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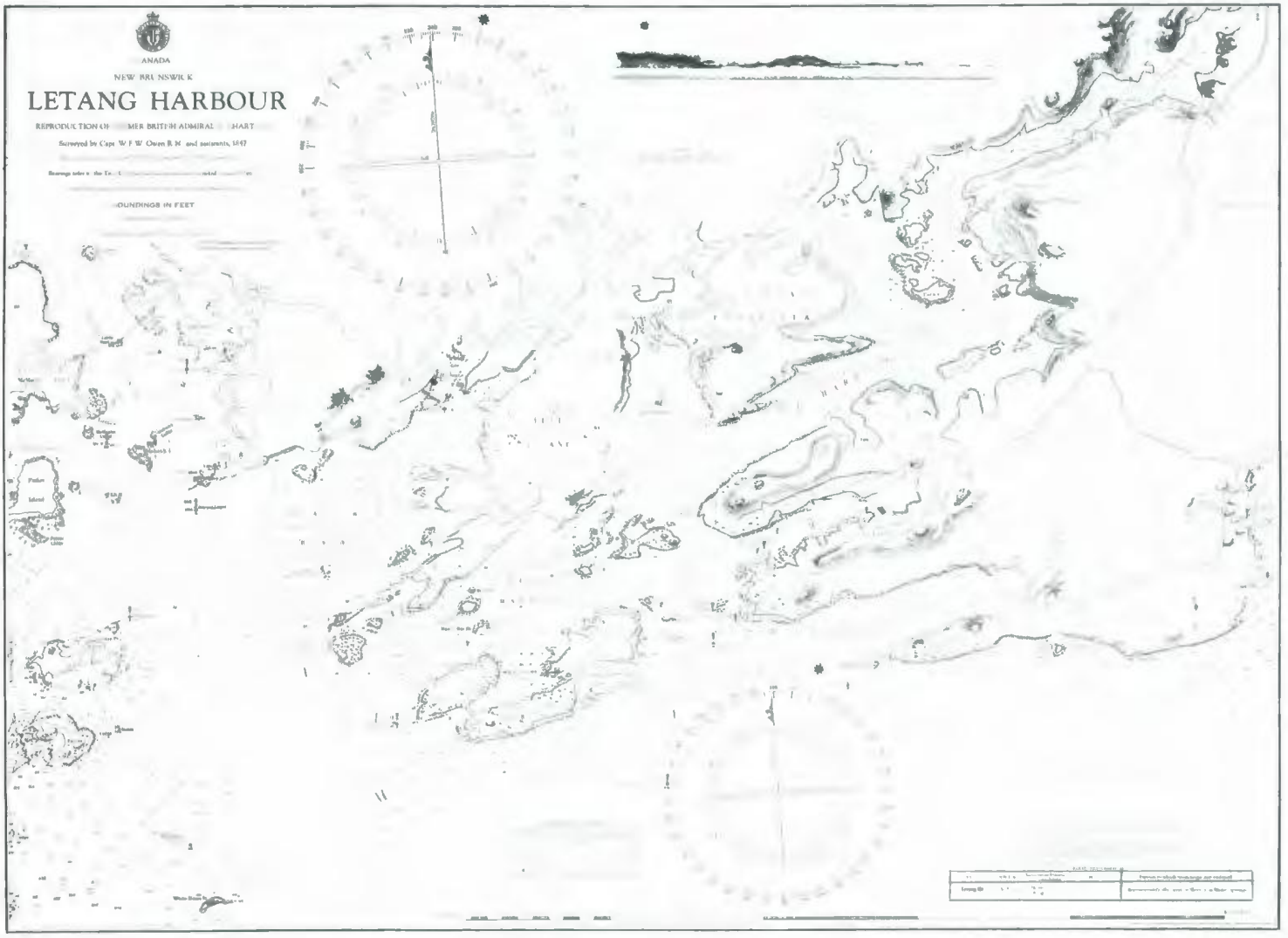
ASSOCIATION OF CANADIAN MAP LIBRARIES

BULLETIN

ASSOCIATION DES CARTOTHEQUES CANADIENNES



NUMBER 51/JUNE 1984 - NUMERO 51/JUIN 1984

ASSOCIATION OF CANADIAN MAP LIBRARIES

MEMBERSHIP in the Association of Canadian Map Libraries is open to both individuals and institutions having an interest in maps and the aims and objectives of the Association. Membership dues are for the calandar year and are as follows:

Full (Canadian map field)	$25.00
Associate (anyone interested)	$25.00
Institutional	$30.00

Members receive quarterly the A.C.M.L. Bulletin, the official journal of the Association.

