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Volume 4: General Information and Broadcasting Services for the North

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NORTHERN COMMUNICATIONS STUDY

VOLUME 4:

GENERAL INFORMATION AND BROADCASTING

SERVICES FOR THE NORTH

TELECOMMISSION DOCUMENTATION

This is Volume 4 of Contribution No. 4 to Telecommission Study 8(c). The complete documentation for the Telecommission Study is:

Contribution No. 1 - Conference Document: "Communications in the Canadian North"

Contribution No. 2 - Catalogue: (Confidential) "Communications Systems In Northern Canada"

Contribution No. 3 - Conference Record: "Yellowknife Northern Communications Conference"

Contribution No. 4 - Northern Communications Study

- Vol. 1 - Synopsis
- Vol. 2 - Prospects for Northern Development
- Vol. 3 - Northern Communications Requirements
- Vol. 4 - General Information and Broadcasting Services for the North
- Vol. 5 - Terrestrial Systems
- Vol. 6 - Communication Satellite Systems
- Vol. 7 - Northern Communications Co-ordination and Planning.

Volumes 2 to 7 are working documents for the Telecommission Study and are not intended to be published.

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SYNOPSIS

Volume 4 of the Telecommission Study 8(c) discusses general information and broadcasting services in the northern context. Emphasis is on people and not hardware. The expressed needs of the northern residents are documented and solutions suggested. The Volume consists of four chapters:-

Chapter I Native Broadcasting and Information Needs

Chapter II Social Impact of Broadcasting in the North

Chapter III Community Broadcasting Stations and Native Radio Amateur Operators

Chapter IV Integrated Broadcasting and Information Services

The timing is right for the imaginative application of technology as an instrument of social change and development. Communication satellites and solid state equipment open a new era of potential benefits. The capability will shortly exist for broadcast network programming to be carried into the North, and hopefully to be originated in the North; while compact equipment such as Video Tape Recorders can be powerful tools for social interaction and dissemination of information at the community level.

The possibility exists that broadcasting and information exchange in the broadest sense might ultimately be combined for education and social development. Such a synthesis of information and broadcasting services is discussed briefly in this Volume.

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NATIVE BROADCASTING AND INFORMATION NEEDS

by

Canadian Metis Society
National Indian Brotherhood of Canada
Indian-Eskimo Association of Canada

CHAPTER I

NATIVE BROADCASTING AND INFORMATION NEEDS

The Canadian Metis Society, National Indian Brotherhood of Canada, and the Indian-Eskimo Association of Canada, presented a brief to the Special Senate Committee on Mass Media in December, 1969. Extracts from this brief concerning broadcasting and general information services are contained in this Chapter to ensure that a direct statement by native people themselves is included in the Telecommission Study.

BACKGROUND

The Present Condition of Native Canadians

1. There are at present an estimated 247,000 status Indians; 250,000 non-status Indians and Metis; and 13,000 Eskimos in Canada. Together they constitute about 2.5% of the population. They are the fastest growing group in Canada, despite the highest infant mortality rate and the shortest life expectancy.

2. The Economic Council of Canada has conservatively estimated that 1/5 of the total Canadian population lives in poverty. The native peoples are the poorest of the poor.

3. Nearly 1/2 of the Indian families earn less than $1,000 a year; 3/4 earn less than 2,000. The national poverty line has been set at $3,600 for a family of four.

4. More than 40% of the Indian population is unemployed and living on relief - ten times the national average.

5. The average life span for Indians in 1965 was 36 years; for Eskimos 20 years; for all Canadians a little over 62 years.

6. The death rate for Indian children of pre-school age is three times the national average.

7. Less than 40% of Indian children complete grade 8; only 6% complete high school, compared with 88% for the whole of Canada.

Radio, Television and Films as a Means of Producing Social Change

1. Radio and television, together with films, can be effective agents of social change. Broadcasting, particularly television, is the most powerful influence on public opinion and social attitudes since the invention of printing. Broadcasting can be used as a two-way channel, sending information to the public and receiving the public's response in return. Properly used it can make the individual more articulate today than he has ever been in the past.

2. It can be of particular value in communication with the poor, most of whom lack the heritage of a literate education. Their communication is oral. Radio and television provide a natural means of communication for them. Broadcasting, properly used, can help promote the social changes needed to bring native peoples into the mainstream of Canadian life without destroying what they value in their present way of life and their heritage from the past. Their traditional culture has been and continues to be destroyed by the impact of modern technology. A part of that technology - broadcasting - can help to restore the balance.

3. At present, Canada's broadcasting system does not serve as an agent of social change. It is more concerned with upholding the existing social order. It is oriented towards the middle class, the consumers - the people who buy the goods its advertisers have to sell.

4. In the past the CBC produced notable programs that resulted in social and political action. In the '40s, its daily farm broadcasts and weekly Farm Radio Forums were pioneering ventures that gave the farmer a strong voice in national affairs and in the '50s, the French

Network's public affairs broadcasts articulated the quiet revolution in Quebec.

5. More recently it has broadcast some excellent programs on poverty in Canada, including some on Indians, Eskimos and Metis. But these programs have been on an occasional and fragmentary basis, produced for middle-class audiences from the point of view of the outsider looking on. They act as an emotional catharsis to the troubled conscience of the affluent and serve as a substitue for action. They are not designed to promote social change. To do so, they would have to be produced on a regular and continuing basis.

6. The National Film Board was set up with similar aims to the CBC: "to initiate and promote the production and distribution of films in the national interest and in particular .... to produce and distribute and to promote the production of films designed to interpret Canada to Canadians and to other nations!' It has been more enterprising than the CBC in producing films to promote change. In cooperation with the Company of Young Canadians it trained and equipped a five man Indian film crew that has produced three films with an Indian perspective. This is part of its series of films entitled "Challenge for Change", whose purpose is 'to improve communications, create greater understanding, promote new ideas and social change'. It has also cooperated with Memorial University in St. John's, Newfoundland, in a project designed to help the citizens of the isolated fishing community of Fogo Island to adapt to a changing economy. There is need for much more activity of this sort from the mass media.

WHAT OTHER COUNTRIES ARE DOING

1. Broadcasting is being used to promote social and economic development in other countries.

2. Both India and Japan have tele-clubs, with feedback after each program. Follow-up activity is usually developed spontaneously

by the clubs and serves as democratic training in citizenship.

3. AIR (India) broadcasts 15000 hours of programs from 30 stations especially prepared for the villagers. It arranges to supply radio sets for the community centres in the villages. There are 25,000 radio forums in India with two-way broadcasting that stimulates free discussion.

4. In Japan television sets are placed in community centres and schools in isolated farming villages. Adult education starts before the television broadcast and is carried by it. The secretary of the community centre takes the initiative in organizing clubs and meetings but allows the people to make the decisions on activities. The program has led villagers to become active members in youth, women's and agricultural organizations.

5. In under-developed countries like Ghana and Mexico, radio and television are being used extensively to promote community development. Details of experiments in the mass media are given in various UNESCO Reports, notably "Mass Media in the Developing Countries"(1961) and "Developing Information Media in Africa"(1962).

6. In the interior of Australia the Australian Broadcasting Corporation has established extensive Schools of the Air programs by turning a network that was primarily for emergency purposes into a socially and educationally useful system. For this purpose, they have devised a transceiver that costs less that $150 a set.

PRESENT BROADCASTS FOR NATIVE PEOPLES IN CANADA

1. With these laudable objectives of the two publicly owned institutions let us look at what they and the private broadcasters are doing for native peoples.

Canadian Broadcasting Corporation

2. The only continuing program for Indians on the national networks of the CBC is INDIAN MAGAZINE, a weekly fifty-minute magazine-type presentation on the English radio network. Its producers describe it as "CBC's weekly forum for the opinions of Canada's Indians as well as news of Indian activities throughout the country".

3. A mimeographed summary of each week's program is mailed free to anyone requesting it. The mailing list is over 8,000. The host is Johnny Yesno, an Ojibway who was born at Fort Hope in northwestern Ontario.

4. In cooperation with the Indian-Eskimo Association, the Northern Service of the CBC is experimenting with a series of radio programs modelled on the Farm Radio Forum of the '40s and '50s. Their object is to produce an exchange of views among Indians and Eskimos themselves and also between experts and public officials and the public. The opinions of the native peoples are, where necessary, tape-recorded in their own language in their own communities. In Inuvik programs have been broadcast in English, Loucheux, and Eskimo; in Yellowknife in English, Dogrib, and Slavee.

5. The Northern Service broadcasts three programs a day, totalling nearly one and three quarter hours, in Eskimo by shortwave to the Arctic. The programs consist of news, information, opinions on matters of concern to Eskimos, legends, and other cultural expressions, and entertainment.

6. There are no programs for Indians or Eskimos on the French radio network of the CBC; nor on the French or English television networks.

