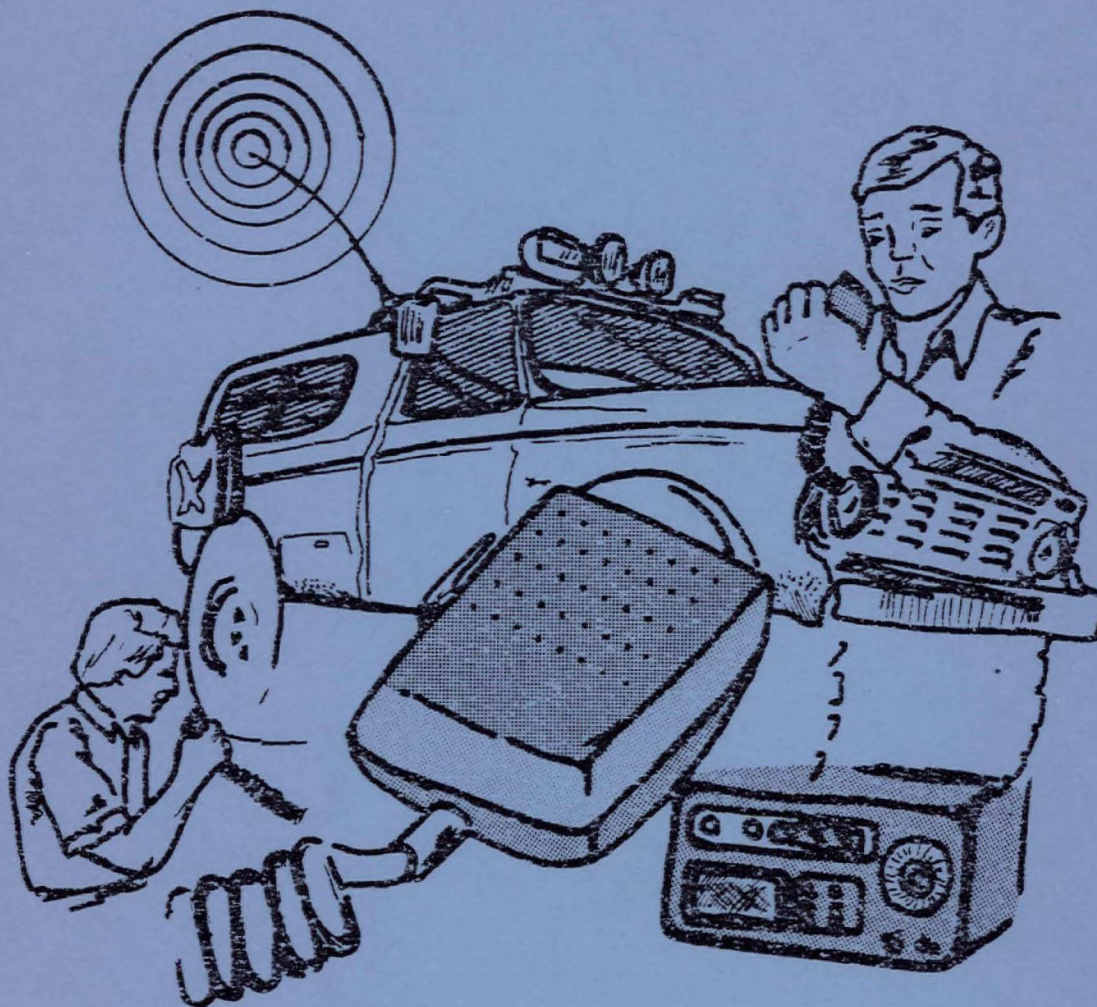


DEPARTMENT OF COMMUNICATIONS

THE GENERAL RADIO SERVICE

- PROSPECTS & BAND MANAGEMENT STRATEGY

Volume I: Executive Summary



A REPORT FROM

Woods, Gordon & Co.

MANAGEMENT CONSULTANTS

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May 12, 1978

Mr. R. Lucyk
Policy Analyst
Social Policy & Programmes Branch
Department of Communications
300 Slater St.
Ottawa, Ontario

Dear Mr. Lucyk:

In our proposal of October 26th we set out the basis for a study of the General Radio Service. This study was to be essentially a general management study of the GRS band, taking into account probable future growth in usage, the social significance of the service, the social impact and acceptability of the strategy to be adopted and the limited resources of the Department.

