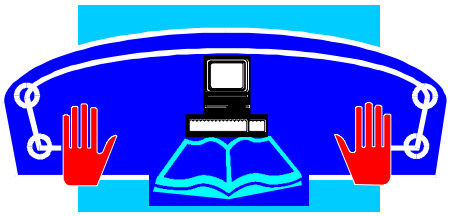

WORKING DRAFT - IGLOOLIK SCIENTIFIC RESOURCE CENTRE: AS ASSESSMENT

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WORKING DRAFT

IGLOOLIK SCIENTIFIC RESOURCE CENTRE: AN ASSESSMENT

prepared for the
Social Research Division,
ent of Indian Affairs
hern Development

Tom Espie
November 1980

CONTENTS

THE FACILITY

A. Origins and History

The Scientific Resource Centre at Igloolik is one of two such centres established and maintained in the Northwest Territories by the Department of Indian Affairs and Northern Development. The other centre is located at Inuvik in the Mackenzie Delta.

The Inuvik facility was opened in 1964 and from its earliest days was much utilized by scientists working in the Delta area.

In 1968 the Scientific Research Committee of the interdepartmental Advisory Committee on Northern Development (ACND) reported that the Inuvik centre had proved highly successful and that universities, government agencies, and private industry had found it a most valuable adjunct to their work in the North.

The Inuvik Centre, in fact, has its origin in a 1960 recommendation from the ACND that a range of scientific centres should be established in the North. Eight years later reviewing experience with the first successful experiment in Inuvik, and in the light of current emphasis on northern development, it was deemed appropriate to proceed with the original ACND recommendation to establish a range of such centres. A facilty to serve the Eastern Arctic seined the most logical next step.

In August 1971 the Scientific Research Committee of ACND again drew attention to the need for more research facilities in the Arctic notably in the Eastern Arctic. A report circulated to members contained the following comments which are illuminating, both in the light they throw on the underlying rationale for the establishment of such facilities as the Inuvik and Igloolik

C Dungeness
C Rennell
Gifford Pt
C William Herschel
Fellfoot Pt
Prince Leopold I
C Clarence
Cape York
C Admiral M'Clintock
SOMERSET
ISLAND
Fury Pt
Cape Garry
BRODEUR
C Kaye
Cape Kater
PENINSULA
F R A N K L I N
C Hay
Cape Liverpool
C Bryam Martin
Cape Walter Bathurst
BYLOT ISLAND
Cape Burney
Cape Graham Moore
C Charles Yorke
C Crauford
Cape Joy
Arctic Bay
BORDEN
PENINSULA
Yeoman I
Pond Inlet
Eclipse Sound
Cape Weld
Cape Macculloch
Cape Coutts
Nova Zembla I
Cape Jameson
Cape Cargenholm
Cape Hunter
Cape Adair
B A F F I N
BARNES
ICE CAP
3655
Cape Scoresby
C Hevtesbury
Cape Airy
Leah Pt
Morin Point
Van Koenig Pt
GULF
Easter Cape
BOOTHIA
C Palmerston
C Landry
1950
PENINSULA
OF
2080
Crown Prince Frederik I
C Margaret
Cape Englefield
Ormonde I
Jens Munk I
Koch I
C Jensen
Bray Island
Longstaff Bluff
Baird Peninsula
Astronomical Society Is
Cape Kjer
BOOTHIA
Igloolik
Pinger Point
Rowley Island
Foley Island
Kull I
Spence Bay
SNPMTr
Harrison Is
Cape Chapman
Hall Beach
NPMTr
North Spicer I
Prince Charles Island
C Berens
Simpson
Helen
Peninsula
Cape Richardson
SCARP
MELVILLE
Amitioke Pen
South Spicer I
Erа Island
Poole Pt
Acland Pt
Pelly Bay
Mackar Inlet
1850
C James Anderson
C Lady Simpson
Cape Jermain
F O X E
Cape Selkirk
Wales Island
C Robert Brown
C Penrhyn
Gravell Point
PENINSULA
C Weynton
C McTavish
B A S I N
ARCTIC CIRCLE
CERCLE POLAIRE
Barclay
Cape Wilson
Pt Elizabeth
T E R R I T O R I E S
Rae
Isthmus
Repulse Bay
Winter Island
C Martineau
Sturges Islands
1950
Beach Point
Cape Munn
Opposite I
Cape Baffin
Cape Dorchester
Nuwata
Wager Bay
Cape Welsford
C Bylot
Comfort
D I S T R I C T
Cape Queen
Cape Fisher
King Charles C
Cape Dobbs
2050
SOUTHAMPTON
ISLAND
Coral Harbour
SNPMTr
Caribou
Terror Point
EAST BAY
BIRD SANCTUARY
Seahorse Point
Yellow Bluff

centres, and on the selection of Igloolik as the site of the second to be built.

..."there is a plethora of research facilities scattered throughout the North. It appears that any agency intending to work in the North has, either fran inclination or necessity, established itself in the North according to its needs of the moment. This has encouraged a whole series of separate studies, carried out according to limited plans and often with limited facilities. Such a piece-real approach carries with it poor prospects for describing an area fully, minimum continuity of records, and no chance of f ostering the sort of interdisciplinary studies that are becoming increasingly important. It is a wasteful and ineffective way of supporting research, resulting in duplication and unnecessary effort in a part of the country where duplication and effort are exceptionally expensive. On the other hand, the locations where even limited laboratory facilities and other support are available to the scientist who has a continuing year round pro ject, or who is interested in reducing the time involved in administrative support rather than research are very few. Great expanses of the North have no services whatsoever of this kind. The Eastern Arctic, which has a substantial native population, has been almost completely neglected. A small general purpose laboratory in this area, where scientists could secure some scientific support and use as a base, would appear to have a high priority. "

On the basis of this report the Minister for Indian Affairs and Northern Development approved construction of a general purpose

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laboratory in Igloolik to serve the Eastern Arctic. Building commenced in 1973 and was completed in the winter of 1974-75.

In reviewing the operation of the Igloolik facility, and in moving to an assessment of the utility of its operation in the last five years, it is most important to take stock of what role it was intended to play at the time of its establishment.

In 1974 government and private agencies concerned with the North accepted that the existing spate of developmental activity would increase rather than diminish in the next decade. It was recognized that the available base of scientific knowledge was not sufficient to support this activity or to permit the kind of limiting and regulatory measures that would be needed to ensure that it had the minimum disruptive impact on the physical and social environment.

Wisely the concerned government agencies, through the mechanism of ACND, accepted the following policy points:

1. That there was a pressing and urgent national need for an increased volume of research activity in the north in the physical and social sciences.
2. That for individual government departments to mount their own individual research places would maximise costs and substantially reduce the opportunity for inter-disciplinary cross fertilization of research findings.
3. That a coordinated effort in the research field was the optimum approach, both from economic and professional viewpoints.