Private Stations

7. None of the 230 private radio stations in Canada produces regular continuing programs for local Indian communities in English, French, or Indian languages. The only programs being produced by native people are the Alberta Native Communications Society (ANCS) programs in Cree and Blackfoot, carried on three Alberta stations (discussed more fully below) and INDIAN MAGAZINE, in whole or in part carried by stations affiliated to the English Radio Network of the CBC.

8. Nor are there any continuing programs for native peoples produced by private television stations or carried on the CTV Network.

Communities and Voluntary Groups

(a) The North

9. The tradition of small, locally operated community radio stations is well established in the North. Before the creation of the CBC Northern Service, they provided the only medium-wave broadcasts available in many remote and isolated communities. All but one closed down when the CBC Northern Sevice medium-wave service became available. The exception was Fort Simpson, Northwest Territories, which started up in 1961 with the cooperation of the Department of Indian Affairs and Northern Development and has continued sporadically since, even though the community is now served by an LPRT connected to the Mackenzie network of the Northern Service.

10. A similar station started at Pond Inlet in 1967 without official approval but was later legalized. It operates at low power on AM. Its programs are mainly for and by local Eskimos, with technical help from officers of the Ministry of Transport. It is a prototype of the station that other remote and isolated communities in the eastern Arctic would like to have.

(b) Alberta

11. In 1966 a weekly fifteen minute radio program in Cree, sponsored by the Department of Indian Affairs and Northern Development, was broadcast by CKUA Edmonton. This developed into a weekly half-hour program broadcast on CKUA, CFCW Camrose, and CKYL Peace River. The interest these broadcasts aroused led to the formation of the Alberta Native Communications Society (ANCS) whose aim is to develop and promote better communication among the native peoples of the province. Its membership is restricted to Indians and Metis who formulate and implement their own policies. Its executive director is Eugene Steinhauer, a Cree.

12. The weekly Cree broadcasts reach 56,000 native people in central-northern Alberta, as well as Cree-speaking listeners in British Columbia and Saskatchewan. CKUA Edmonton carried the broadcasts free as a public service; CFCW Camrose and CKYL Peace River are

paid to carry them by the Alberta Native Communications Society from funds provided by ARDA.

13. In March, 1969, the ANCS sponsored a fifteen minute weekly Blackfoot Radio Program under the direction of Ray Many Chief and Leslie Healey, broadcast by CJOC Lethbridge. It consists of topics in both English and Blackfoot.

14. In 1969 the ANCS was awarded a $210,000 grant, one-third from Alberta's Human Resources Development Authority and two-thirds from the Federal Government's ARDA program. The grant will allow it to expand its services and develop new programs of field work and research into the needs of native Canadians. Among other projects it will expand the Blackfoot Radio Program.

15. Alberta Native Communications Service is currently exploring the feasibility of developing a series of community radio stations throughout Alberta to ensure that all native communities are served.

(c) British Columbia

16. The Society for a Coastal Area Network (SCAN), a voluntary group of citizens, has been set up to improve communications among the Indian people of the B.C. Coast. It was originally financed by grants from Simon Fraser University, Le Centre des Recheres Sociales of Montreal and the Catholic Archdiocese of Victoria. Last fall the Donner Canadian Foundation gave it a grant of $60,000. It has developed plans for a Radio and Visual Educational Network (RAVEN) linking Indian communities in coastal B.C. It believes that what is needed is a massive public education drive cutting across tribal divisions and shortcircuiting the requirement-bound and time-wasting structure of the schools. It therefore proposes a radio network linking up every community along the coast, supplementing the visual media that will be put at the disposal of the Indian people, video-tape and film, and the know-how necessary to make them serve their education needs.

17. It plans to use the newly developed Single Sideband transmitters for the network. The SSB have a range of over 350 miles and could provide virtually uninterrupted contact among isolated Indian communities. Indian leaders who have taken over direction of the project have chosen six pilot backbone communities scattered along the entire length of the coast: Skidegate, New Aiyansh, Bella Bella, Alert Bay, Nanaimo, and Vancouver. They suggest that the Ministry of Transport radio station at Alert Bay, which is being phased out of operation, could provide a central coordinating station for the network. Some such centre will be needed to coordinate the distribution of visual materials which would be sent out in response to radio requests.

(a) Northern Ontario

18. Last winter a group of young Ojibway people in northwestern Ontario started a project called KENOMADIWIN whose purpose is to use radio as a means of community development. It plans to use a small mobile broadcasting van travelling between Indian communities to gather and record programs which will be broadcast to other towns and reserves in northwestern Ontario; thus providing a news service for Indians in the area. With the support of the Northwestern Ontario Project of the Company of Young Canadians, a Thunder Bay Communications Group was established. It applied to the Department of Communications for a certificate to establish low power AM broadcasting antennae at eleven sites in northwestern Ontario. The application was rejected because certain technical details required were not given, and because only the CBC and the Department of National Defence have been authorized to operated broadcasting stations with a power lower than 100 watts.

CHAPTER II

THE SOCIAL IMPACT OF BROADCASTING IN THE NORTH

by

Andrew Cowan

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To date there have not been any studies by sociologists or anthropologists of the impact of broadcasting on the lives of the people of the Canadian North although the Indians and Eskimos there have been probed and investigated for practically everything else. As broadcasting is comparatively new in the North there is little to study. No doubt the field will be ripe for a harvest of doctoral research when television has taken possession of every tent and living room and its effect on the folkways of the people can be measured.

This paper is not a layman's substitute for a study by social scientists. It is an expression of personal views acquired during twelve years of broadcasting in the North.

Any assessment, however tentative, of the social impact of broadcasting in the North must be related to the social objectives of the government's policy of economic development there. For the development of Northern Canada is controlled by government, federal and provincial, directly through the civil service and indirectly through crown agencies. Government can direct and control the impact of economic development on the lives of the people.

The Prime Minister declared earlier this year to a group of students at Carleton University that government in Canada today is concerned with the quality of life of Canadians, not merely with the quantity of things they consume. This is a departure from the conventional wisdom that maintains that the function of government is to make the country safe for private enterprise and let quality look after itself.

Ministerial statements on the government's social objectives in the North have been vague and pietistic. They have repeatedly stated that northern resources must be developed in the interests of the native peoples as well as Canadians as a whole. The results of this policy are not apparent to date nor are the means of achieving them.

The drive to develop the North's natural resources comes from 'outside'; its financial clout is international as well as national. The needs and rights of the native peoples are as relevant to the objectives of the developers as they were to the objectives of the settlers who took the Indians' lands in the rest of North America during the past three hundred years. Today the protests of the Indians and Eskimos of the North that their rights in the land are being ignored by the government and the developers echo the protests of the Metis of the Red River in 1870 and Indians and Metis of the North Saskatchewan in 1885.

In the past two decades there has developed a mystique about the wealth of the North that is reminiscent of the mystique about the wealth of the East that prevailed in Europe for centuries. Even amidst the harsh realities of environmental pollution, inflation and social violence it is almost heretical to question the advantage to the nation of certain aspects of Northern development.

But there can be no question of the advantage to the nation of developing the human resources, the Original Peoples. They are Canada's most valuable undeveloped resource in the North. It is with the social impact of broadcasting on them that this paper is mostly concerned.

The population of the North is polarised between two social groups: the minority of white incomers at one end and the majority of native Indians, Eskimos and Metis, the Original Peoples as they call themselves, at the other. The former have the jobs, the money and the power; the latter are economically deprived, cuturally alienated and politically powerless. The whites are in the North

by choice, the majority to better themselves financially, a minority to better the lot of others; the natives are there because they were born there and they have nowhere else to go.

Poverty in the North is part of the national problem of poverty, of wasted human resources, the economic and social disenfranchisement of almost a quarter of the nation. The Economic Council has pointed out that poverty in Canada is often so disguised (it does not, for example, invariably go about in rags) that it can pass largely unnoticed by those in happier circumstances.

In the North it is undisguised. It differs from poverty in the rest of Canada not only in degree, its incidence is higher, but in kind, its victims are of a different race and culture from the rest of the community.

The Original Peoples of Canada as a group are the poorest of the poor. The Hawthorn Report describes them as 'citizens minus' when, as 'charter Canadians' they ought to be 'citizens plus'. A few statistics, to quote the Economic Council, tell a brutal story. The average life expectancy of a Canadian Indian woman is 25 years; the infant mortality rate among Eskimos is ten times the national average.

But despite the shadow of poverty and death in which they live the Indians, Eskimos and Metis who were thought at one time, perhaps wishfully by some, to be a dying race, are increasing in numbers faster than any other racial group in Canada. The Indian population will double in about fourteen years. Because of their high birthrate and the declining birthrate of the country as a whole their proportion in the total population will also increase.

Will the increase mean an improvement in the quality of Canadian life through the contribution of vigorous, productive, culturally enterprising Original Peoples or a deterioration because of their increasing poverty and alienation, leading to frustration and eventually violence?

With their increasing numbers the Original Peoples can no longer live on the land that at one time provided for their unsophisticated wants. They are moving into the larger centres especially the big cities. The younger ones who have been to school and enjoyed a taste of urban life and glimpsed more of it through the distorting mirror of TV commercials, the restless in search of change, the ambitious in search of work, the disillusioned and the hostile, are all following the road of jobless, landless rural people throughout history the world over, the road to town.