We are now pleased to submit our Report in three volumes. Attached is Volume I, the Executive Summary. Volume II is the Detailed Report and is the main body of the report, containing all our major findings and recommendations. Volume III is the "User Survey" and contains the survey tabulations and a discussion of the results.

This Executive Summary highlights the major findings and recommendations. Some recommendations will require changes in the Radio Act, others can be implemented under the existing legislation.

We very much appreciated and enjoyed the opportunity to work on what proved to be a very interesting study, and would be pleased to discuss our findings and recommendations with you at your convenience.

Yours very truly,

Woods, Gordon & Co.

M.J. McClew
J.C. Cummings
D.A. Durrant
J.C. Leveille
H. Thompson
D.B. Little

Woods, Gordon & Co.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

At the request of the Department of Communications, we have conducted a general management study of the General Radio Service (GRS) taking into account probable future growth in usage, the social significance of the service, the likely social impact and acceptability of alternative strategies, and the available Departmental resources.

Four tasks provided significant input to the analysis:

- o A "User Survey" in Montreal and Toronto, mailed to 3200 GRS licensees, characterizing users and identifying the purposes for which the band is used. The survey also examined user attitudes to DOC enforcement.
- o A market research study identifying the probable future trend in the number of licensed users, and product development.
- o A review of informed opinion on the social interpretation of the GRS phenomenon, and of user opinion obtained from interviews with GRS clubs and by examination of the results of the DOC symposia held across Canada in 1977.
- o a review of the legislative and administrative environment through a series of interviews with DOC staff at the District, Regional and Headquarters level.

Our findings are presented in full in the Detailed Report (Volume II). The "User Survey" is tabulated and discussed in Volume III. The important points are summarized in the Detailed Report.

While the scope of our work did not permit or require the development of a detailed control system, we feel we have very clearly identified the social background and likely prospects for GRS and recommended the broad outline for a band management strategy which will reflect these factors, be practical from the point of view of implementation, and receive broad support and acceptance from the users themselves.

In this Executive Summary the most important findings, and our major conclusions and recommendations are summarized below:

1. The Number of New Licenses Being Issued is Stabilizing

The number of new licenses being issued monthly has declined from its peak of over 53,000 in April 1977, and now appears to be stabilizing. However, it is still too early to predict the exact level at which licenses will stabilize. We have put forward our "most likely" forecast scenario which assumes that about 200,000 new licenses will be issued each year for the next three years or so, with a gradual increase thereafter.

2. The Licensed Population Will Double in Five Years

Based upon this rate of growth in the licensed population, and allowing for renewal at a rate of 75% of license expiries, we expect a license population of about 1.5 million by the end of 1982/83. This represents an approximate doubling of the present population over a period of five years. About a third of respondents in our "User Survey" indicated their intention to purchase one or more new sets in the next few years.

3. GRS Not a Fad

GRS does not appear to be a fad which will disappear in a year or two; rather it seems to be part of a general trend towards a more communications-oriented society. This suggests that Departmental concerns about GRS are not likely to be eliminated, or even significantly alleviated as a result of a reduction in GRS use.

4. Interference is a Major Problem

One of the major problems confronting DOC is the high level of GRS-caused interference complaints. It is estimated that these represent at least 30% of all interference complaints received by the Department. The resulting interference investigations are time consuming and absorb much of the Departmental manpower, particularly in the District Offices. Broadcast radio and TV and non-radio equipment (e.g. record and tape playing apparatus) are the services most commonly affected by GRS. GRS-caused interference affects FM radio and non-radio equipment more than all other interference sources combined.

5. Most GRS-Caused Interference Results from Audio Swamping

About 70% of all GRS complaints is attributable to audio swamping caused by inadequate immunity in the affected equipment. A further 20% is caused by inadequate suppression of harmonic and spurious emissions in the GRS transmitter. If these two problems could be eliminated, complaints might fall to one-tenth of their present level.

6. GRS Causes Other Problems

In addition to interference complaints there is a small but significant volume of "in-band" complaints. These are complaints made by one GRS user about another. These include complaints about unlicensed operation, the use of excess power or linear amplifiers, malicious interference and the use of profane or obscene language. Such complaints are not routinely recorded on a centralized basis, and are generally accorded a lower priority than interference complaints by DOC staff.