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4. That to give substance to this coordination a system of supportive facilities would be needed consisting of:

   a) permanent general purpose laboratories, such as those in Inuvik and Igloolik, capable of sustaining a wide range of year round activities and acting as facilitators and back up for field work.

   b) Out stations in fixed locations.

   c) Mobile research stations.

   d) A network of data-collecting outposts.

   e) Specially equipped ships and aircraft.

5. That ACND, via its Working Group on Scientific Research Facilities in the North, should be the agency responsible for the provision of the strategy coordinating component of research programs and integrating their activities.

6. That DIAND via its Social Development Branch should be the agency which would put together and maintain the range of needed supportive facilities.

The system of facilities envisaged was viewed as a positive incentive to universities and private agencies to increase their research activities in northern Canada, making a substantial contribution to development in the area, enhancing Canadian sovereignty in the North, and providing increased employment opportunities for the native people.

In order to make what was envisaged a reality, four underlying basis assumptions were rode:

1. Federal departments which as members of ACND had endorsed

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the original concept should support it by not seeking funds to establish their own research facilities in the North.

2. DIAND should: a.) mike provision and maintenance of the facilities a departmental activity, and b.) acting, in this context, as the impartial agent of all ACND members, give no special priorities to its own programing.

3. Treasury Board should endorse the importance of the total pro ject and make available to DIAND the requisite funds with full understanding of the fact that, again, in this context, DIAND would be operating on behalf of all ACND member departments.

4. ACND via its Working Group on Scientific Research Facilities in the North should play an active and positive role in coordinating the research program of departments, universities and other agencies active in the North.

To a very large extent the history of the Igloolik Scientific Resource Centre has been shaped by the fact that the expectations on which these assumptions were based have remained, to a large extent, unfulfilled.

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B. The Facility Itself

The Minister of Indian Affairs and Northern Development, Mr. Chrétien, having assented to construction of the Resource Centre at Igloolik, the contract was awarded to a prominent firm of Montreal architects.

Their design was imaginative, innovative, and functional. The company had made something of a house speciality of instructing buildings in the North utilising prefabricated panels of weather resistant plastic filled with plastic foam as insulation. This technique was applied to the Igloolik design.

The intention was to provide a complex of working laboratories, off ices, library etc. which would permit, indeed stimulate, interaction between researchers. In order to achieve this a circular format was decided upon so that all laboratories and offices had window space for light and observation, and also had access onto a central concourse which could be utilised as meeting place, recreation area, and lecture hall.

Because outward visual observation of weather etc. was regarded as important, it was necessary to raise this circular area some distance above ground level. Thus the basic "doughnut" shaped structure was placed atop a supportive central trunk which itself was used to house utilities.

The result was a visually exciting and aesthetically pleasing structure which various observers have compared to a flattened door-knob, a mushroom and even a flying saucer.

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It was, at the time of construction, and probably remains, the most striking architectural design in the Northwest Territories. Certainly, it is the most original building in Igloolik, and, sited where it is, on a height of land in the centre of the settlement, daninates Igloolik from whatever angle it is observed.

Access is gained via a doorway set in the trunk - the stem of the "mushroom" - and a staircase leads to the working area .

There are three separate laboratories together with adequate office space, a dark room, and a library. One of the laboratories is equipped with a fume hood.

There are basic facilities for all kinds of scientific research, zoological, physiological, chamical, geological, etc.

Scientific equipment includes balances, microscopes, stills, a centrifuge, a drying oven, spectro photometers, and an ergometer. In the dark room there is a full range of photographic equipment including enlarger, copying stand, water filter, print dryers, guillotines together with trays chemicals etc.

This range of equip-rent may be amplified by the acquisition or loan of more specialized equipment, if warranted, when researchers who plan on utilizing the Centre request it, giving adequate notice.

Office equipment is very adequate and includes a Hewlett Packard Computer (Model 46). The library is extensive, including a representative sampling of standard scientific references, together with an excellent selection of texts and professional journals dealing with the north.

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A complete inventory of all major item is attached as Appendix "A".

Toilet facilities feature innovative electric "humus" type toilets.

Apart f ran the central core itself there are available to visiting researchers three housing units containing basic furniture and housekeeping facilities.

One of the prime functions of the Centre is to serve as a base for researchers who intend doing most of their work in the field. To support this kind of activity a range of automotive equipment is maintained, (see Appendix "A") together with supplies of special clothing items (including several sets of complete caribou clothing hand-made by local Inuit crafts women) and also a good selection of communications equipment so that researchers in the field can maintain continual contact with base in Igloolik.

These last considerations is of key importance in the arctic where harsh and unpredictable weather conditions and large predators introduce a degree of hazard into field work.

The Igloolik Centre is, of course, very far removed geographically f rom main population centres. An excellent range of communication facilities at the Centre means that, in mite of this isolation, researchers using the Centre have access to major communications ne tworks . Radio and telephone links are supplemented by a Dex Unit which means that f acs tile reception or transmission of documentary materials is also possible.

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Two warehouses, and a workshop area are used to store and maintain a wide range of automotive equipments, hats, engines, and camping gear to assist researchers in their field operations.

A second important function of the Igloolik Centre is to collect data, on an ongoing basis, for various scientific agencies of the Federal Government. These include:

1. Seismographic data for the Earth Physics Branch of Energy, Mines and Resources Canada.
2. Particulate data for the Atmospheric Environment Branch of Environment Canada.
3. Meteoroligical Data for Environment Canada.

Instrumentation for the first and second of these programs is lodged in the main building. Data fcr the third program are collected by instruments located within a fenced compound sited in the village of Igloolik itself.

Two other component units of the Igloolik Centre must be noted. One is the residence of the Scientist in charge who manages the Centre; the other is the Centre's only out station at Sarcpa Lake, which has been frequently utilized as a field base by visiting scientists.

All units comprising the Igloolik Scientific Resource Centre are in very good physical condition and very well maintained.

The houses which are used by researchers provide very adequate accommodation for four or five researchers each.

The warehouses and workshops are kept in good order.

The main core building itself reflects an energetic and continuing program of maintenance affecting the physical plant and the equipment it houses .

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C. Conclusions

As noted earlier the Igloolik Scientific Resource Centre was established on the initiative of ACND as one integral part of a proposed system of supportive facilities which would sustain a coordinated northern research effort to be mounted by Canadian universities, private agencies, and the Federal Government .

The selection of Igloolik as the site of the new facility was a wise one, providing access to an area rich in terrestrial and marine flora and fauna and also in the vicinity of some of the most long established centres of Inuit culture.

The design and construction of the main facility itself were not only efficiently functional but innovative and aesthetically exciting to such a degree that it was interpreted by many as an aPt symbol of a new Federal committment to science in the North.

The auxiliary structures and equipment were sensibly planned and put together so that the total facility had the capacity to fulfill thoroughly the role that was envisaged by the members of ACND when it was originally conceived.

Energetic and intelligent management - for which the Scientist in charge Dr. Andris Rode must be given very considerable credit - resulted in excellent standards of maintenance for all plant and equipment. In the five years since its inauguration the Centre has Possessed the potential of playing a significant and much needed role in the kind of vigorous and multifaceted program of arctic research that ACND had in mind when establishment of the facility was first proposed.