Without skills, without jobs, without purpose in a hostile environment, their poverty is transferred from the countryside to the city; the rural slum becomes an urban ghetto. Rejected socially by the dominant white society who look upon them in terms of the stereotype of the shiftless drunken Indian, their situation is more desperate than that of the white poor in similar circumstances. They seek the company of their own kind in the cheapest housing available. In the large cities they usually seek the older central residential districts abandoned by the middle class for more distant suburbs; in the smaller, remoter towns they squat on the outskirts in their shacks. In the big cities they become the hard core inner city slum which, unless it is defused, will eventually explode with the pent-up frustration of restless and frustrated youth.

What the black man is among the poor of the United States the Indian is among the poor of Canada. What the black man has done to the cities of the United States the Indian can eventually do to the cities of Canada.

Poverty is the major problem in the North today, the problem of undeveloped human resources. The impact of broadcasting on the problem will depend on whether it is an agent of social change or a bulwark of the status quo; a means of improving the quality of

life for the many or of increasing the quantity of things consumed by the few; a medium to stimulate new ideas and interests or to prefabricate social and political attitudes.

Two crown agencies, the CBC and the CRTC, control broadcasting in the North. There is little private broadcasting as it is known in the rest of Canada so broadcasting in effect means the CBC. The Northern Service covers most of the North and its people.

The program policies of the CBC stem from the Broadcasting Act which is its charter and mandate. The Act enjoins it, among other things, to promote national unity. The obvious divisive forces to be overcome, the most politically abrasive ones, are the differences between regions of the country and between the English and French cultures. But underlying these is poverty, a divisive force that can destroy Canada as effectively as any regional or cultural separatism.

Nowhere in Canada is the gulf between the affluent and the poor, the inheritors and the dispossessed, more marked than in the North. The extent to which broadcasting there fulfills its mandate to promote national unity will be measured by the help it gives the Original Peoples in their struggle to overcome poverty and ignorance and achieve a position of economic and political equality with the whites. Only then can national unity become meaningful.

In the North as in the rest of Canada, broadcasting is predominantly middle class in its outlook and appeal. The majority of the programs on the Northern Service are for the white minority. The reasons for this are obvious. The white minority is articulate and powerful. It makes its wants known. The Northern Service, as part of the national broadcasting system, draws on the national networks for many of its programs. The staff at the Northern stations is largely white.

The administrators, police, teachers, traders, prospectors, scientists, workers and professionals whose knowledge and skill are

necessary for the development of the North and the well-being of its people, quite properly demand as a condition of their living and working there the basic amenities of life 'outside' - housing, education, health services, communications, transportation and broadcasting. The cost to the nation is high but the government has decided that the development of the North is worth it.

The cost of providing a broadcasting service in the North is about five times the national average of $7.30 per person annually. Eighty percent of the cost of operating the CBC is provided by the federal treasury. The balance comes from advertising. As the Northern Service does not carry commercial advertising, its entire cost may be said to be borne by the taxpayer as is the case with most of the other public services in the North. The major part of the annual cost of providing a broadcasting service goes to programs for a minority of the population. As the television service is expanded both the per capita cost and the proportion of the total cost devoted to the non-native population will increase.

These proportions compare with the amounts spent by the federal government on public services for the whole nation and those spent by the Department of Indian Affairs & Northern Development on Indians. According to the Hawthorne Report the average amount spent on all Canadians by all levels of government in 1964 was $740.00 per person whereas the amount spent on Indians and Eskimos was $300.00.

One could wish that the Original Peoples of the North were as articulate in expressing their demands and as effective in having them realized as their white fellow citizens. The fact that they are neither demanding nor critical of the broadcasting service does not mean that they neither desire nor deserve it. To a great extent they are not aware of what it can do for them. What they need and what they want is not by any means the same

as the white middle class needs and wants.

Broadcasting is the obvious means of mass communication for people without a written culture, unaccustomed to communicating by the written word and without the means of doing so even if they were, living in isolated communities across the breadth of the continent and remote from the rest of the country. It can be to them not only a source of information but a platform from which to speak, to be seen and be heard.

The reasons for lack of adequate programs for the native peoples on the Northern Service is just as obvious as the reason for the abundance of programs for the white transients. The Northern Service has no source of programs for Indians, Eskimos and Metis to draw upon from the national networks, and no experienced body of broadcasters to create them either 'outside' or in the North. There are no precedents in Canada for broadcasting to Indians, Eskimos and Metis. The North has to train its native broadcasters to create their own programs with little assistance from outside bodies.

Assuming that the broadcast needs and wishes of the native peoples could be adequately met, is it possible for one broadcasting channel to provide a service to two groups in the one community? Can an adequate service be given to each by combining them on the one delivery system? Is an equitable distribution of broadcast time and program funds between them possible?

Until now the white minority has been tolerant of the few programs for native peoples on Northern Service radio, some of them in Indian and Eskimo languages. But experience has shown that mixed broadcasting audiences are not very tolerant of each other's tastes, preferences and language.

If broadcasting is to help native peoples it must serve them in a two-fold way: as a source of information and entertainment and as a means of self expression.

Ideally the Indians, Eskimos and Metis should have their own broadcasting system with small independent community stations to serve local needs and exchanging programs among themselves by means of tape recordings. This could, in time, develop into connected networks.

This concept of community broadcasting may sound novel, if not revolutionary, but it is not original. It is quite feasible in both radio and television. Experiments in 'store front' broadcasting are taking place in the United States.

Broadcasting is not a difficult art and its hardware is becoming cheaper and more easily managed by people without a great deal of technical skill. Community radio, and eventually television, stations could be started in the North. They could be paid for by a small levy on the wealth being taken out of the land there which, in the view of the Original Peoples, still belongs to them. At least they have an equity in it and this could be one way of redeeming it.

A scheme for low power F.M. community radio stations was devised to serve small isolated communities in the North, particularly the High Arctic, not served by the medium band stations of the Northern Service.* The stations would be operated voluntarily by the people of the community to broadcast programs of information and entertainment in the local language. The station would keep in touch with the 'outside' by means of the CBC's Northern shortwave service, particularly its news and messages in Eskimo. The stations would circulate their own programs on tape among themselves. The CBC's role in this scheme would be to train operators, advise on technical equipment, supply programs if requested and help the stations circulate their own taped programs. The government would buy the equipment and pay for its installation; the community would pay for its upkeep. Besides its effect on community development, the project would have a spinoff in familiarizing native peoples with the use of electronic equipment, a skill which could be useful to the young seeking work 'outside'.

A similar scheme is being pursued by the Mid-Canada Community Service and Broadcasting Foundation, a subsidiary of the Mid-Canada Development Foundation. It is building its first station this year at Tuktoyaktuk with the co-operation of radio station CHUM, Toronto.

*See Chapter II

The Native Communications Society of Alberta, with the financial support of the federal and Alberta governments, produces programs in Cree for six private stations in the province and hopes eventually to develop its own network of local stations. This network would include other Indian nations as well as Cree including the Blackfoot of Morley who broadcast in their own language on a local private station and have plans for a station of their own.

While television stations are more expensive to build and operate the development of videotape recording makes possible non-broadcast visual program networks. These lack the immediacy of television broadcasts but have some of the advantages of cable transmission.

The Society for a Coastal Area Network in British Columbia, SCAN, has a project to circulate videotaped programs made by themselves and acquired from outside sources among isolated Indian communities on the Pacific Coast. There would also be a radio network linking the communities. This Radio and Visual Educational Network, known by the romantic acronym of RAVEN, would be operated by the Indians themselves.

Perhaps the Original Peoples of Canada will be the pioneers in disestablishing broadcasting, freeing it from the domination of public agencies on the one hand and by business on the other, making it the two-way communication system it must become if it is to be an agency of social change, of participatory democracy, available to ordinary citizens for the exchange of ideas, the governed to talk to their governors, public servants to account to the public they serve, consumers to confront producers. Until now broadcasting has been largely a one-way channel of communication where the governors talk to the governed, the experts dispense their particular expertise and sellers brainwash buyers.

The national broadcasting system would provide the community stations with national and international news, information and entertainment.

In the meantime, pending the advent of community controlled broadcasting, how can the publicly owned national broadcasting system help bring about social change in the North?

It must involve the native peoples in its programming; give them the information they need in the language they understand and the form they appreciate; give them the entertainment they enjoy including their own; provide them with a platform for the expression of their views, discussion of their problems and the airing of their grievances.

The Northern Service has sought to involve native peoples in its programming by taking them on staff, employing them as free-lance broadcasters, consulting them as individuals and as organized groups.