7. GRS Users Represent a Broad
Cross-Section of Canadian Society

The User Survey in Toronto and Montreal dispelled a number of traditional myths. The survey showed that in these communities licensees had higher incomes, and were more likely to be married than the average Canadian. There was very little difference between the education levels of GRS licensees and those of the labour force in general, although a slightly smaller proportion of GRS users had completed a university degree. The largest single class of GRS user was employed in a managerial, administrative or proprietary capacity (20-25% compared with 6.9% in the labour force generally).

Supporting the mythology, on the other hand were findings that the GRS licensee is typically male, and our respondents were generally younger than the provincial populations.

8. GRS Radio is Widely Used to Monitor Travelling Conditions

On average, respondents to our "User Survey" owned 1.7 GRS radios, and about 65% had at least one in their cars. The most common reported use of GRS was to get information about travelling conditions. More than half the respondents also used their radio frequently for listening only; over 30% for emergency monitoring.

Very few people use the band for business purposes (an authorized use), but 20% to 40% use it for hobby or recreational purposes (a prohibited use).

It would appear from the survey responses that GRS is used more often for "instrumental" purposes (i.e. to achieve a definite purpose) than it is for "expressive" purposes (e.g. hobby or recreational use).

9. There is No Clear Social Explanation of the GRS Phenomenon

A number of sociological theories have been put forward to explain the popularity of GRS. While they may apply to certain segments of the community, we do not feel that any of the theories satisfactorily covers the wide spectrum of different usage patterns. In our opinion a significant amount of use can be simply explained as "instrumental", or designed to achieve a specific purpose, such as getting travel information.

10. Threats and Harassment are Quite Common in GRS

A survey of each of the forty-two District Offices revealed 145 known incidents of violence in 1977, of which the majority occurred in the Ontario and Atlantic Regions. Twenty-two cases involved personal injuries or serious property damage. These more serious incidents occurred in four of the five regions. Six incidents involved the use or threatened use of guns. Seven offices reported incidents where DOC staff had been threatened or assaulted. We feel that GRSers recognized the potential dangers in the situation, and that this is a significant factor in their clear call for increased enforcement.

11. The Value of GRS Equipment In-place in
Canada is Estimated at \$250 Million

There is a clear social value attributable to GRS, although we have not attempted to quantify that value. GRS users are estimated to have made an investment of about \$250 million in GRS radio equipment. Taking account of license fees, and equipment amortization (over 10 years) this represents a perceived value to the users of nearly \$30 million annually. The service is used for numerous valuable

purposes; a fact increasingly recognized in the U.S. where authorities such as the police and coastguard are becoming more involved in the monitoring of CB, and in cooperative community programmes.

12. It is Not Possible to Satisfy the Needs of
All Those Involved in GRS

Analysis of the demands of the GRS users and the practicalities involved in enforcement clearly demonstrate that no solution will satisfy the needs of all parties involved. Even within the GRS community there are wide divergencies of opinion, reflecting the different needs and problems of urban and rural users, business and non-business users, and users such as the REACT groups and those who wish to use the band for more recreational purposes.

13. There is Competition for DOC Resources

Within the Department there is competition for resources between the various radio services. Because of the number of GRS licensees, and the large proportion of interference complaints generated by GRS transmitters, the General Radio Service commands quite a large share of Departmental resources.

In addition there is competition between the various functions of the DOC. Interference investigations, station inspections and enforcement action all compete for the same resources. Over the last three years the number of interference investigations has risen faster than the number of station inspections.

14. Over the Last Five Years Very Few Sanctions
Have Been Imposed by DOC

The principal sanctions presently available to DOC are license revocation and prosecution. Over the last five years a total of perhaps five prosecutions has taken place in each of the five regions, and the majority of these have been initiated by public bodies other than DOC; notably the police. License revocation has been used far less often even than this. The Department clearly does not see itself as an "enforcer" and prefers to adopt an "advisory" role. While this approach has worked very satisfactorily for the other services, it appears to be less effective in the case of GRS. DOC manpower has not expanded as fast as the license population and new methods will have to be adopted if proper control is to be achieved. The alternatives are to greatly expand manpower, or else to give up any attempt to control the band.

15. Reasons for Low Level of Enforcement Activity

The low level of enforcement activity is partially attributable to the fact that specific Ministerial approval is required for license revocation or prosecution for unlicensed operation, and the process is cumbersome and time consuming. Not only is a considerable amount of time necessary for the preparation of the paperwork, but the elapsed time from discovery of the offence to the receipt of Ministerial approval has, on occasions, amounted to six months or more. Moreover, the practice of giving one or more warnings prior the imposition of sanctions means that a substantiated case may have to be developed twice, or even more often. When the chosen course is prosecution further time is, of course, involved in court proceedings.