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In the five years of its history the centre has only in part realized this potential.

In a nutshell, utilization has been fractional.

Why has this proved to be the case?

A strong contributive factor has keen that several of the expectations of ACND when it proposed the new coordinated northern research effort have not been fulfilled. (c.f. pages 4-5).

Thus :

1. Sane departments, rankers of ACND, have mounted programs of northern research dedicated to their own departmental concerns.
2. Treasury Board has not made funds available to DIAND to underwrite expansion of the network of facilities originally envisaged by ACND.
3. ACND has not played the coordinating role with regard to northern research that was anticipated.

Table I is not intended to indicate the total proportion of budget assigned by departments to all research in the north. It is concerned only with "short range research."[1] Nevertheless, it series as an index of the comparative level of priority assigned by these departments - the only departments cited-to research in the north.

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1. Table I, from Annual Northern Expenditure Plan. DIAND is restricted to research expenditures under this heading. No definition is available.

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TABLE I

Expenditure in the North by Agency on Short Range Research

$000's

	1974 - 75 (Actual)	75 - 76 (Actual)	76 - 77 (Actual)	77 - 78 (Actual)	78 - 79 (Forecast)	79 - 80 (Planned)
Central Mortgage and Housing	28	48	12		32	58
Energy Mines and Resources	4,084	4,657	4,502	5,868	7,157	6,430
Fisheries and Environment	5,800	6,057	6,014	5,560	5,383	7,265
Indian and Northern Affairs	3,786	3,625	3,301	3,573	1,643	1.574
National Defence	3,758	3,277	2,677	2,874	3,088	3,529
TOTAL	17,456	17,664	16,506	17,875	1~303	18,856

Source: Annual Northern Expenditure Plan. 77 - 79 and 79 - 80. DIAND. Ottawa.

If allowance is made for inflation, in the period covered, only two departments have increased expenditures on short range northern research, i.e. CMHC, an increase of 35%, and EMR, an increase of 1%. All other departments reduced expenditure on short range northern research, i.e. FE a reduction of 19%, INA a reduction of 73%, and DND a reduction of 40%.

For practical purposes the Igloolik Centre - with its one outpost at Sa-rcpa Lake - has remained an isolated facility. The research programs which it has played an essential part in supporting have conceived, planned, and conducted on the initiative of individual academics and individual agencies, not as integrated components in a planned, coordinated, multidisciplinary northern research thrust.

Of course, there is one particular and crucial factor which has, without doubt, played a critically determinative role in the stultification of the expectations entertained by ACND at the time of the Igloolik Centre's establishment, and that is the shortage of funding which has restricted so many other governmental activities.

Nevertheless, in spite of the scarcity of funds, a considerable volume of in house research has been undertaken in the North in the last five years.

Further, the reduction in Federal funding of northern research has not been as drastic as it might have keen. Allowing for inflation, the total expenditures on short range research still represents an effective 70% of what it was five years ago. Even within these limitations much could have been, and can be, accomplished.

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ACND's original rationale for the setting in place of an integrated system of northern research support facilities and a coordinated research thrust was based, to a very large extent, on the assumption that this approach would be more economical than the previously existing uncoordinated "piece-meal" approach. It would, therefore, follow that the more stringent the financial circumstances the more urgent became the reasons for accepting the rationale.

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I I ANALYSIS OF PAST AND CURRENT USAGE

A. Support of Scientific Research

From its earliest days the Igloolik Centre according to records available has demonstrated the capacity to provide a wide range of support to scientists visiting the area.

As intended the support has consisted of the following:

1. Advice via correspondence regarding areas for research, feasibility of research design, appropriate clothing and equipment etc. ,
2. Local transportation from air strip to accommodation and vice versa;
3. Provision of accommodation when warranted;
4. Use of laboratory facilities, offices, dark-room, library;
5. Assis tance with transportation to and f ran field site;
6. Assistance in maintenance of field camp;
7. Maintenance of radio link on the field camps to ensure security and safety;
8. Provision of field equipment, special clothing;
9. Assistance in continuing data collection;
10. Assistance in obtaining local guides interpreters etc.

of course, not all visiting researchers have utilized the full range of assistance. Nevertheless, all mentioned varieties of as sistances have been provided and, to j udge by correspondence on file, have been much appreciated.

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Perhaps the most utilized have been the advice and transportation functions.

Utilization of the three well equipped and maintained laboratories has been less than anticipated. There has been some degree of utilization, but a very common pattern has been for scientists to arrive, set out for a field cap, collect specimens and data, them depart for their own laboratories in the south to analyse specimens and/or data.

In broad term utilization of the excellent and well maintained facilities at Igloolik has been disappointing.

Review of available usage records covering a five year period fran the Centre's earliest days in the fall of 1974 to the fall of 1979 indicates that there were 21 distinct "user-initiatives."[1]

Of these twenty-em, thirteen were f rom universities, involving nine different universities, two were fran community colleges, five were f ran agencies of government, involving three different agencies and one was from a museum overseas.

This latter initiative from a Ms. S .M. Pearce of a museum in Exeter England, aimed at getting background information for a exhibition of old Inuit artifacts, was , in fact, the only instance of use by a non-Canadian investigator.

The largest proportion of the studies conducted were in the physical sciences. Three studies focused on plant life, three on animal life, and one on the general ecology of the area. Two studies were concerned with soil, two with sea water, and two with

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1. Here the phrase "user-initiative" refers to one particular separate piece of research undertaken on the initiative of an individual researcher, or agency, which may or may not, over the, involve subordinate or component research projects.

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air pollutants.

Eight studies were concerned with various aspects of Inuit life, one with ethnography, one with clothing, one with language, one with drum dances, one with artifacts, one with recreation, one a nth.topological study of group behaviour patterns and one with diet.

These figures are somewhat misleading in two different ways.

Firstly, it must be recognised that while some of these studies were serious long term enquiries others involved very brief visits with relatively superficial investigation.

One study, for example, initiated by Dr. Tony Chapman of Dalhousie University , aimed at determining how kelp survives and grows under adverse temperature and light conditions, involved frequent visits over a period of a year by Dr. Chapman and assistants.

On the other hand the study already mentioned by Ms. Pearce of Exeter involved a stay of only four days.

Secondly, one particular initiative, that associated with Dr. Martin Lewis of York University concerning the general ecology of the area, although counted as one item has in fact been a major involvement.

Dr. Lewis first utilized the Centre in 1976 when he visited it with four students. In 1977 he returned and stayed through the summer with twenty students, leaving one to work on through the winter. He returned in the summer of 1978 with six graduate students and in 1979 with three students.

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Dr. Lewis stands out as the largest single user of the Igloolik facilities and there is little doubt that the numerous studies of the ecology undertaken by his students represent a large volume of work.

So preponderant has been Dr. Lewis' usage that of an approximate 1,030 researcher/weeks' of usage over the five year period under review, Dr. Lewis and his students account for 720 - something like three quarters.

