may be appropriate.

The RAC has not provided any evidence as to there being majority support within the radio operator community to require existing Basic qualification holders to meet a new standard upon removal of the Morse code proficiency prior to gaining HF privileges. If the question had been posed in their Internet based survey, I suspect they would have received a very poor response.

It is not appropriate to require the retesting of candidates who have met the qualification requirements set by Industry Canada. To do so would place an unfair burden on many qualified operators to revisit the study materials (potentially to purchase new study materials), to sit the examination again, and to pay an examination fee again.

The selection of an 80% pass mark is purely arbitrary and is not supported by valid arguments made by the RAC. At best the RAC has supported an argument for a pass mark of 70% in their comments regarding RAC Recommendation 12.

If Industry Canada is persuaded to accept RAC Recommendation 4, the pass mark should be set no higher than the ultimate pass mark that Industry Canada intends to use on a going forward basis. Please refer to the section “Comment on Recommendation 12”.

At the very least, the RAC Proposal places an administrative duty on Industry Canada to review its records and determine which holders of Basic qualification did originally receive a test score of at least 70% or 80%. Those operators should by default meet the criteria of RAC Recommendation 4 and should be automatically grandfathered to an Intermediate qualification.

There is a material problem should Industry Canada not have complete records of the pass mark of every holder of a Basic qualification. If Industry Canada can not determine which Basic qualified operators earned a test score of at least 70% or 80%, then Industry Canada has a duty to automatically grandfather all Basic qualification operators to the new Intermediate qualification.

RAC Recommendation 5

RAC recommends to Industry Canada that the pass mark for the examination leading to the Basic Qualification be raised to 70% at the same time as the Morse code requirement is eliminated.

Comment on Recommendation 5

I support this recommendation.

A higher pass mark will make the process of becoming an amateur radio operator more difficult and may discourage individuals from the hobby who perhaps do not do well in a testing situation. However, I do not consider that the bar has been unreasonably raised.

The RAC Proposal envisions a pass mark of 70% or 80% for the current Basic examination. With a 70% pass mark the candidate does not acquire HF privileges; and with an 80% pass mark the candidate is granted HF privileges. The RAC has not supported an argument whereby a 10% lower score on the same examination justifies not granting HF privileges.

As a matter of policy, there should be only one pass mark for any examination.

If Industry Canada is persuaded to accept RAC Recommendation 5, the pass mark should be set no higher than the ultimate pass mark that Industry Canada intends to use on a going forward basis. Please refer to the section "Comment on Recommendation 12".

RAC Recommendation 6

RAC recommends to Industry Canada that all persons who currently hold both the Basic and Advanced Qualifications be given operating privileges on the HF bands. In future, persons who wish to obtain the Advanced Qualification should already hold the Intermediate Qualification, or the current Basic plus Morse Qualifications, and will need to obtain a grade of at least 70% on the Advanced examination.

Comment on Recommendation 6

I **do not** support recommendation 6 as it seeks to exclude all current Basic only qualification operators from attempting to acquire an Advanced qualification. All future candidates would be required to hold an Intermediate qualification.

This recommendation extends to current holders of the Basic + Advanced qualifications an automatic grandfathering for access to the HF bands. The aspect as to whether or not an operator has an Advanced qualification should be immaterial to whether or not HF privileges should be granted. The Advanced examination is not intended to demonstrate mastery of a body of knowledge necessary in order to operate on the HF bands.

It has not been a prior requirement that the examinations be passed in any particular order; however it has been a requirement that an individual must have the Basic qualification prior to getting on the air. Yet to require a junior qualification (i.e. the Basic / Intermediate qualification) prior to proceeding with a more senior qualification (i.e. the Advanced qualification) appears to be a natural progression. It is reasonable for Industry Canada to require candidates to progress from one qualification to another.

The RAC Proposal does not provide any evidence to support the assertion that a holder of a Basic qualification does not merit the opportunity to proceed to the Advanced qualification.

There are currently some 3,000 individuals who have acquired the Basic + Advanced only qualification. These individuals sought to acquire privileges to use high power, to construct and operate transmitters, to install “repeaters”, or to install “club stations”. While limited to the VHF and above bands these individuals have demonstrated that this license path is appropriate for their amateur radio pursuits. Given that RAC Recommendation 3 would limit a Basic qualification operator to activities in the VHF and above bands there is no apparent reason why RAC Recommendation 6 should close the door on these operators seeking an Advanced qualification.