Where necessary and where possible it broadcasts in local native languages - Northern Cree, Chipewyan, Slave, Dogrib, Kutchin and the principal Eskimo dialects. This is the only way to communicate with those Indians and Eskimos, especially the older ones, who still speak only their mother tongue and it is a mark of respect for their culture and traditions. Without a written culture the spoken language is the repository of their racial memory, their myths and their legends. The individual draws strength and self-respect from the culture of his people. The deliberate disrespect for native languages shown by the educational system has helped to destroy the self respect of the native peoples. The Northern Service has helped to preserve the story of their past by broadcasting, and recording for the archives, their myths and folk tales and the reminiscences of their elders of a way of life that has gone from the North as the scythe has gone from the farm.

The information which the Original Peoples need to cope with the urbanized wage earning cash economy that is so painfully different from the life on the land, information on health, housing, the law, education, consumer goods and services, jobs, government, must be given to them in a language they understand. The English must be of

Bunyanesque simplicity, simple, descriptive, declaratory. The test of its simplicity is its ability to be translated easily into native languages. It must be free of gobbledygook, expertise and academic abstractions.

Drama is an ancient and hallowed tool for imparting information and stimulating thought. The Northern Service has produced plays by native peoples on themes of their own choosing and acted spontaneously by them without scripts. Almost one hundred radio plays have been produced and recorded at Povungnituk in Eskimo by Eskimo actors. Peter Murdoch, a well known figure in the North, initiated them and today the Eskimos can produce the plays themselves. A similar series was produced this summer in Yellowknife by Phoebe Nahanni, a university student from Fort Simpson.

Besides giving information and entertainment, broadcasting must provide the native peoples with the means of self expression. This can take a variety of forms. The Northern Service has tried to adapt the CBC's Farm and Citizens Radio Forums, long discarded on the national networks, to the needs of native peoples of the North. It has co-operated with the Indian-Eskimo Association in this. The Community Action Programs have tried to stimulate an expression of views by Indians and Eskimos in their own communities. This has been neither simple nor easy. The native peoples are unaccustomed to expressing opinions on their situation that might be critical of the establishment and broadcasting is part of the establishment to which they have never belonged. It has taken time to convince them that the CBC exists to serve them as well as the white population. With the growth of native organizations such as the Yukon and the Northwest Territories Native Brotherhoods, and the Committee on Original Peoples Entitlement, COPE, the native peoples now have a more powerful and articulate voice for the expression of their views which will be reflected in their broadcasts.

Broadcasting is part of the process of developing native leaders. Simonie Michael, the only elected member of the Northwest Territories Council who is either Indian or Eskimo, was a broadcaster on radio station CFFB before he was elected.

Radio service for the native peoples of the North is comparatively cheap to operate and programs are easy to produce. The evidence available suggests that the programs produced by the Northern Service to date have had a considerable effect on the attitudes and ideas of the native peoples. Television is a still more powerful medium. The visual has the same universality that music has in sound. Whether or not one picture is worth a thousand words it can at least be understood by everyone whatever his language.

The impact of this powerful medium on the lives of native peoples in the North is both exciting and frightening. Exciting if it is used as an agency of social change to improve the quality of their lives; frightening if used to replace their traditional values of community living and sharing with the competitive, acquisitive way of life of the consumer economy before they have become adjusted to it and integrated into it.

The existing Frontier Package Television service of the CBC in the North was designed for the white transient population. It broadcasts a condensed schedule of the programs of the national network. It does not broadcast any programs designed for the people of the North either white or native. If the satellite is to be used simply to transmit the national television network live to the North the quantity and range of the programs will be increased but not their nature.

If, however, satellite is to be the boon to the native peoples of the North that the Prime Minister and the Minister of Indian Affairs and Northern Development have stated, programs for them and by them such as are being produced on radio will have to be produced on television as well. That will be costly but not beyond the financial capacity of the nation and the benefit from them will be proportionate to their cost. The alternative is to treat the Original Peoples in the North as bystanders, rubbernecks of the white man's parade, eavesdroppers and knot hole watchers of a world that will never be theirs.

The impact of some standard television programs could even be harmful to them. The stereotypes of native peoples, especially the Indian, that are still part of the dramatic stock in trade, humiliate and degrade the Original Peoples when they do not outrage and anger them. The emphasis on consumption in our television commercials tantalizes the poor with a range and variety of goods they can never hope to possess unless by theft. The consumer philosophy assiduously promoted by television that happiness consists of the possession of goods is contrary to the philosophy of mutual sharing that has characterized the traditional life of the Original Peoples on the land.

What the visual medium can do for the native peoples is illustrated by the National Film Board's series "Challenge for Change". The Film Board has trained Indian producers and cameramen and allowed them to make their own films, tell it as they see it not as the white majority sees it or thinks the Indians should see it.

If the Original Peoples of Canada, and the poor of which they form a part, are to emerge peacefully from the iron ring of poverty and ignorance in which the majority of them are held and take their place in the greater society, they must be given the help they need from government and its agencies and from the public. They must be allowed to become equal citizens as Indians, Eskimos and Metis, not reconstituted white men, and be accepted as such by the dominant group. As equal citizens they have as much to give as to receive from Canadian society. In terms of the conventional wisdom an investment now, which though large in sum would be small in terms of the wealth of Canada, will yield invaluable long term dividends. Failure to make the investment can mean long term national impoverishment and destructive violence.

The Indians, Eskimos and Metis must become articulate, their talents and energies given channels of peaceful expression. Broadcasting can help in this by giving them a voice and an image. If it fails to do so it will fail not only the Original Peoples but the

nation. The result can only be increased alienation and eventually violence, which Martin Luther King called the language of the inarticulate.

CHAPTER III

COMMUNITY BROADCASTING STATIONS

AND

NATIVE RADIO AMATEUR OPERATORS

by

T. D. STEWART
H. WALKER
J. T. CHROME

CHAPTER III

COMMUNITY BROADCASTING STATIONS AND NATIVE RADIO AMATEUR OPERATORS

INTRODUCTION

Native speakers at the Northern Communications Conference held at Yellowknife between September 9 and 11, 1970, expressed considerable interest in locally operated radio broadcast stations. These stations would broadcast information and entertainment by the native people themselves. A practical and economical solution to this problem was developed in 1967 by a team of three experts: Mr. T.D. Stewart (Department of Indian Affairs and Northern Development), Mr. H. Walker (Canadian Broadcasting Corporation), and Mr. J.T. Chrome (Department of Communications). Their work follows. Minor changes have been made to reflect cost increases in the 1967-70 period and to eliminate material of no direct interest to the Telecommission.

The Chapter is divided into three parts:

(1) The general conditions for the establishment of community radio stations;

(2) A proposal for community broadcasting stations; and

(3) A proposal for the training and encouragement of native people as radio amateurs providing a community service.

GENERAL CONDITIONS FOR THE ESTABLISHMENT OF COMMUNITY RADIO STATIONS

A. General Conditions

Certain conditions should be met before a decision is made to proceed with the establishment of a community radio broadcasting station in a particular community. They are:

1. Proposals to establish community radio stations should originate from the community itself.

2. The broadcasting licence for community radio stations should be held in the name of the local Community Council, wherever one exists, and Council should appoint a small board of residents to act as directors for the local station - to be responsible to the Council on all matters of station business, management, and programming.

3. Before government assistance is given for the establishment of a station, the community should meet certain (as yet unspecified) conditions in regard to:
   - proof of public support and enthusiasm for the project,
   - proof of the usefulness of the radio service to the community,
   - ability to pay operational costs,
   - willingness to provide appropriate labour to assist with installation,
   - assurance of continued capable and responsible management of this station,
   - agreement to provide certain general broadcasting services and program content,
   - proof that there is available (in the community) a suitable and adequate building and electrical power capacity, and (from Regional centres) technical services for installation, repair and maintenance.

4. On its part, the Government should
   (a) specify the equipment, and assume responsibility for ordering, shipping, and installing it.
   (b) absorb the initial equipment and installation costs, and certain other special costs noted below.
   (c) assume certain other responsibilities (noted in Section B below) in regard to technical matters.

B. Some Technical, Finanacial, and Other Responsibilities which Need to be allocated

1. Initial
   (a) Stimulation of initial enthusiasm for community radio stations and channelling of this enthusiasm into a formal proposal to establish a station.
   (b) Notification - to all concerned Government agencies - of a community's initial proposal to establish a station.
   (c) Collection from the community of the necessary detailed information required for filing the application for a broadcasting licence.
   (d) If necessary, the making of arrangements to have a local association incorporated as a prerequisite to licensing.
   (e) The supervision of site preparation.

2. Establishment of the Station
   (a) The completion and presentation of the licence application (including the radio engineering report, and the technical brief) to the appropriate authorities.
   (b) The ordering and installation of the equipment.
   (c) The instruction of local volunteers in the operation and maintenance of the equipment.
   (d) The provision of funds to cover costs of establishing station.

3. Operation of the Station
   (a) The provision of continuing advice and consultation to Regional centres, on equipment repair, maintenance, and future additions.

(b) The undertaking of major repairs that are beyond local capacities, not including the cost of needed parts.
(c) The supplying of normal technical inspection services.
(d) The provision of some portion of program materials.
(e) The maintenance of direct and continuing contact with the station in order to supply supervision, support, and technical assistance with broadcasting matters (but not matters related to equipment repair and maintenance).
(f) The allocation of financial responsibility for operating the station.