Without Dr. Lewis' students there would have been 1 researcher/year of usage per year during the five year period; with them this figure rises to nearly 4 researcher/years of usage per year.

Bearing in mind that the Igloolik Centre has three laboratories with adequate space for two or three researchers, and also that a very high proportion of the researcher/years recorded actually represent time spent by investigators in the field, it is evident that the laboratory facilities themselves have been little used. However, the services offered by the Centre as a whole have been utilized to a greater degree, primarily by students, the majority of which have been from one particular university department.

In assessing the support given by the Centre to investigations carried out by visiting scientists, it would seem appropriate to review the subject matter of these studies.

After all the Igloolik Centre was originally established and has been maintained by the Federal Government on the assumption that it

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was a necessary adjunct to a national program of northern research.

Government sources have been quite explicit shut the kinds of research that should be emphasized in this program.

The Honorable Hugh Faulkner at the time Minister of Indian and Northern Affairs in a speech on northern research priorities given to the Association of Canadian Universities for Northern Studies at Chicoutimi in April 1978 asked:

"What can be done to improve the living conditions of people living in the North?"

And then went to provide the answer:

"We must give paramount consideration to the benefits - in the fields of technology, the environment or resource development - which research can bring to the people of Northern Canada. This is the main objective of the federal government and one to which it gives the highest priority."

In this instance the Minister was endorsing the direction which had earlier been recommended by the Science Council of Canada[1]. which had recommended a list of priorities for northern research which included the following:

1. Aids to development at the community level
2. Health and dental care
3. Nutrition
4. Housing
5. Municipal Services

1. Science Council of Canada. Northward Looking: A Strategy and a Science Policy for Northern Development. Ottawa . 1977. passim.

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6. Renewable resources e.g.

a.) whitefish

b.) caribou

c.) narwhals

d.) muskoxen

e.) soil

Only a small proportion of the research undertaken at the Igloolik Centre clearly meets the above criteria.

None of the twenty research initiatives can be considered as having any direct bearing on development at the community level.

Only one study was conducted in the broad area of health. That was concerned with the nutritional component of Inuit diet and was initiated by Dr. Ellestad Sayed of the University of Manitoba in 1976.

One study undertaken in the sinner of 1978 had application to northern housing. This consisted in testing and evaluating the properties of soils as they would affect construction in the Igloolik area, and was conducted by Mr. C. Sopher of Seneca College.

No research had direct application to municipal services.

Although a high proportion of the studies were in the broad area of the bio-sciences, surprisingly f ew had direct relevance to the renewable resources sustaining native northerners.

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For example, although Igloolik is in an area rich in marine wildlife, there were no studies of seals, walrus, arctic char.

There were, in all, six studies of animal life. One was on soil mites, one on lemmings, and one, conducted in 1979 by Ms. Kathleen Newell of Canadian Wildlife Service with six assistants, was concerned with geese.

The other three studies were conducted by students of Dr. Lewis' of York University.

One by Mr. D. Hogan involved meeting with the Hunters and Trappers Association to discuss the wildlife population and collecting sample specimens thereof.

Another by Mr. E. Spearling involved construction of a mathematical model of the local wildlife population.

A third by Mr. C. O'Brien and Mr. H. Stevens involved locating the sites of birds of prey and caribou population.

Of these only the Canadian Wildlife Service study can be considered as having any significant relevance to the kind of wildlife utilized by local people.

Thus during the five years under review only three studies seem to have fully satisfied the kind of criteria established by the then Minister of Indian Affairs and Northern Development and the Science Council of Canada.

Other studies, although not directly satisfying the criteria have some degree of relevance. The kelp study undertaken by Dr. Chapman of Dalhousie University, and the study of the characteristics

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of Arctic waters with varying degrees of ice cover in Fury and Hecla Strait by the Defence Research Establishment would have some bearing on marine renewable resources.

A large number of studies were concerned with various aspects of the natural environment and, in so far as the resources harvested by native people are part of and sustained by the totality of the ecosystem, all must be assigned some degree of relevance.

All the studies conducted by students of Dr. Lewis would fall into this category. Others would be the study of ground vegetation in different habitats by Ms. Anne Carstairs of McGill University, the study by Ms. Agneta Burton for Atmospheric Environmental Service (Department of Environment) of the prevalence and rate of loss of heavy metals in high Arctic plants, and soil studies by Mr. Colin Crampton of Simon Fraser University.

Another highly professional study, although not falling directly into the categories mentioned by the Science Council of Canada, would seen to have the kind of relevance to the daily life of northerners the Minister clearly had in mind. That is the study conducted by the Defence and Civil Institute of Environmental Medecine of physiological cooling in man exposed to various Arctic winter conditions.

In spite of these reservations only a very small proportion of the research conducted at the Igloolik Centre has been the kind of basic pragmatic enquire<' that Peter Larkin of the Science Council of Canada had in mind when he wrote:

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..."most of the research that is needed in the north is rather pedestrian but basic stuff. Where do the white fish come from that spawn near the mouth of the Mackenzie? What are the seaward migrations of Arctic char f rom Pond Inlet? What determines where the caribou will go? What is a safe harvest of narwhals? Where are the best stands of timber? What kind of soils are found near Fort Smith? How can you best transplant musk oxen in the North?"[1].

1. Peter Larkin. Science and the North: An Essay on Aspirations. Science Council of Canada. Ottawa. 1976. p. 24.

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B. Continuing Programs of Scientific Data Collection

When the original commitment was made by the Federal Government on the basis of ACND's recommendation, to proceed with the establishment of the Igloolik facility, it was conceived as has been pointed out, as part of an "integrated scientific support system" which included as one of its components a network of small data collecting stations some of which might be located with operations such as the Igloolik Centre.

The operation of this network was considered a separate activity f rom the support of scientific research, although clearly enough the two would be assumed to have important interconnections.

The Igloolik Centre, as does the Inuvik Centre, maintains several data collecting and monitoring programs. These programs are undertaken by the centre, on a no-fee basis, on behalf of various agencies of government, and, in fact, represent the most significant scientific attributions of the Igloolik Centre.

The programs are:

1. Seismography:

Data is collected for the Earth Physics Branch of Energy, Mines and Resources Canada. The vault, 4 feet in diameter and 2 feet high, is located near the main laboratory and seismometric instrumentation is lodged within the laboratory itself. Installation tcok place in the summer of 1975. This unit operates as part of a network of similar facilities across Canada. Baffin Island is one of the most active seismic areas in the Arctic, and the Igloolik station is particularly useful in tracing disturbances in the region because it is located in the center of a triangle of other network stations in Resolute Bay, Baker Lake, and

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Frobisher Bay.

2. climatology:

This station was set up in the summer of 1977 by the Atmospheric Environment Service of Environment Canada. It is of the kind designated by AES as a "Reference Station", that is to say it is equipped not only to collect data but to perform certain kinds of research as well.

The station is located, as mentioned earlier, within the Igloolik townsite, about 250 feet f ran the Centre. The fenced compound is 100 feet square.