Justification for RAC Recommendation 6 rests on the premise that individuals attempting the Advanced examination did originally pass the Basic examination with a superior score. There is no evidence presented that this is the case and there may be argument that the reverse could be true. The RAC Proposal uses two conflicting positions that bring into serious question this justification.

First, the RAC Proposal provides for operators with an Advanced qualification to be granted HF privileges, regardless of the individual test score obtained on the Basic examination. They commented:

In fact, such persons are likely to have passed the Basic examination with a high grade and should have reasonable technical competence. In view of Recommendation 2 it seems acceptable and fair to allow such persons to have access to the HF bands. (RAC Proposal p. 9)

There is no empirical evidence presented that a majority, or at least a significant number, of these operators obtained a test score of at least 80% on the Basic examination (the proposed standard) and consequently there is no foundation to this assertion.

Second, the discussion of examination scores supporting RAC Recommendation 11 highlighted a concern that “*technically trained*” individuals could pass the Basic examination without adequate mastery of regulations. It is reasonable to assume that many candidates for the Advanced examination would have more technical training than the general population. It is possible that there are current holders of an Advanced qualification which due to their technical ability were able to pass the Basic examination with a minimal understanding of the regulations. The RAC argued that:

Only 25 percent of the (Basic) examination is based on regulations and a mastery of the other areas only - operating and theory - will produce a pass. In fact, it is quite possible for a candidate who is technically trained to pass the examination without studying regulations at all. (RAC Proposal p. 15)

We must not lose sight of the fact that it is the Basic examination which determines fitness for operation in the HF bands, not the Advanced examination. The merits of extending HF privileges to holders of the Advanced qualification based solely on an unsupported assumption that these persons have demonstrated a superior mastery of the Basic examination syllabus is completely unfounded.

To make the RAC Proposal work it was obviously necessary to close the future option for Basic qualification holders to seek an Advanced qualification. To leave this door open would allow Basic qualification holders to acquire HF privileges by passing the Advanced examination. By closing this door there is no opportunity for current Basic qualification holders to acquire HF privileges except by meeting a new examination standard.

This has nothing to do with whether these persons legally merit seeking the Advanced qualification, and everything to do with the aspect that these persons should be prevented from acquiring HF privileges by passing the Advanced examination. RAC Recommendation 6 is both unduly complex in its operation and morally objectionable.

If Industry Canada is persuaded to accept RAC Recommendation 6, the pass mark should be set no higher than the ultimate pass mark that Industry Canada intends to use on a going forward basis. Please refer to the section "Comment on Recommendation 12".

RAC Recommendation 7

RAC recommends to Industry Canada that the present Morse code examination continue to be available to those Canadian radio amateurs who wish to have that qualification specified on their certificate.

Comment on Recommendation 7

I support this recommendation.

To protect reciprocal rights with other countries all operators should have the option of being tested for Morse code proficiency and to have this proficiency detailed on his / her license.

Any existing or new operator with a Basic or Intermediate qualification should be eligible to take the Morse code examination.

It follows that RAC Recommendation 2 is in conflict with RAC Recommendation 7, in future situations, where a Basic qualification operator acquires the Morse qualification. RAC Recommendation 2 does not provide for future Basic + Morse qualification operators being eligible for upgrading to the Intermediate qualification and HF privileges.

RAC Recommendation 8

RAC recommends to Industry Canada that holders of the Intermediate Qualification be permitted to construct and use commercial transmitting equipment kits.

Comment on Recommendation 8

I **do not** support this recommendation.

This recommendation will materially reduce the attractiveness of obtaining an Advanced qualification.

Individuals with an interest in constructing and using commercial transmitting equipment kits should be required to seek an Advanced qualification. It is appropriate to require an understanding of electronics theory prior to engaging in the construction of a transmitter.

At this time the Basic / Intermediate examination does not adequately test a candidate's knowledge of electrical theory to merit the granting of this privilege. The RAC Proposal does not foresee the transfer of appropriate sections from the Advanced examination to the Basic / Intermediate examination.

From RIC-3 Section 1.3 p.3, the Basic qualification permits the amateur to:

“build and operate all station equipment, except for "home-made" transmitters”

Basic qualification permits the amateur to construct all other station equipment connected to the radio station. It is considered that there is ample opportunity for the amateur operator to construct other commercial kits, or to design and construct station equipment without using a kit. However, the transmitter is a critical component of the radio station.

It is conceded that the construction of a commercial kit, will in most cases, result in a finely built and properly functioning transmitter. In instances where the kit is not assembled properly there may be concern as to whether the Basic / Intermediate qualified operator is competent to correct the mistake.