C. Provisional Checklist of Items for Financial Consideration

Cost

1) Licence Fee
2) Site Preparation
3) Initial Equipment - Purchase and Freight
   - Installation (Labour)
   - Transport (Technicians)
4) Operating Costs - Heat, Electricity, Minor Repairs, Records Tapes, Capac Fees, etc.
5) Major Repairs and Installations
   - Parts
   - Labour
   Transport (Technicians)

D. Priorities for Government Assistance

Some of the important crieria which might be used in working out a priority list for establishing community radio stations are: the degree of local interest and support for the proposed station; the availability of CBC broadcasting services; population size; and social considerations. These factors are amplified below.

1. Community support and interest in establishing and maintaining a local station.

   This is essentially a matter of how much a community wants a radio station - as opposed to how much it may be considered to need it. Need can, for example, be more clearly ascertained by taking into account social factors in the community, the immediate or imminent availability of CBC services, and so on. Such an examination may clearly show a strong need for a local station, but unless the community is aware of this need and anxious to do something concrete about it, it is extremely unlikely that the station will get the sort of local participation that it requires to be successful. Accordingly, the degree of community interest in establishing and maintaining a local station should be a primary priority consideration - i.e. how much do they want it? The following communities have shown a very strong interest in operating a volunteer station: Cape Dorset, Great Whale River, Igloolik, Resolute Bay, and Baker Lake.

2. Availability of CBC Services

   The availability of CBC Broadcast Services in a given community is the product of a number of factors - such as cost-per-listener, geographical isolation, size of population, amount of electrical interference, current or imminent availability of land-line circuits, or tropospheric scatter and microwave installations, and so on. While in practice it is not difficult to differentiate between communities' respective needs for service in terms of the amount of broadcast material that is currently or immediately available to them from outside sources, it is important for residents to understand that this factor will be taken into account by the government in ascribing higher or lower priority to applications for assistance in establishing stations, with preference being given to communities which otherwise would have little prospect of receiving CBC service.

3. Population

It is customary to use population size to determine priority in establishing radio and TV stations in southern Canada, i.e. larger communities receive installations before smaller communities. This principle might be modified in the North, to give communities in the mid-range a higher priority than both the smallest and the largest communities. Very small settlements are more likely to be abandoned by residents, as well as to be inaccessible, the cost-per-listener of a radio service is higher, and the practical problems are greater of simply getting enough volunteers to manage the operation. The largest communities, on the other hand, stand a much better chance of obtaining a regular CBC installation - or being included in a regional broadcasting plan.

4. Social Factors

Social conditions in a community are not taken into account - in southern Canada, at least - in determining whether or not to establish a radio or TV station. Nevertheless, in view of the powerful influence a community radio station can have in unifying and educating a community, it is considered that - in the North - social conditions are one of the most important indicators of need for a local broadcasting service, and should therefore be closely considered in determining priority. In practice, this would mean ascribing higher priority to communities with severe social problems, than to settlements where social conditions were more stable.

17. It plans to use the newly developed Single Sideband transmitters for the network. The SSB have a range of over 350 miles and could provide virtually uninterrupted contact among isolated Indian communities. Indian leaders who have taken over direction of the project have chosen six pilot backbone communities scattered along the entire length of the coast: Skidegate, New Aiyansh, Bella Bella, Alert Bay, Nanaimo, and Vancouver. They suggest that the Ministry of Transport radio station at Alert Bay, which is being phased out of operation, could provide a central coordinating station for the network. Some such centre will be needed to coordinate the distribution of visual materials which would be sent out in response to radio requests.

(a) Northern Ontario

18. Last winter a group of young Ojibway people in northwestern Ontario started a project called KENOMADIWIN whose purpose is to use radio as a means of community development. It plans to use a small mobile broadcasting van travelling between Indian communities to gather and record programs which will be broadcast to other towns and reserves in northwestern Ontario; thus providing a news service for Indians in the area. With the support of the Northwestern Ontario Project of the Company of Young Canadians, a Thunder Bay Communications Group was established. It applied to the Department of Communications for a certificate to establish low power AM broadcasting antennae at eleven sites in northwestern Ontario. The application was rejected because certain technical details required were not given, and because only the CBC and the Department of National Defence have been authorized to operate broadcasting stations with a power lower than 100 watts.

PROPOSAL

for

COMMUNITY BROADCASTING STATIONS

I. Technical Aspects of the Proposal

A. General Criteria - For purposes of discussion the following general criteria were adopted.

1. Audience to be Served

(a) Settlements requiring this type of local broadcasting facility are scattered throughout the North. Their size ranges upward to 200 families. The smallest size community to be served has not been stipulated since this is a matter of policy and priorities. Some suggestions for such a priority ranking are made in the appendix.

(b) The communities to be served have certain characteristics in common:

(i) Insufficient financial and technical capability to install a local radio station.

(ii) A preponderance of Eskimo, Indian or Metis residents.

(iii) Low level of academic education.

(iv) Language of common usage is Eskimo or Indian dialect: most residents have little or no comprehension of English.

(v) Socially, culturally, and geographically isolated.

(vi) A significant degree of "social atomism"; i.e. on the one hand residents generally have a confused and discontinuous conception of the larger Canadian culture - which appears to them as an "alien" culture in many respects; while on the other hand, linkages are weak between neighbour-and-neighbour, resident-and-

community, community-and-community, and community-and-nation

(vii) A significant degree of social disorganization, cultural dislocation, cultural conflicts, and inter-generational conflicts

(viii) Limited mobility (there is little likelihood of residents escaping their problems by physically removing themselves, or by moving upward in social class).

(ix) Small population - which makes it uneconomic to apply large-scale, locally-based ameliorative measures to relieve social problems.

2. Programming

(a) Local control of programming would be a prominent feature.

(b) Heavy emphasis would be placed upon use of local languages.

(c) All government departments active in the North would be encouraged to make use of local broadcasting stations to facilitate their operations, but this use would be kept within reasonable limits to ensure that the stations do not become - in the minds of local residents - "propaganda organs".

(d) The selling of advertising time by local stations might be considered as a source of revenue to help communities underwrite operating costs. The full implications of this need to be explored, of course, but possible advertisers are companies trading in the North (e.g. Hudson Bay Company, Eatons, local merchants, airlines, Skidoo, Bombardier, small arms companies, etc.) Encouragement by government departments could assist in this, and companies' expenditures would represent only a small part of their total advertising dollar.

(e) The C.B.C. would provide technical assistance in programming to encourage communities to undertake local productions which could be circulated to other communities.

3. Licencing

It was recognized that community radio stations will have to be operated under Private Commercial Broadcasting Station Licences. This is a statutory requirement. Stations which broadcast programs intended for reception by the public may only be operated under, and in accordance with this class of licence, irrespective of whether the station is operated on a non-commercial or commercial basis. There is no provision to exempt from licencing any transmitting device operated within the broadcast bands.

B. Technical Criteria

Community broadcasting stations should be:

1. Able to provide a reliable service.
2. Economical to install, maintain, and operate.
3. Simple enough to be run by volunteers.
4. If possible, sufficiently powerful to ensure reception in surrounding hunting-camps (in most cases, at least, and under normal conditions).
5. Capable of receiving and re-broadcasting short wave services from CBC and abroad.

C. Estimated Costs of Small AM & FM Broadcasting Station

	AM			FM
	40 watt	100 watt	250 watt	250 watt
		DOLLARS *		
Transmitter and spare parts	2,800	6,000	6,500	6,500
Studio equipment	6,500	6,500	6,500	6,000
Antenna, Coupler & Ground System	3,000	5,000	5,000	1,500
TOTAL	$12,300	$17,500	$18,000	$14,000

* Adjusted to allow for increased costs in 1967-70 period.

Notes:

1. Studio equipment includes: voltage regulator, turntable, tape recorder, short-wave receiver (for re-broadcasting), microphones, tools,etc.
2. In all cases, furniture and a studio building are presumed to be available in the community. Generally, a reasonably soundproof room of about 10' x 15' would be required (preferably in the Community Centre).
3. Cost estimates of equipment (and subsequent evaluations of that equipment) are based on a survey of equipment now available on the market. It is, of course, quite possible - and might indeed be desirable - to request one or more manufacturers to design low-power transmitting systems especially for northern conditions, but this would necessitate paying them several thousand dollars development costs.
4. Antenna costs for FM stations (estimated at $1,500) are relatively low because FM requires no ground system. Even this estimate may be reduced substantially in specific instances, where local conditions make it possible to use a simpler antenna.

E. Predicted coverage of Small AM and FM Broadcasting Station

	AM			FM
	40 watt	100 watt	250 watt	250 watt
			(MILES)	
Minimum range	8	10	12	6
Maximum range	17	21	25	17

Notes:

1. Minimum and maximum coverage estimates are based on average conditions. Coverage might be considerably greater in flat or very gently rolling areas with fairly deep soil overlay (e.g. Aklavik) or over water (e.g. Igloolik) but might be even less in mountainous areas

(e.g. Pangnirtung). "Minimum range" represents the predicted reliable coverage, and the "maximum range" the expected satisfactory service for northern communities.