The station collects standard data on temperatures, precipitation , and wind direction and velocity.

3. Atmosphere:

In the summer of 1979 AES installed instrumentation, specifically a modif ied high volume air sampler, to measure the presence of suspended particulate matter in the air. This station is part of the Canadian Arctic Air Pollution Program.

4. Geomagnetic Variation:

This is a new addition to the instrumentation now in place at the Centre and its purpose is to measure and record the variations of the magnetic field in the Igloolik area. The instrumentation was provided by the Division of Geomagnetism of E.M. R.

In the case of all these programs data are collected by Centre staff and sent to the agency concerned.

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One other similar program, namely the monitoring of ground temperatures at various sites and depths around the Centre has been discontinued.

It should also be noted that in some cases Centre staff have undertaken to collect data over a period of time for individual scientists who have only been able to visit the Centre sporadically.

For example, in 1976 Dr. J. Ellestad-Sayed initiated a study of Inuit nutrition. This involved the sending of samples of Inuit food to the University of Manitoba. The actual collection of the food by a local person was supervised by Centre staff.

Another example of this kind of assistance to researchers would be a program of testing of volunteers to measure their physiological response to cold. This testing was undertaken by Centre staff on behalf of Drs. L. D. Reed and S. Livingston of the Defence and Civil Institute of Environmental Medecine who initiated the study themselves in the winter of 1977. In this instance it is interesting to note that staff had some difficulty recruiting volunteers in spite of a $22. per test honorarium. The study was terminated in April 1977.

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C. Winter School

This project was a unique and notable feature of the Igloolik Centre's operation.

The Scientist-in-Charge Dr. Rode must be assigned credit for the conception and initiation of this innovative program.

Dr. Rode having spent several years in the Arctic was much struck by the fact that, because they visited the north only in the summer, the majority of researchers received an incomplete, and indeed misleading, impression of what life was like there.

To serve as some sort of corrective to these inaccurate impressions Dr. Rode proposed the Winter School. This consisted of a series of lectures in the Centre, meetings with local people possessed of particular and notable knowledge and experience, and field trips.

The Boreal Institute (University of Alberta) expressed an interest and undertook to recruit interested participants.

The first Winter School was held from March 28 to April 4, 1978 and was attended by twenty-tin participants, most of whom were public servants or oil company personnel with a degree of professional involvement in the north. Reaction from participants and also from residents of Igloolik was very positive.

A second Winter School was held from April 9 to April 17, 1979. The format of the first school was adhered to and this session also was judged a success by all involved.

However, financial stringency had reduced the number of participants from government so that participants numbered only twenty.

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A third Winter School held in 1980 was even more affected by restrictions in government expenditure and there were only twelve participants.

In spite of the success of these three sessions as a unique means of familiarizing key government and private sector personnel with northern problems, until restrictions on funding are eased it is unlikely that another Winter School will be held.

D. Training

At the time of the inception of the Igloolik Centre there was general acceptance of the need to train active people of the north to ensure that they could play a meaningful role in northern research.

In social and economic teams tendencies towards a dual society establishing itself permanently in the north clearly represented a threat. The majority of well paid and responsible jobs in the north were held by white southerners with the majority of native people in relatively subordinate and less well paid positions.

The possibility that the incursion of the southern scientific establishment into the North might reinforce this tendency was disturbing.

Hence the stress placed on training native northerners.

The senior position in Igloolik, that of Scientist-in-Charge, held, throughout the period under review, by Dr. Rode would, in all possibility, have been very difficult, if not impossible, to fill with a native person.

There were few other full time positions. These were:

1. Mechanic - Handy-man
2. Technician
3. Clerk-typist
4. Janitor

During the period under review all these positions were held by native persons. In addition sane half dozen native persons were occasionally employed as technicians on a part time basis.

All these employees received informal on-the-job training. Three,

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that is to say, the mechanic, the technician and the clerk-typist, also underwent f ormal six weeks training courses in Ottawa.

There was some degree of turnover in these positions. There have keen four mechanics, two janitors, two clerk-typists and one technician. As a result, counting part-time technicians, some f if teen native persons have received some degree of training at the Igloolik Centre.

There have been sane notable individual success stories in the training of native persons. Thomas Kublu, for example, who joined the Centre in 1974 as mechanic handy-man after a six week course on furnace repair and maintenance, was sufficiently motivated to enroll in Adult Education courses, f irstly to improve his communication skills in English, and then in arithmetic. Subsequently on this basis Mr. Kublu enrolled in a correspondence course in automotive mechanics.

Andy Awa, who joined the Centre in 1975 as a clerk, and performed very well, went on, in 1977, to successfully complete a course in Laboratory Methods and Procedures at the Defence Research Laboratory in Downsview, Ontario. Mr. Awa has now left the employ of the Centre.

It is also of interest that Dr. Rode while in Igloolik took instruction with considerable success in Inuktituk.

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E. Information Dissemination

From the outset the Department of Indian Affairs and Northern Development was most sensitive to the importance of maintaining good relations with the people of Igloolik. And, indeed, this was well advised. In a snail isolated community such as Igloolik, bad relations between the Centre and the local people could have been damaging to the work of the Centre.

The Department's sensitivity was a rational reaction to a wide spread although generally muted resentment among native and white northerners alike of what is perceived as the intrusive omnipresence of scientific researchers.

This kind of resentment or distrust is not entirely unnatural. To people living in remote cannuities the arrival of yet another group of southerners with strange equipment, perf orming mysterious tasks is likely to be somewhat disturbing. Also, there is the suspicion that, in sane way or another scientists may pose a threat to fishing and hunting, either as adjuncts to the mining or oil industries or, in the case of zoological research as the trigger of a ban or restriction on the taking of some variety of fish or game.

Just ly or not, anthropological investigators also have a reputation in the north as askers of intimate and embarrassing questions.

The Government of the Northwest Territories has for many years required that all scientists proposing tc conduct research in the Northwest Territories possess a licence. In recent years, in recognition of the growth of resentment toward researchers, the Government of the Northwest Territories has made a practice of referring licence applications tc those

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communities that would be affected by the proposed research activities. If the local people express opposition to a particular program of research, then a licence may not be forthcoming.

To dissipate or at least to minimize these negative perceptions it was decided that a high priority should be given to keeping the local community fully informed regarding the various programs of research being conducted at the Centre. This, it was assumed, would lead to acceptance and indeed positive support of the Centre, in so far as, at the time of the Centre's establishment, it was anticipated that a substantial proportion of the research conducted there would have a real bearing on the life of the local people.

It was with these considerations in mind that the Scientist-in-Charge from the earliest days of the Centre's operation instituted a vigorous program of community relations and public information.

The program employed two parallel strategies. One was the formation of a Local Advisory Committee; the other utilization of audio and press together with distributing of a news-letter to inform local people of the Centre's work.

Membership of the Local Advisory Committee consisted of representation from the Hamlet Council, Hunters and Trappers Association, Cooperative Association, Cultural Association (Inumariit) Housing Committee and Alcohol Education Committee.