Should a Basic / Intermediate qualification operator wish to construct commercial transmitting equipment kits he / she may of course do so. The regulations only require that an individual with an Advanced qualification “install or operate” the transmitter. This may be inconvenient to the builder, but he / she may build the kit. Perhaps after building the kit the amateur would attempt the Advanced examination.

RAC Recommendation 9

RAC recommends to Industry Canada that holders of the Intermediate Qualification be permitted to construct and use their own transmitting equipment in the bands at 2.3 GHz and above.

Comment on Recommendation 9

I **do not** support this recommendation.

This recommendation will materially reduce the attractiveness of obtaining an Advanced qualification.

Individuals with an interest in the design of radio circuitry and constructing transmitting equipment, regardless of the band or frequency, should be required to seek an Advanced qualification.

The Basic / Intermediate qualification process is not the appropriate place to determine whether an individual can competently design and construct transmitting equipment.

There is substantial commercial interest in these frequencies and amateur operations are a secondary service in most of these bands. This places an increased duty of care upon the amateur to not cause interference to stations licensed in other services.

RAC Recommendation 10

RAC recommends that a new entry-level qualification be introduced, designed to ensure good operating practices and requiring only an introductory level of theory.

Comment on Recommendation 10

I support this recommendation.

This is a tremendous opportunity to expand the universality of access to amateur radio. The hobby must become as accessible as other pursuits undertaken by Canadians for it to grow and successfully position itself in our modern world.

The UK Foundation License provides an excellent model for our consideration. To obtain a Foundation License the candidate attends a 10-hour course and answers a 25 multiple choice question test where 18 must be answered correctly (72 % pass mark). The course focuses on safety, avoiding interference and good operating practice. The Foundation License permits the operator to use a transceiver capable of 10 watts delivered to the antenna and operation in the bands between 135.7 kHz and 440 MHz, except for the 10 m band and just 1 watt in the 135.7 kHz band.

As of November 2003, there were 4675 Foundation License holders in the UK. 1204 of these were under the age of 21. (Radio Society of Great Britain statistic)

It is suggested that an entry-level qualification be referred to as the “Restricted qualification”. The use of the word “restricted” will reinforce in the mind of the operator that his / her privileges are considered entry-level and are substantively limited. The term is also used on radiotelephone licenses for marine and aviation applications.

Careful consideration must be given to this qualification to ensure that it is used as a launching point for the operator to progress to the Basic / Intermediate qualification. Consequently, the qualification should be designed with ample opportunity to explore amateur radio, but with material limitations. The RAC Proposal was silent on many aspects of an entry-level / Restricted qualification, accordingly the following privileges are provided as a foundation for discussion.

An operator with a Restricted qualification would be allowed to:

- obtain and hold one (1) call sign from one (1) region;
- operate only within the geographic boundaries of his / her call sign prefix;
- transmit using a maximum of 10 watts PEP;
- operate in all bands from 160 m through 70 cm, and eligible to use AM, FM, SSB, and CW modes.

The operator with a Restricted qualification would not be allowed to:

- operate outside his / her call sign prefix region, or outside of Canada;
- transmit with more than 10 watts power, except when a qualified operator is in attendance;
- transmit using digital modes.

The restrictions are intended to provide incentive for the operator to proceed to the Basic / Intermediate qualification. In particular:

- By operating only in the call sign prefix region the operator is disadvantaged by not having the freedom of movement enjoyed with a higher class Certificate.
- By operating only in the call sign prefix region and prevented from operating outside of Canada, Industry Canada may structure the Restricted qualification syllabus with reduced consideration of regulations regarding operation outside of Canada, and consequently not be concerned as to whether these operators have adequate proficiency to operate in a foreign jurisdiction. The issue of negotiating reciprocal privileges is also avoided.
- A limitation of 10 watts PEP avoids the need for RF safety issues in the syllabus, and would limit the occurrence of interference and exposure to EMR. The novice operator may develop skills without fear of causing significant disruption to other operators.
- The RAC Proposal contemplates including digital communication modes in the Intermediate syllabus.

By allowing an operator with a Restricted qualification to immediately operate on the HF bands, with low power, it is presumed that the operator will develop operating and technical skills to offset the limitation imposed by the power restriction. This would put many new operators on the same footing as those from an earlier time, such as the 1950s or 1960s, when many transmitters were of low power. It would also avoid a situation where an operator with underdeveloped skills reaches too far a field with his / her radio signals.