F. Technical Considerations

1. Type of Service - General

Amplitude modification (i.e. AM) broadcasting has been the standard type of broadcasting service for many years throughout Canada, but recently frequency modulation (i.e. FM) has been growing in popularity. It should be noted that much of FM's current popularity in the south is due to certain of its characteristics which fit the special requirements of crowded urban centres with congested transmission frequencies. Nevertheless, either FM or AM can give good service in northern communities, and the advantages and disadvantages of both types were therefore investigated.

2. Coverage

FM gives a powerful, uniform and noise-free transmission of limited range with fairly sharply-delineated geographical boundaries, and with little or no sky-wave propagation to interfere with signals in other urban areas. It is commonly used not only for high-quality broadcasting, but also for police, and mobile commercial communications (taxi companies, delivery services, and other service industries).

The coverage of both AM and FM broadcasts is, of course, a function of the power of the transmitter (e.g. 100 watt, 250 watt, 5 kilowatts, etc.) and the characteristics of the antenna system. There is, however, a limitation inherent in FM which has important implications for northern use. FM reception is much more heavily influenced than is AM by the topography of the potential reception area, i.e. FM reception - like TV reception - is limited pretty much to the horizon for a given antenna height (i.e. "line-of-sight"). In

mountainous countryside (e.g. Pangnirtung, Cape Dorset, Broughton Island) it is very doubtful if reception of FM broadcasts could be assured for many outlying camps that lie within the theoretical transmission range, but were "on the other side of the mountain".

3. Antenna and Ground Systems

AM stations use non-directional antennae where conditions permit, but more frequently they must use directional antennae in order that the broadcasts will reach those areas the stations are intended to serve, and to protect other stations broadcasting on related frequencies.

FM stations, on the other hand, are required to use only non-directional antennae (except in very special circumstances). The FM antenna has a "built-in bonus", however, in that it is simple - by minor modification - to achieve an effective radiated power that is considerably higher than the basic power of the transmitter. This, in turn, means greater coverage for the station.

FM stations have a distinct advantage over AM stations in regard to antenna and ground systems. Both types of station require a broadcasting antenna, of course, but the FM. antenna is smaller, simpler to install, and cheaper. Moreover, an AM station requires- in addition to its antenna - that a ground system of radial wires be laid surrounding the antenna. This is expensive and troublesome to install and maintain even in the south. In the North it is immensely more difficult. FM, on the other hand, requires no such ground system.

4. Radio Engineering Reports

Every application for a Private Commercial Broadcasting Station Licence must be accompanied by a technical brief. This is a complex document, completed by a qualified radio engineer, who investigates local conditions, and the design of the proposed installation, to ascertain that protection requirements to other stations are met, and that the area the station is intended to serve will receive an adequate signal. This, of course, requires the engineer to visit the area. After the station has been authorized, a further document is

required before the station may broadcast. This certifies that the station's actual operation has been tested, and that it operates as it was designed to.

In the case of FM stations, this second document is a simple certificate, quickly and easily completed without the necessity for an engineer to measure the field strength of signals at certain points in the coverage area. The case of an AM station is significantly different. The document required here is a "Proof of Performance" which requires extensive instrument-tests to be made.

In practice, this difference means that the cost of preliminary engineering reports for an AM station in the North may be two or three times higher than those for a FM station, and that delays are much more likely to occur in actually starting an AM broadcasting service once it has been authorized, than is the case with a FM service.

5. Flexibility

In view of the rapid and considerable changes in social and economic condition which are taking place in the North, there is much to recommend a flexible type of broadcasting system that can lend itself readily to modification, expansion, and removal of a station to meet different conditions in various locations, and changing conditions in any one location.

Flexibility is a very real requirement considering the possibility of such unpredictable factors as population growth, shifts in residential locations, the effects of the encouragement that is being given to organized hunting (which takes hunters out in radial patterns to distant locations from a base in the settlement), and so on.

In this respect, FM broadcasting has an advantage over AM. The only way in which an AM broadcasting station can be expanded to provide greater coverage is to replace the transmitter with a more powerful one, or to increase the height of the antenna tower. The purchase and installation of more powerful equipment is expensive (see table) and problems are

raised of disposal of the replaced equipment, freighting it out, and so on. Increasing the height of an AM antenna tower is a very costly and complex undertaking. Extending the range of an FM station is, however, very much simpler and cheaper. It can be done by simply adding additional bays to the antenna, or by raising its supporting structure, to increase the antenna height (which is relatively cheap and easy in comparison to increasing the height of an AM tower).

6. Receivers

No statistics are available on the number and types of radio receivers in northern homes, but it is probably fair to say that the vast majority are AM standard band, short-wave, or a combination of both. Undoubtedly some families own FM receivers (either brought in with their household effects from the south, or purchased locally in sets that receive all bands) but FM receivers, as such, are not, of course, now in use in the North. Listening in the East is pretty well confined to short-wave broadcasts, with the exception of Churchill and Frobisher Bay where there are local AM stations. Western listeners have more AM broadcasting available to them, but it is likely that a good many listeners tune in to short-wave as well - particularly in Arctic areas.

The establishment of FM broadcasting stations would thus require nearly all residents to purchase new receivers. Suitable AM-FM receivers are now available in southern Canada for about $25 each (battery type) or $45 each (AC type). Owners of AM receivers could purchase FM converters for their sets for a somewhat smaller outlay.

The establishment of AM broadcasting stations, on the other hand, would require a smaller number of residents to purchase receivers, since many already own them. Those who did not could obtain reliable battery sets for as little as $15, or AC sets for about $25.

No matter which type of broadcast system is adopted, it is wise to encourage the use of small battery sets to ensure the reception of emergency messages by outlying camps, or by hunting parties. One way this could be facilitated without recourse to subsidy would be to encourage Community Councils or co-operatives to obtain access to manufacturers' discounts by consolidating individual purchase into large bulk orders.

7. Power, Protected Frequencies, and Design Considerations

AM broadcasting systems of three strengths (40 watts, 100 watts, and 250 watts) and an FM system of roughly equivalent power (250 watts) were compared. The costs and complexity of operation and maintenance of each type are pretty much the same, with freight costs for the AM system being somewhat higher. The ground system for the 40 watt AM station is somewhat cheaper to install than is the case for the larger AM stations. The main points of difference between the various systems are noted below.

(a) 40 watt AM System

This is, of course, the cheapest to purchase and install. It is essentially the same transmitter that is now used by the CBC for Low Power Relay Transmitters across the country. The Transmitter is readily procurable on relatively short notice from the manufacturer. In comparison with the 100 and 250 watt AM systems, it has three main shortcomings.

The least of these is its limited range. This is hardly significant.

A more important shortcoming is the fact that it cannot be given a "protected frequency" under the North American Regional Broadcasting Agreement. (The minimum power for a protected frequency is 100 watts). As a result, a 40 watt station might well have to change frequency from time to time as interference to or from powerful southern

stations became intolerable. This is likely to occur more and more in the future, because of the growing number of stations regulated by the Agreement. Such changes of frequency are troublesome. They require an application to the Minister of Communications and the Canadian Radio-Television Commission, which is a time-consuming task.

An additional major shortcoming is the uncertain future of 40 watt AM LPRT's. The C.B.C. (which is the sole user of this equipment) is now experimenting with the possibility of replacing them with FM relay transmitters. If the experiment is successful, it is possible that a number of 40 watt AM LPRT's might become available for community radio stations to purchase as surplus, but the possibility of obtaining parts for them in the future would be quite difficult.

(b) 100 watt AM System

This is a suitable middle-range, and it can be assigned a protected frequency. Its major shortcoming is the fact that transmitters of this power are not now in production. The transmitter cost figures given in the Table are those provided by a manufacturer who designed the model for a market that has since dried up. He is prepared to renew production, but it is doubtful if the new final cost would be lower than that of the 250 watt system now available and, indeed, might even be more expensive.

(c) 250 watt AM System

This gives ample range, and can be ascribed a protected frequency. Its major shortcoming is, of course, its high initial cost. A second shortcoming, curiously, is that existing 250 watt systems are of fairly old-fashioned design (circa 1950). The equipment is adequate but their design does not include such recent developments as miniaturization, solid state circuits, and certain added features that - for example - are incorporated in the 100 watt AM and 250 watt FM models.

(d) 250 watt FM System

This has a relatively short range - which is more affected by topographical conditions. This is its main shortcoming. The problem of a protected frequency does not arise, however, since the Canada-USA FM Agreement and Related Working Arrangement specifies no minimum power for FM stations. Once assigned a channel, the station would receive protection from all stations on related channels. Transmitters are of modern design, and procurement of new equipment and parts does not constitute a problem.