Initially the Scientist-in-Charge took the initiative in calling meetings, generally, however native membership was somewhat apathetic, so that after four meetings being called in the Centre's first year of

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operation, in the second year only two were held and thereafter one a year. Current practice is for a meeting to be called on the initiative of any member when it is felt there is a need for one. This practice has resulted in infrequent meetings.

Meetings of the Committee have keen called in connection with first and second Arctic Winter Schools, and in March 1979, to meet with the Scientific Advisory Board of the Northwest Territories in April 1978.

In September, 1976 at a Committee meeting, Maurice Kigutikkardjuk suggested that an Inuktituk name for the Centre be adopted. As a result a competition was launched to select a name. 119 people submitted 243 suggestions. The name selected was UKPIKJUAQ (Big Snowy Owl) - a fact that seems to have received no kind of official endorsement and is not generally known to many of those acquainted with the Centre.

At a Committee meeting held in April 1977, Mark Evaloardjuk, the local Member of Legislative Assembly, raised the question of the "tons of blubber" left lying around the settlement every year and enquired whether the Centre could be instrumental in disposing of the problem.

Subsequently Dr. Rode enquired of DIAND officials whether they could assist in solving the problem. No available documentation gives evidence of a positive response.

Both these episodes have some significance in so far as they represent initiatives on the part of the local people to be more involved with the Centre and to utilize its services. It seems regrettable that the UKPIKJUAQ name has never keen in general use, and that no research

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conducted at the Centre has had any bearing on the sort of problem raised by Mr. Evaloardjuk.

In the Centre's early days the Scientist-in-Charge produced frequent issues of a news letter called "Lab Notes". Three issues had been distributed by September 1974. Thereafter distribution was less frequent . The fourth issue was distributed in January 1975 and the fifth, fourteen months later in April 1976.

More recently a decision was made to rely more on local radio announcements than the new letter format to keep local people informed regarding Centre activities.

In addition, about four short news pieces have keen broadcast every year by CBC, Eastern Arctic Network.

In 1978 Dr. Rode was interviewed by CBC regarding the Centre's programme. Dr. Chapman and Dr. Lewis were also interviewed regarding their research. Because of the success of these broadcasts, arrangements were made to interview all scientists and students visiting the Centre.

In spite of this multifaceted program of "public information, in broad terms the people of Igloolik, both white and native, have little knowledge or indeed interest in the operation of the Centre or in the research conducted there. This lack of knowledge in all likelihood derives from the lack of interest, and the lack of interest in turn from the fact that the bulk of the research performed at the Centre is perceived as having little or nc relevance to the life of the local people.

On the other hand there is little evidence of any real resentment

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of the Centre and the work done there.

There is appreciation of the fact that the Centre provides some employment and useful community service. The very striking structure in which the Centre is housed is regarded with some degree of affection and pride. The Scientist-in-Charge has been a liked and respected member of the community.

Apart f rom these considerations the Centre is regarded neutrally, tolerated rather than enthusiastically supported.

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F. Conclusions

There is ample evidence that the quality of support offered by staff of the Igloolik Centre to scientists visiting the area has been excellent, and that all staff, particularly Dr. Rode, have brought to bear a high degree of energetic professionalism on all those tasks they have undertaken.

However, as stated earlier, it is clear that the Igloolik Centre, has since its inception been under utilized.

Over the five years under review there were, as has been noted, only twenty one separate programs of research - an average of four a year. This in a facility that could sustain at least half a dozen researchers in its laboratories at any one time, could house between twenty or so /and support a very much larger number in the field.

Examination of those research projects that were undertaken leads to the f ollowing conclusions:

L. Usage has been almost entirely by Canadians. With the exception of Ms. Pearce of the museum in Exeter U. K., and the possible exception of Dr. Raymond Stress of the National Science Foundation in Washington, D. C. , who, while on a familiarization tour of the facility made some observations of water fleas, all users have been Canadian.

2. None of the research undertaken at the Centre has been concerned with economic or social problems. Most studies have been in the physical sciences, and those few that were not have for the most part been anthropological.

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3. There is no evidence of any coordination between the various studies undertaken at the Centre.

4. Very little of the research has been of the kind envisaged by both Mr. Faulkner, when Minister of Indian Affairs and Northern Development, and by the Science Council of Canada, i.e. the kind of research which has a clear and direct relevance to the problems of northerners.

The reasons for this state of affairs have already keen touched upon.

It bears repeating that the Igloolik Centre at the time of its inception was conceived by ACND, which made the original recommendation for the facility's establishment, as one integral part of a science support system which in turn would sustain a coordinated program of northern research.

INA was accepted as fulfilling the role of constructing, maintaining and staffing the component facilities cf the system, and ACND itself as fulfilling the coordinating role.

However, in the event, once INA had discharged its responsibilities with regard to the establishment of the Igloolik Centre the whole initiative would seem to have petered out. Neither ACND or INA have demonstrated any notable concern regarding what research was conducted at the Centre.

Much research has keen conducted in the North but it has not been coordinated as was envisaged, nor, has it, except occasionally and marginally, involved utilization of the Igloolik Centre.

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Two initiatives would, in all likelihood, had they been taken, have done much to improve the situation.

The first is a very minor one. Had there been widely disseminated knowledge among potential users in Canada, U.S.A. and overseas of the kind of facilities available at Igloolik it is a reasonable assumption that utilization would have been greater. Announcements in the appropriate professional and academic journals could have, and could still, achieve this.

The second initiative would be more complex and onerous. This would involve a process of consultation involving government departments, federal, territorial and provincial, industry, native organizations and universities to evolve an agenda or set of priorities for northern research in all disciplines.

With such a set of broad guidelines defined and with incentives in place the kind of coordinated program of research originally conceived by ACND could become a realizable possibility.

It would be imperative that such a rationally coordinated set of guide lines should incorporate the kind of research envisaged by Mr. Faulkner and by the Science Council, and in fact, almost entirely absent in the history of Igloolik facility, that is to say, research directly related to the solution of problems experienced by northerners, particularly that which can clearly be perceived as such.

It would be important that this should include social and economic research.

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Most of the problems facing northerners are in fact, social and econanic. And yet none of the research conducted at Igloolik has been either social or economic.

Because of this consideration the consultative process shaping the priorized research agenda should include academic economists and sociologists as well as representatives of federal and territorial departments dealing with economic and social problem.

This is not to suggest that research, having no particular reference to the life of northerners, initiated by individual academics solely for reasons of professional interest, should not continue.

But it should not predominate.

If the kind of consultative process envisaged were set in train and an agenda of northern research priorities evolved and made widely known in Canada and aboard, if incentives for this kind of research were established, there would be a multifaceted payoff.

In the first place there could be a progressive amelioration in the lot of northerners. Secondly, there would be a much enhanced possibility of acceptance and support of research as such on their part.

As has been noted the presence of the Centre in the community has keen tolerated but has never aroused any really enthusiastic support. Employment opportunities have been relatively few and training has been minor.