Another reason for the infrequent use of prosecution is a general lack of knowledge or confidence in initiating court action. This has been overcome in some, but not all offices by the use of training courses.

A number of practical problems also exist, caused by loopholes or phrasing of the Act or Regulations. Some of these are detailed in the Report.

An important overriding factor influencing the initiation of sanctions is the perception at both Regional and District levels that Headquarters does not support, and is in fact trying to discourage, a vigorous enforcement policy.

The inspector's job requires technical competence, judgement, integrity and considerable interpersonal skills. On a number of occasions, DOC inspectors have been assaulted or threatened at gunpoint. Their work is made more difficult if they feel that sanctions are not available to them, or feel that they are not supported by Headquarters' staff in Ottawa.

16. Several Regulations Seem No Longer Relevant

Several regulations are either almost beyond definition or inappropriate in the context of the usage which has been allowed to develop over the last several years. The retention of these, and the lack of enforcement of the more relevant ones, undermines respect, not only for the Radio Act, but for the law in general.

17. The Service Cannot be Discontinued or Deregulated

We examined a number of alternative strategies open to DOC. Because of the large in-place investment (over \$250 million) we do not feel that banning of the General Radio Service is a practical proposition. Moreover, since our "User Survey" and field interviews revealed an overwhelming desire for more enforcement, we think that deregulation would be an extremely unpopular move. Such a move would also increase the risk of violence and vigilante action as individuals tried to fill the role vacated by the Department.

18. The Long-Term Solution is a New GRS
Band at High Frequencies

We understand that GRS equipment operating at say 200 MHz or 900 MHz would not be susceptible to skip, and would cause very little interference. In addition the establishment of a new band would permit the introduction of automatic transmitter identification systems (ATIS) from the outset, and we believe that this would be a highly powerful control mechanism. Other technical control mechanisms could be incorporated in the new band.

At the time the new band is opened the sale of equipment operating in the old band (27 MHz) should, in our opinion, be prohibited. However, we do not think it would be practical to prohibit the use of existing 27 MHz equipment as such a rule would be widely ignored.

19. We Recommend More Cost Effective Band Management
Through the Use of the Principle of Control at
Source, and the Use of Deterrents

In our opinion, the effective control of the GRS band requires much greater use of control at source. By this we mean the control of a problem, once, at its origin, rather than waiting until it is dispersed and has to be tackled at a multitude of points in the community.

Secondly, we recommend that much greater use is made of deterrents. The present extensive use of warnings, and the very rare application of sanctions provide little or no deterrent to those inclined to disregard the law or Regulations. When dealing with a large population, the use of deterrents is a powerful and necessary mechanism if control of every individual on a personal basis is to be avoided.

20. Recommendations

Movement to a new frequency band is a long-term solution. Even after the new band has been established the continued use of 27 MHz will perpetuate many of the existing problems for perhaps a further ten years or more until serious attrition takes place in the installed equipment base.

In the Detailed Report (Volume II), we recommend a number of measures which we feel should be adopted to improve management of the band. Some of these would apply equally in a new band while others are designed to alleviate problems which will exist at 27 MHz, at least, until the equipment in that band has been retired.

We recognize that some of the recommended actions can only be put into effect after changes have been made in the Radio Act.

It should be noted that the scope of our work did not permit us to make recommendations addressing all the problems, closing all the loopholes, or covering all eventualities. Rather we have addressed what we consider to be the major problems, and outlined the broad principles which we feel should be adopted in managing the band; namely control at source, and the use of deterrents. We now list, in brief, some of the significant recommendations contained in the Report which illustrate these principles, and which we felt were worthy of specific mention.

a) The Establishment of New Technical Standards

Since, under the proposals we have recommended, operation of the GRS band at 27MHz is likely to continue for 15 years or more we recommend the establishment of new technical standards for both GRS transmitters and home entertainment equipment to reduce interference and audio rectification. We consider this to be a matter of urgency. It would appear to be within the Department's authority to establish standards for transmitters, and possibly broadcast receivers, but the cooperation of C.S.A. would be required for other home entertainment equipment.

b) Changes in Regulations

We recommend the following prohibitions be removed from the Regulations:

- transmissions of a frivolous nature;
- communication used in itself as a diversionary or recreational activity;
- calls directed to stations generally.