G. Summary of Technical Considerations

1. Technical considerations narrow the choice down to two systems: 250 watt AM, or 250 watt FM. The matter of an unprotected frequency is too serious a disadvantage to qualify the 40 watt AM system, and the procurement difficulties (and possibly relatively high cost) disqualified the 100 watt AM system.
2. The comparative advantages of the 250 watt AM or FM systems are discussed below. The decision is that the 250 watt FM option is preferable.

(a) 250 watt AM system

i. Advantages

- ample range and power
- many residents now own AM receivers

ii. Disadvantages

- higher equipment and engineering costs
- difficulty of installing and maintaining an adequate ground system
- difficulty of increasing power as it becomes necessary
- somewhat outdated design

(b) 250 watt FM system

i. Advantages

- lower costs
- no ground system required
- cheap and easy to increase range
- modern design

ii. Disadvantages

- limited range
- requires nearly all residents to purchase new receivers.

H. Conclusions

1. Both the AM and the FM systems in the 250 watt range are readily procurable, relatively simple to operate and maintain and have protected frequencies. Nevertheless, if only one system is to be adopted - and there are obvious advantages to the use of one system - the 250 watt FM station would be the better choice.

2. There are many communities on Baffin Island, in the District of Keewatin, and on the Arctic Coast, which would meet the general requirements for establishing a service.

PROPOSAL FOR
ESKIMO AND INDIAN AMATEUR RADIO OPERATORS

This proposal considers the possibility of training native people to operate in the amateur service for the benefit of their community.

The Territorial Government might sponsor the selection, training, and equipping of interested young Indians and Eskimos who would then operate an amateur radio service in their own community, using the Eskimo or Indian language primarily. Participation of CBC and MOT and possibly other agencies in this program would, of course, be highly desirable. The service would be used for trading news between northern communities on family matters, community affairs, and subjects of general interest. In rough figures, the total cost per trainee is estimated at probably less than $1500 (including maintenance at $60 a week, transportation at an average $300 and transceiver at $600, but not including the instructor's time).

The proposal has a number of virtues. It offers a simple, powerful, and relatively inexpensive method of breaking down isolation by linking the North and the South, and by linking northern communities themselves. Furthermore, it accomplishes this objective primarily through the actions of individuals, who would simply be assisted by government "to get off the ground". It helps to build up a pool of potential telecommunications employees. It has the advantage of ready communication for emergencies, and it provides a worthwhile, broadening, and fruitful recreation for young persons throughout the North.

The proposal could be developed along the following lines. First, the program itself would be worked out in detail, and news about it circulated among northern communities. Interested young people would be encouraged to participate. They would be required to be enthusiastic, capable, and willing to be trained. They should also have fair proficiency in English, and be willing to operate the equipment

as a hobby. Finally, they should be prepared not only to offer their services to the community at large but also to encourage residents to use the service.

When 5 or 6 young people from different settlements had met these conditions, they would be provided (through the local school teacher) with simple and inexpensive Morse-key training equipment, and basic written instructions in using it. The candidates would be required to develop at home - before taking further technical training - a certain degree of mechanical proficiency with the Morse key. (In practice, Eskimo and Indian amateurs would transmit by voice in their own language, but ability to send and receive Morse Code is required of all amateur operators, but a change in licensing requirements for native people might be possible to waive the need for more training. By training at home on the key, their subsequent technical training outside the community is much shortened.)

Following this "pre-training", the Territorial Government could provide their transportation to a Ministry of Transport installation in a Regional centre in the North (such as Frobisher Bay or Yellowknife), and maintain them there for approximately three months training. Eskimo candidates could be trained by an Eskimo instructor seconded from the Ministry of Transport (who now have two working as radio operators). At the course, each trainee would be supplied (at government expense) with his own radio transceiver in kit form and taught to assemble it. On completion of the course he would be examined and - when granted a certificate - he would be returned to his community with his transceiver to operate on his own as a privately licensed radio amateur. Having built his own transceiver, he will be fully capable of maintaining it and repairing it when necessary, and as a result of the friendship he will already have established with the other trainees on his course (and with Ministry of Transport Regional staff) he will be keenly encouraged to maintain communication with them.

Newly-qualified amateur radio operators, during their first year of operation, are restricted by present regulations to frequencies above 50 megacycles when transmitting by voice. They may, of course, operate in

Morse Code at lower frequencies than 50 megacycles. This raises a problem. Transmissions at frequencies above 50 megacycles have a maximum range of about 30 miles. Thus, radio traffic in voice between settlements would not be possible during the amateur's first year. This is a fairly serious problem, since it means that, during the critical first year of operation when success hangs in the balance, not only may the enthusiasm of the amateur be dampened, but that of community residents as well, since the equipment cannot serve its important function of encouraging "gossiping" between residents of various settlements. Fortunately, the Minister of Communications has authority to exempt Eskimo and Indian amateur radio operators from the application of these regulations.

CHAPTER IV

INTEGRATED BROADCASTING AND INFORMATION SERVICES

by

D.S. Loftus

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by

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Most northern communities lack proper broadcasting and information services. This renders a harsh environmnnt more inhospitable. A Royal Commission on Broadcasting has said that the North is not only silent but forgotten. But at last the technological means are becoming available to bridge this communications void. Before policy and financial commitments are made it is essential to determine northern communication needs and the best mix of technological choices to meet these needs.

It is interesting to look at the North as a consumer of total communication services. Rather than looking at different media choices in isolation it is tempting to enquire if an approach which considers all information sources and their interaction would be helpful in the northern context.

SOCIAL POTENTIAL OF COMMUNICATIONS

The potential of communications for social development in the North has not yet been grasped and pursued. The physical and psychological isolation of living in the North cannot be truly appreciated by a non-resident. If permanent settlement in a number of relatively large communities is to be achieved then the communication amenities of the South must be provided.

The native people need access to communications for their education, training, and the maintenance of their own cultural heritage. They must be able to reach out to adjacent communities, which are separated by great distances, to talk and keep in touch with their families and friends. Their integration into the main

stream of the Canadian milieu will be difficult. It may involve their re-settlement or travel to the large northern centres such as Yellowknife and Frobisher Bay. This transition can be helped if they and the people left behind in the smaller settlements are not to be separated by both distance and silence.

The ownership, provision, operation, and maintenance of communications facilities offers a fertile field for native employment, expression, and development. Vocational schools are beginning to turn out native technicians who are ready for employment in the communications field.

COMMUNICATION NEEDS

There are two areas of communication needs in the North. First, there is a requirement for telecommunication services to permit point-to-point communication between communities. Telecommunication facilities for this purpose are functional and serve for the conveyance of messages by the public, industry, and government agencies.* Beyond this basic need there is a requirement to provide communications of the type mostly identified with broadcasting; but more precisely, this communication need covers the spread of information of all types in the oral, visual, and written form.

The North, to be kept adequately informed, must have access to all means of communication. This includes radio, television, mail, newspapers and periodicals, books, films, computers, video and audio tapes, records, and even gossip. It is useful to review the availability of information sources in the North to appreciate the magnitude of the challenge that access to new or improved service entails.

1. Radio

The first and most basic means of mass communication in the North is radio. Radio broadcasts are of prime importance to people living in small isolated communities

* Telecommission Study Volume III- Northern Communication Requirements.

scattered over a vast area with few newspapers and little entertainment. It provides them with information on weather, road and flight conditions, health, fire and flood warning, entertainment; and community, regional and national news and comments. The only problem is that it is not always available. The following requirements have been identified for the extension of network radio service on a geographical basis in the North:

(a) extension of the Mackenzie network to the eastward to cover the western Arctic - with Inuvik as the program centre;

(b) a new regional network to cover the large Indian population of northern Manitoba - possibly from a program centre at The Pas;

(c) a regional network originating at Churchill to cover the Keewatin communities;

(d) a French regional network to cover the eastern shore of Hudson Bay and northern Quebec;

(e) extension of the Labrador network to cover communities along the Labrador Coast;

(f) a regional network for the east coast of Baffin Island and the communities on the Arctic Coast.

2. Television

The capability to transmit television does not exist in the Yukon or Northwest Territories, or in many areas of the northern parts of the Provinces now. It should be noted that the Eskimo and Indian people of the North have not so far expressed a priority need for the reception of television programs in their communities. Their main concern, if live television is brought to them, is that the program material should be suitable for their culture and education. However, it is probable that the younger generation of native people

will respond to television if the programming problem can be solved.

The need for live television has been stressed by northern residents who come from the South, and particularly by industry, to encourage longer turn arounds of labour forces. The requirement for live television is evident in those communities having frontier package service because delayed programs have not been well received.

3. Information Services

Survey trips to many parts of the North have indicated that there is an unstated but definite need for educational and information facilities such as films, books, video and audio tapes, newspapers, and prompt delivery of mail. No attempt has been made to ensure that these amenities are systematically distributed throughout the North.

Another area that should not be ignored is the need for telecommunication systems to allow the people of the North to communicate with each other intra-regionally. What is needed is simply a type of gossip network that provides an information need that is not met by normal telephone or teletype communications.