Were the kind of guide lines envisaged established and actively promoted a very considerable number cf opportunities for employment and training would be opened up for native people. Because more

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research would be focused on problems with which they have more experience than any other group, they would be the "experts" as it were, and could be expected to play a far more signif icant role in such research.

Because the kind of research envisaged would, by definition, be far more directly relevant to their life-style, local people could be expected to be more interested, and more likely to support it with enthusiasm.

It should be emphasized that what has been suggested with regard to the establishment and promulgation of an agenda of research priorities as a means of enhancing the operation of Igloolik Centre is closely analogous to the program of coordinated northern research that was envisaged by ACND at the time of the Centre's inception.

The reasons for the under-uti lization of the Centre and its failure to be accepted as a vital part of the community derive primarily from the fact that what ACND proposed in this regard never became a reality.

As previously noted the coordinated research program and the system of supportive facilities were considered as being closely related. One of the key components in the supportive system was the data collection station.

The Igloolik Centre has gone some way in this direction, and has gained experience in this kind of operation. Whether or not the research activities can be rendered more relevant to the provision of solutions to northern problems this activity should be continued and even assigned a more significant role in the Centre's total work programme.

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If, as is to be hoped, the establishment of an agenda of coordinated research could be associated with the progressive setting in place of further components in the supportive system originally proposed by ACND, this important aspect of the Centre's operation could be to some extent standardized as part of a network of similar facilities in other parts of the north.

As a postscript it should be noted that a major factor has been the increased activity in petroleum exploration in the north, and the resulting concern about the environmental consequences of development. This has focused attention on the one hand on those areas where exploration has been mos t active and on pipeline routes, and on the other hand on applied rather than pure research. This has in turn diverted the research efforts of government agencies, of industry, and of universities (which supply much of industry's research needs) towards these areas, and away from the area served by the Igloolik laboratory, which is not at present a target for industrial development, and is not on any planned pipeline route. The Igloolik Centre has also suffered owing to the reduction in pure research, which the laboratory is so we 11 equipped and sited to support. Nor that the sea route through Fury and Hecla Strait is attracting attention, this situation may well change . Igloolik is in an ideal position to support several in the Fury and Hecla Strait area.

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III PERSONNEL AND FINANCIAL

A. Personnel

Consideration has been given to the personnel status of the Igloolik Centre in the section regarding training.

Recapitulating then, apart f rom the Scientist-in-Charge there have been four positions at the Centre, all of which have been filled with native people recruited in Igloolik.

The Scientist-in-Charge is clearly enough the central figure. The duties envisaged for the incumbent at the outset were chiefly managerial and. administrative, with the requirement that he should understand and be sensitive to the requirements and problems of researchers working in a wide variety of disciplines.

In practice, because of the isolated location of Igloolik and problem with freight, and absence of the kind of services that residents of major centres in the south come to take for granted, the incumbent has also been obliged to perform a cons iderable range of mechanical tasks . These have included cons truction and automotive maintenance.

The fact that Dr. Rode has performed well in such a demanding situation is a tribute not only to his energy but his very unusual versatility.

Total personnel costs have risen from an actual $62,600. in 1975-76 to an estimate of $106,062. in 1980-81.

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TABLE II

		74 - 75 (Actual)	75 - 76 (Actual)	76 - 77 (Actual)	77 - 78 (Actual)	78 - 79 (Actual)	79 - 80 (Actual)	80 - 81 Estt.
INUVIK	Salaries	78,556	76,118	84,910	101,585	99,997	117,936	128,200
	O & M	38,394	51,918	47,594	49,119	48,510	50,773	145,00
	Capital	15,000	10,000	10,000	10,000	10,000	55,000	40,000
	Total	131,950	138,036	142,504	160,704	158. s07	223,709	314,000
IGLOOLIK	Salaries		62,000	69,441	74,436	94,360	98,091	106,062
	O & M		42,018	77,892	73,350	71,900	48,918	75,640
	Capital		15,000	15,000	15,000	15,000	15,000	15,000
	Total		119,618	162,333	162,786	181,260	162,009	196,702
DIVIS ION HQ	Salaries			356,190	450,420	505,975	402,313	402,418
	O & M			322,216	341,592	345,392	210,591	274,865
	Capital							
	Total			678,406	792,012	851,367	612,907	677,283

B. Financial

Table II gives details of the Igloolik Centre's budget, together with, for comparison purposes, the budget of the Inuvik Centre and the budget of the Northern Social Research Division which administers both facilities.

In 1976-77 the Igloolik facility accounted for 23% of the Division's total budget, in 1977-78 for 20%, in 1978-79 for 21%, in 79-80 for 26% and in 1980-81 for an estimated 29%. During the period the Inuvik Centre's shine has risen from 21% to 31%.

The net picture is of the Division, to the credit of responsible managers, progressively assigning a proportionally larger share of budget to the two field operations.

However, when it canes to examining the proportion of the Igloolik Centre's budget that has been assigned to actual operations of the program i.e. "Other O & M", inflation has been very damaging.

If "Other O & M" at Igloolik had been increased in 1977-78 to sustain the same level of programming as in 1976-77 in line with inflation it would have been $83,733. In fact it was $73,350. i.e. 87% of the figure needed, not to increase the level of programing, but to "keep up with inflation". In 1978-79 it was 80% of the required amount, in 1979-80 it was 50%, and in 1980-81 70%. For comparison purposes it is interesting to note that the Inuvik Centre fared much better . Comparable figures are, for 1977-78 96%, for 1978-79 88%, for 1979-80 84%, and for 1980-81 an actual increase, 108%.

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It will be noted that for the period under review capital budget has remained stable at $15,000. per annum.[1.]

1. It is revealing that in 1980-81 whereas the Department of Indian Affairs and Northern Development assigns $409,534. to operation of both the Igloolik and Inuvik Centres, Energy, Mines and Resources Canada assigns $4,113,000. to its Polar Continental Shelf Programme.

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c. Conclusions

After the original capital outlay in connection with the construction and equipping of the Centre, DIAND has maintained the basic personnel establishment at the same level over the period under review and permitted moderate levels of equipment purchase.

Clearly enough there have been no notable increases in programme outlays, in fact, such a low level of increase that, in the light of inflation, they amount to an effective 30% reduction over the period considered.

Nevertheless, perhaps because utilization of the Centre has been less than was anticipated, perhaps, also, because of efficient management by the Scientist-in-Charge, operation of the facility has not suffered.