We feel that these regulations are unnecessary, irrelevant, beyond definition or unenforceable.

We recommend the retention of the regulation prohibiting 'profane or obscene words or language'.

c) Extension of Ministerial Authority

We recommend the extension of Ministerial authority to cover the manufacture, importation, modification, offering for sale and sale of equipment used in connection with the transmission or reception of radio communication, in order to facilitate control at source.

In our opinion this authority should be used to prevent the importation, manufacture or sale of equipment capable of being operated illegally, for example at excess power, or which is not Type Approved.

We recommend that the sale of linear amplifiers capable of being operated at 27MHz be prohibited.

We recommend that the modification of equipment, making it operable in an illegal manner (e.g. at excess power or at unauthorized frequencies) be prohibited.

d) Increased Enforcement Action

It is clear to us that all the concerned parties wish to see a more vigorous enforcement programme undertaken, and we recommend that the DOC promptly adopt such a course. We believe that this will be cost-effective and help to preserve the usefulness of the band. An important further

consideration is that it will enhance respect for the law, the credibility of the Department and discourage the development of vigilante groups.

We do not wish to under-emphasize the role of education which we consider an essential element in the overall band management system. However, we do not believe that education will ever be sufficient in itself.

In our opinion, much less use should be made of warnings, in order to increase the deterrent value of the sanctions.

e) Lower Level of Authorization for Sanctions

We recommend that the Radio Act be changed to permit the imposition of sanctions at much lower levels in the Departmental organization:

Suspension	:	Radio Inspector
License revocation	:	District Manager
Prosecution	:	Regional Director
Administrative Fines (see later)	:	Radio Inspector

In the case of prosecution we recommend that provision be made for the delegation of authority to the District Manager at the discretion of the Regional Director.

Proper provisions must also be made to clearly establish the right of entry of the Radio Inspectors and the obligation of the licensee to admit them.

f) Introduction of Administrative Fines

We recommend the introduction of a system of fixed administrative fines that could be operated at the Radio Inspector level. For these to work effectively it is

essential that the system is not overburdened with administrative and appeal procedures. As a safeguard we recommend a single internal level of appeal, and thereafter, recourse to the courts at the initiation of the individual.

We strongly support the 'ticket' system now being operated by the RCMP, and recommend its extension. It should be supported by the automatic use of the administrative fines.

Satisfactory provision must also be made for the collection of unpaid fines.

g) DOC Responsibility for Enforcement and Staff Training

It is apparent that in many cases DOC has tried to shift the responsibility for enforcement on to other public bodies such as the police.

In our opinion the Department should recognize and accept its responsibility for enforcement of the Act and Regulations.

In some Regions and Districts training seminars have been presented on the subject of prosecutions. We recommend that these are extended to cover all relevant staff.

h) Responsiveness to Local Situations

To maintain responsiveness to local situations we recommend that enforcement is carried out through the District Offices rather than with roving teams of the type used in the U.S.A. In addition we feel that the Department should be at least as responsive to the in-band complaints of GRS'ers as it is to interference complaints lodged by the general public.

i) Publicity

In our opinion enforcement action should be publicized to the maximum possible extent in order to increase its deterrent value.

j) Compliance Measurement

We recommend that some form of compliance measurement be devised in order to measure the effectiveness of Departmental policies.

k) Reduction of Time Spent on Interference Complaints

We recommend that less time is spent on interference complaints, and that more extensive use is made of printed material. We believe the public should be encouraged to solve simple problems themselves, at least to the extent that they are able. This may require the use of more detailed, less technical, printed material. We recommend the Department explore means by which the GRS clubs could assist in this process.

We are of the opinion that the recommendations made will require an increase in enforcement activity in order to raise the level of compliance from its present low level. We are not convinced that this higher level of activity would be required to maintain compliance at a high level. We feel that the use of control at source, streamlined administrative procedures, the deterrent value of an active enforcement programme, and the influence of peer behaviour will substantially offset

the apparent need for additional resources. In addition the proposed changes in the method of handling interference complaints may release manpower for enforcement purposes.

Finally we note that users would be prepared to pay more in license fees if the utility of the band were improved by more effective enforcement action. While we do not recommend the elimination of fees (which has been done in the U.S.A.) we do not necessarily advocate an increase, which may tend to encourage unlicensed operation.

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