POSSIBLE SOLUTIONS

The possibility of improving and consolidating various northern communications services is discussed below.

(1) Radio

Two essential needs are to bring reliable network services to northern settlements and to establish the means for local or community programming. Chapter III of this volume discusses the details of establishing local broadcast stations that are not network connected. This leaves two

open questions: (i) how can the isolated local community stations be network connected, and (ii) what can be done about the existing CBC Low Power Relay Transmitters (LPRT) that are network connected but have no local injection option.

(a) Network Connections

There is the problem of connecting local or community broadcast stations, as discussed in Chapter III, to regional and national radio networks. The reason why many communities of sizable populations are not connected now is that the transmission capability for carrying the radio programming simply does not exist. The ANIK satellite offers a solution to this problem. It was noted in Volume 3 of the Telecommission Study that point-to-point communications for telephony and data services are the first priority for improved northern communications. In areas of the North such as the District of Keewatin, Baffin Island, and Arctic Quebec, the satellite may have to be used as the only economic way of bringing reliable communications to isolated communities.

Some consideration has been given in Volume 6 of the Telecommission Study to the installation of small earth stations capable of transmitting one or two telephone channels to the master station at Toronto. If it is decided to proceed with these stations, it is an incremental cost to ensure that each small earth station also has the capability to receive a radio channel. It cannot be over-emphasized that a radio program channel to these communities should be provided at the same time that provision is made for general communications services.

There is also the problem of originating broadcasts from the North. There is no reason why the transmit telephony channel at the small earth stations should not be used for originating program material occasionally from remote communities in the North. Of course, the quality would be degraded since the bandwidth would be in the order of 4 KHz instead of 8 KHz for standard

broadcast quality. But since local broadcasts from small communities would not take place very often this would be tolerable,

(b) Local Programming on LPRT Stations

Presently the CBC LPRT stations are network connected without the means for the local injection of community news, information, and entertainment. There are a number of northern networks connecting LPRT stations but the program origination is at central points. As an example the Yukon network consists of stations at Fort Nelson, Watson Lake, Swift River, Cassiar (B.C.), Teslin, Haines Junction, Destruction Bay, Beaver Creek, Dawson City, Carmacks, Mayo, Elsa, and Whitehorse. All the programming emanates from Whitehorse and the capability does not exist for the other communities to inject their own local affairs for the benefit of people resident in these communities. Local information of a parochial nature is not of great interest for network distribution. A combination of network and local community broadcasting would be ideal.

This suggestion has policy and financial ramifications. The CBC LPRT network was established to keep costs to a minimum while providing a reasonable quality of broadcast services. The suggestion that local injection at the community level be permitted requires a change in operation of the LPRT network. The stations would have to be manned during the local broadcasts and small studios would be required to house the equipment for broadcasters. But a few local communities are in a position to build or maintain their own studios and arrangements could be made for them to share the LPRT services. This might require agreement between the Community Council or other elected bodies and the Canadian Broadcasting Corporation.

Approval would also be required from the Canadian Radio-Television Commission to permit the changed operation of the LPRT networks.

One of the factors in support of a combined Community-CBC operation is that the need for native organizations to establish their own private networks would be avoided. There is no doubt that the pressure for private networks will intensify unless action is taken to provide a public network by the CBC that is responsive to native needs and aspirations. This alone might be sufficient to counter arguments that the cost of adding local injection to LPRT networks is prohibitive.

(c) Short Wave Service

The CBC operates a short wave service to the North which, in the view of many northern residents, does not provide sufficient and reliable coverage. The suggestion has been made that attempts be made to enhance the signal level of short wave broadcasts and to use the service itself as a more effective medium for serving the North.

(2) Television

It will be some time before direct broadcasting of television signals can be received on home receivers. Until then the programs transmitted by ANIK will have to be picked up by ground receiving stations for broadcasting on a local television station. Only those with home receivers within the broadcast area of the local television station will receive the programs. Present planning is to establish earth receiving stations at all northern communities presently served by frontier coverage package service. In this way the majority of the people in the North will be served; although this means that there will be many more earth receiving stations in the Yukon and western parts of the Northwest Territories.

Service by satellite will introduce programming

problems. The northerners have indicated that they are not content to receive television programs produced for the people of Toronto, Winnipeg, or Vancouver. The native peoples consider these programs of doubtful value. If the television service is to meet the needs and wishes of the people of the North, native-born Eskimo, Indian, Metis, and White, as well as the transient population, it should be a mixture of local, regional, and national programs as provided by the CBC in other regions of Canada. The way to meet this northern regional need is to use one channel of ANIK especially for this purpose. A production centre for northern programs might be established in the North to transmit programs to the satellite for distribution.

It would appear that the most logical place for this centre would be Yellowknife. Yellowknife is on Mountain Standard Time, which is the medium zone of the five time zones in the North. It would be a convenient centre for receiving programs shipped from other stations of the northern service - Whitehorse, Inuvik, Churchill and Frobisher Bay. These stations should have a limited capacity to produce local video tape programs to ensure that Yellowknife and the Mackenzie District did not monopolize programming in the North.

(3) Information Services

Several trips to Labrador, Baffin Island, the Arctic Coast, Keewatin District, the Yukon and the Mackenzie Delta region indicate that there is a need for educational and informational facilities such as films and video tape recorders (VTR). The availability of a film service would provide many dividends. It is apparent that films of any kind, when shown to northern audiences, receive enthusiastic response. It is important that the community rather than

a teacher or entrepreneur should decide the type of films to be distributed between communities. Selection has to be done through consultation with community leaders and Councils. An attempt should be made to reach all residents with material of direct interest to them.

Package programs could also be made available on video tape. This is particularly important for educational purposes. Prepackaged lessons and information programs could be made available and exchanged between communities. These programs could be supplemented with printed lessons or follow-up material as suggested for radio. This medium might prove to be an improvement over radio because of the possibilities of visual presentation and repetition of the material.

Considerable work could be done on the dissemination of a wide variety of books on a broad range of subjects. It is clear that in the school libraries visited in northern communities, there are not sufficient books to interest all adults and many of the children. The best service would probably be by air.

Departments of education could make more use of educational technology both in schools and in the general community, particularly radio, TV, VTR, and sound cassets. Each community could regard the school as a community centre, equipped with a range of resources such as books, pictures, slides, cassets, records, etc. The educational experience must be made more flexible, less confined to the class room, making more use of the general environment.

Regional production and distribution centres could be created to serve educational needs, perhaps in cooperation with southern university centres. Also research in specific problems could be undertaken with cooperation between northern communities and southern research facilities.

Of particular importance to an adequate total information service is the need to present material on preventive medicine.

In many regions with small isolated settlements provision of medical care is of necessity a communication and transportation problem. An educational program of preventative medicine by dissemination of literature, VTR programs, or by radio, would serve an invaluable purpose.

The importance of using native languages is important so that families can keep in touch with each other. It is oral communication that is so essential. In addition, educational, economic and linguistic patterns must be kept in mind. Appreciation must be taken of the variety of native dialects. The dissemination of programs of Eskimo and Indian languages could go a long way towards introducing an element of uniformity in language across the North. Some consideration should also be given to the need for communities to communicate with each other outside conventional television connections. This possibility is explored in Chapter III of this Report, where a scheme for training native radio amateur operators is proposed.

(4) Computers

Experiments have been undertaken by the University of Western Ontario to provide computer assisted education courses at Inuvik from a central computer in London, Ontario. The possibility of using the computer for educational purposes and for information retrieval requires reliable transmission networks. This means that the Eastern and Central Arctic cannot make use of these facilities. However, communities equipped to receive telephony by satellite could be easily adapted for this purpose.

INTEGRATED INFORMATION AND BROADCASTING SERVICES

There are possibilities that have not yet been explored for the integration of broadcasting and information services of the types discussed above. There is the thought that program tapes, either audio or video, could be distributed around communities

in the North after they have been used for regular programming. The northern service of the CBC presents many programs over the northern network which could be sent around communities if suitable arrangements were made. Each community would need playback apparatus. The use of program tapes would be a valuable tool fir educational purposes. Cooperative arrangements between the CBC and the Territorial Government might be encouraged. Another possibility is that communities could generate material on video tape which could be suitable for transmission by the CBC at a later date. This might be a cheap source of program material for northern broadcasting.

CONCLUSIONS

An integrated approach to the use of information media offers perspective, and perhaps direction, to the evolution of northern communications, It might offer a framework for the planning of telecommunication services and ensure that social needs are fully taken into account in the planning process.

Particular emphasis is given to the use of broadcasting as an instrument of social and educational development. This may be a utopian premise since it has largely failed in this role in southern Canada. But the situation in the North is different because the indigenous northern residents need special programming to realise their potential and aspirations.

Three factors combine to make the possibility of a total approach to northern communications thinkable. First, the increasingly important role of the Territorial Government offers a focus for coordinated action. Second, the recently created Department of Communications can act as a federal catalyst to stimulate northern communications on a broad front. Finally, transmission capability will shortly exist to extend voice, data, and television services to the North at high, but incremental, costs.