INVENTORY OF EQUIPMENT AND OTHER ITEMS IN THE EASTERN ARCTIC SCIENTIFIC RESOURCE CENTRE AT IGLOOLIK

A. SCIENTIFIC EQUIPMENT

1. 1 Seismograph (Teledyne Geotech Helicorder RV-301)
2. 1 Kinemetrics recorder for seismograph (Model WVTR-P)
3. 1 Wind Direction and Velocity Recorder (MSC U2A1 Recorder Munro. London. U.K.)
4. 1 Integrating Nephelometer (MR1)
5. 1 Barometer (Eberbach)
6. 1 Computer (Hewlett Packard Model 46)
7. 1 Analytic Binocular Microscope (Olympus Vanox)
8. 1 Microscope (Olympus)
9. 1 Centrifuge (IEC HN-S)
10. 1 Ergometer (Monark)
11. 1 Torsion Balance (Cleristian Becker)
12. 2 A.C. Line Conditioners (Belgar Series 6000B)
13. 1 Spectro photometer (Beckman Model 25)
14. 1 Spectro photometer Recorder (Beckman)
15. 1 Balance (Ohaus Micrometer)
16. 1 Weighing Scale (Continental Scale Corporation, Healthometer)
17. 1 Still (Consolidated Stills and Sterilizers. Model C-5)
18. 1 Balance (Sartorius 2355)
19. 1 Drying Oven (GCA Model 28)
20. 1 Balance Table
21. 1 Fume Hood (Built In)
22. 1 Vaccuum Pump (Fisher Scientific)
23. 1 Ground Temperature Gauge (Rubicon Instruments, Model 27336)

B. PHOTOGRAPHIC EQUIPMENT

1. 1 Enlarger (Omega Pro-Lab B66)
2. 1 Water Filter Purifier (Barnstead Nanopure)
3. 1 Photographic Light (Ilf ord)
4. 1 Print Dryer
5. 1 Copying Stand
6. 1 2 Safe Lamps (Kodak Model B)
7. 1 Print Guillotine
8. 1 Timer (Kodak)
9. 1 Timer (Gra-Lab)
10. 1 35mm Movie Projector (Kodak)
11. 1 16 mm Movie Projector (Bell and Howell)
12. 2 Speakers for Projectors (Bell and Howell)
13. 1 Pro j ection Screen with easel
14. 1 Overhead Projector (Bell and Howell 3019)
15. 1 Metal Projector Cabinet (Lorne, Martin)

C. COMMUNICATIONS EQUIPMENT

1. 1 H. F. 2-way Radio Transceiver RT. (EMC SQ15)
2. 2 Portable Military Type Transceivers (Canadian Marconi CP34 SSB)
3. 1 Battery Charger. (G. E. Model B.C.-448)

D. OFFICE EQUIPMENT

1. 1 Manual Typewriter (Olivetti)
2. 2 Duplicates (Gestetner)
3. 1 Stencil Cutter (Gestetner Gestetox 455)
4. 1 Paper Guillotine
5. 1 Tracing Table (Gestetner)
6. 1 Dex Machine (GCC Decision Expediter)
7. 1 Postal Meter (Pitney Bowes)
8. 1 Postal Scale (Pitney Bowes Model S510)
9. 1 Calculator (Hewlett-Packard Model 46)
10. 1 Hole Punch
11. 1 Stopwatch
12. 1 Typewriter (Olivetti-Manual)
13. 1 Typewriter (IEM Selectric)
14. 1 Typewriter (Olivetti, Manual, Syllabic)

E. MECHANICAL EQUIPMENT

1. 4 Tool Chests
2. 1 Worktable illuminated Magnifier
3. 1 Electric Circular Saw. (Black and Decker 3048 Type 1)
4. 1 Snow Blower (Graveby 566)
5. 1 Hydraulic Jack (Nike, Model 602H)
6. 2 Jacks
7. 1 Cylinder Trolley
8. 4 Work Benches (Wood)
9. 1 Work Bench (Metal)
10. 1 Heavy Duty Battery Charger
11. 1 1 Grinder (Sears 3/4 H. P.)
12. 1 Drill Stand (Rockwell, Deries 15.240)
13. 2 Trestle Tables
14. 1 1,000 Pound Scale (Fairbanks Model Al-3132)
15. 1 OxY-Acetylene Welding Kit (Purox)
16. 1 Mitre Frame (Craftsman)
17. 1 Mechanical Plane (Sears, LR 16012)
18. 1 Table Saw (Rockwell Beaver)
19. 1 Gasoline Electricity Generator (Fuguy-Onan 12.5JG.3CR.4AA)
20. 1 Metal Vice
21. 2 Metal Ladders
22. 1 Cement Mixer (Monarch)
23. 1 Outboard Motor (Chrysler, 25HP)
24. 1 Outboard Motor (Johnson 25HP)
25. 25 Gas cylinders Large
26. 1 Mobile Painting Trestle

E. MECHANICAL EQUIPMENT CONTINUED

27. Quantity of small tools, handtools, etc.

28. Quantity of various automotive parts.

F. AUTOMOTIVE EQUIPMENT

1. 1 Muskeg Carrier (Bombardier, Diesel)
2. 2 Skidoos (Olympique, 340, 1973)
3. 1 Snowmobile Personnel Carrier (Bombardier, 1976)
4. 1 Station Wagon (GMC. 1977)
5. 1 Half-Ton Pickup (1.H.1965)
6. 1 Water Wagon with pump and bore
7. 1 Truck (1.H.1200)
8. 2 Honda Motor Tricycles.

G. MISCELLANEOUS EQUIPMENT AND STORES

1. 1 Refrigerator/Freezer (Westinghouse Frost Free)
2. 1 Freezer (Westinghouse)
3. 1 Domestic Oven (G. E.)
4. 1 Carpet Master (Clarke)
5. 1 Viking Safety Wringer
6. 1 Portable Shower
7. 3 Angle poise Lamps
8. 1 Blackboard with easel
9. 3 Toilets (Electric Hunns Type)
10. 2 Laboratory Trolleys, Metal
11. 2 Vaccuum Cleaners (Clarke Model 609)
12. 1 Test Tube Drying Rack
13. 1 Coffee Urn
14. 1 Mop Bucket
15. 1 Emergency Eye wash unit
16. 1 Fire Extinguisher (Flag Model ABC 10 F)
17. 4 Fire Extinguishers (Flag Model PDC-12F)
18. 1 Fire Extinguisher (Flag Model CFH 25 F)
19. 1 Electric Flow Cleaner
20. 1 Metal Stepladder (6 feet)
21. 2 Garbage Pails
22. 1 Simplicity Washer
23. 1 Enterprise Cooking Oven
24. 2 Wheelbarrows (Metal)
25. Camping Equipment Various
26. Quantity Assorted winter clothing
27. 5 Caribou Skin outfits.

G. MISCELLANEOUS EQUIPMENT AND STORES CONTINUED

28. Emergency Light Unit (Twin. Dual Lite 30 X L-30)
29. 2 Freighter Canoes (Chestnut 22 feet)
30. Quantity cleaning materials.
31. Quantity cups and plates
32. Assorted photographic development chemicals
33. 26 Boxes Gestetner duplicating paper.
34. Approximately 1500 scientific kooks and journals.
35. Quantity small tools screws bolts etc.
36. Variety wire and rope
37. Quantity rough lumber
38. 1 Dozen large rolls glass fibre insulating material
39. Quantity finished lumber
40. 45 3/4" sheets plywood
41. 24 1/2" sheets plywood
42. 50 1/4" sheets plywood
43. 27 finished lumber 4" X 4" x 12'.