I would suggest that the process for obtaining a Restricted qualification be equivalent to that of obtaining a Pleasure Craft Operator's Card. There should be a simplified study manual and a comprehensive test with a 75% pass mark requirement with 36 questions. The study materials and test would be available from local registry offices and conducted in the same manner as that for the Pleasure Craft Operator's Card.

Some operators may be content to enjoy an entry level / Restricted qualification for their entire experience with amateur radio. There is certainly room for them within the community.

RAC Recommendation 11

RAC recommends that all examinations on the new syllabus be divided into several elements, as appropriate, and a pass mark be required on every element.

Comment on Recommendation 11

I **do not** support this recommendation.

The initiative for a multipart examination is based on a perception that some candidates may be able to achieve a pass mark without adequate understanding on all aspects of the subject matter. There may be a mathematical probability of this circumstance, however the RAC Proposal does not provide empirical evidence that it has occurred in a material number of cases.

By significantly raising the pass mark, to 70% or 75%, there is by default minimal need to compartmentalize the examination into elements. The higher pass mark becomes more inclusive of those sections of the examination where a candidate may resort to guessing. It will effectively discourage a strategy of guessing at a whole section of an examination.

In any regard, the entry-level / Restricted qualification should be a single element examination. By setting a 75% pass mark and having just 36 questions there is no practical advantage to structuring this test as a multi element examination.

If the entry-level / Restricted examination is patterned with 12 questions each for the Technical, Operations and Regulation subjects it is not possible to pass with fewer than 3 correct answers in any 1 subject. ($12 + 12 + 3 = 27$) Various candidates will have an aptitude for different aspects of the syllabus. Some will master technical sections more easily; other may master the regulations more easily. Regardless, amateur radio is a pursuit of exploration and self-study where the examination is merely the first step of many.

The RAC proposed that the full examination would have to be retaken if part of the examination was failed.

“It is not feasible to administer the record-keeping for part-credits on a two- or three-part examination; it would be necessary, from a practical standpoint, to require the candidate to pass all parts at one sitting.” (RAC Proposal p. 17)

The practice of rewriting an entire examination introduces a degree of unfairness by requiring the candidate to reattempt successfully passed elements. There will be unfortunate cases where a candidate passed an element on the first attempt but failed the same element on the second attempt. Whether the candidate makes a third attempt would perhaps be somewhat dubious as he / she becomes bounced about in examination purgatory.

RAC Recommendation 12

RAC recommends to Industry Canada that the pass mark on all elements of all examinations be set at 75 percent at the same time as the new syllabi are introduced.

Comment on Recommendation 12

I support the intention of the recommendation to raise the pass mark, but not necessarily to the 75% level. A pass mark of 70% should be adequate for the purposes of establishing a fair testing programme.

Should Industry Canada consider it necessary to set a new pass mark for examinations, the initiative should be undertaken once and just once. The new pass mark would apply for all purposes contemplated in the RAC Proposal. This will avoid the inevitable confusion resulting from having passed an examination with a particular score (60, 70, 75, or 80%) at a particular point in time.

The purpose of changing the pass mark should only be for the purpose of satisfying Industry Canada that the candidate has an adequate level of knowledge to safely and competently operate a radio station pursuant to the conditions of his / her Certificate. The amateur radio service is after all a hobby, and not a programme of study leading to professional activities.

Within the University community a grade of 72 to 75% generally equates to a grade point average of 3.0 or "B". This is generally the minimum grade obtained during undergraduate study acceptable for admission to graduate studies. A grade point average of 2.0 or "C" generally equates to a percentage equivalency of 60 to 63% and is the minimum considered acceptable for advancement to a higher-level course. The adoption of a pass mark above 70% is an indication of having met a high standard.

The RAC has presented arguments that there is reasonable potential for a candidate to pass an examination and yet have as little as 50% understanding of the material. If this is acceptable to Industry Canada then there should be no change to the existing 60% pass mark.

With respect to the RAC's chart "Probability of Passing Multiple Choice Exam" on page 17 of their proposal, for a pass mark set at "60% with guessing",

A closer examination of the probabilities ... shows that this half-knowledge candidate will pass an examination 73 percent of the time. (RAC Proposal p.16)

The same chart indicates that a pass mark set at "70% with guessing" this half-knowledge student will pass the examination only 5% of the time.

In addition, from the same chart with a pass mark set at "70% with guessing" it would appear that a candidate with a mastery of 70% of the material would pass the examination 95% of the time. In my mind this is acceptable.