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(Office address: 395 Wellington St., Ottawa)

Views expressed in the Bulletin are those of the contributors and do not necessarily reflect the views of the Association.

ASSOCIATION DES CARTOTHEQUES CANADIENNES

Peuvent devenir MEMBRES de l'Association des cartothèques canadiennes tout individu et toute institution qui s'intéressent aux cartes ainsi qu'aux objectifs de l'Association. La cotisation annuelle est la suivante:

Membres actifs (cartothécaires canadiens à plein temps)	$25.00
Membres associés (tous les intéressées)	$25.00
Institutions	$30.00

Le Bulletin, journal officiel de l'Association, est publié trimestriellement.

Les MEMBRES DU BUREAU de l'Association, pour l'année 1984/85 sont:

Président	Elizabeth Hamilton	University of New Brunswick
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Archives publiques du Canada
Ottawa, Canada K1A ON3

(395, rue Wellington, Ottawa)

Les opinions exprimées dans le Bulletin sont celles des collaborateurs et ne corespondent pas nécessairement à celles de l'Association.

A.C.M.L. OBJECTIVES

The objectives of the Association of Canadian Map Libraries are as follows:

1. To promote interest and knowledge of its members;
2. To further the professional knowledge of its members;
3. To encourage high standards in every phase of the organization, administration and development of map libraries by:
   a) providing for discussion of mutual problems and interests through meetings and/or publications;
   b) exchanging information on experiences, ideas and methods;
   c) establishing and improving standards of professional service in this field.

COVER

(Canadian Nautical Chart series.) Canadian Hydrographic Service, Department of the Environment. Scale varies. Ottawa: Dept. of the Environment. 4313: Letang Harbour. Original size and scale: 48 x 64 cm; 1·23,900. 1972.

This monochrome chart of Letang Harbour in New Brunswick was originally published by the British Admiralty in 1857. Canadian nautical charts are priced at $6.00 per copy and are available from:

Hydrographic Chart Distribution Office
Department of Fisheries and Oceans
1675 Russell Road, P.O. Box 8080
Ottawa, Ontario, Canada K1G 3H6

CONTENTS / MATIERES

BULLETIN STAFF/COLLABORATEURS

FROM THE EDITOR

The most obvious thing about this issue--nominally the June 1984 issue--is the fact that it is exceedingly late; for this I sincerely apologize to the membership. In an effort to reestablish the regular production schedule of the Bulletin, the Association will publish a combined September/December issue, to be distributed prior to the Annual Conference in June.

At this point I should like to remind all of you that the A.C.M.L. 19th Annual Conference will be held in Winnipeg at the University of Manitoba from 2-7 June 1985. The theme is "Mapping the Prairies." Would you please note the Call for Papers in the News and Communications section of this issue. Also noteworthy is the fact that the SLA Conference will be held at the Winnipeg Convention Centre from 8-13 June; A.C.M.L. members may wish to stay on for Geography and Map Division events.

In this issue there are contributions by two A.C.M.L. members who have not previously been involved with the Bulletin. Beth Ray of Carleton University Map Library is now responsible for compiling the Recent Acquisitions section, a task which she obviously has undertaken with extreme thoroughness and care, with virtually no guidance from me. We are indeed fortunate that she has been able to compile submissions from seven Canadian institutions, coast to coast. My only regret is that in my haste to have this belated issue printed, I did not have time to word-process her material; the fault is entirely my own. I should also like to acknowledge Kathryn Harding, of Queen's University Map Library, who has contributed a well written, analytical report on a map-marketing symposium she attended in May last year.

Regular contributors to the Bulletin--Lou Sebert, Alberta Auringer Wood (our indefatigable review editor), Serge Sauer--have once again provided me with first-class material. Lou has now completed Part 4 in his series of articles dealing with geodesy for map librarian. You will find Serge's comments about NMC's microfiche records of Canadian topographic series to be especially frank. Yves Tessier's "Homage à Jacques Cartier" (too late I notice that the French spelling is Hommage) was written with the intention that it would be printed in 1984, the 450th anniversary of the first voyage of Jacques Cartier to Canada. Although the commemoration is no longer as timely as it could have been, I feel that simply for the merits of Yves' superb photography alone, the item is worth printing in 1985. Another of Yves' expertly composed photographs is included with his review of Le Nord du Québec: profil régional. Susan Nichols and Franklin Cardy presented two very interesting papers at the 18th Annual Conference in Fredericton last year. These two papers, the second one co-authored by Brian Burrell), are reproduced in this issue of the Bulletin.

It is now my sad duty to announce that I have submitted to the A.C.M.L. Executive my resignation as editor of the Bulletin. I have done this with a great deal of regret and only after months of deliberation (one could argue that I spent too much time deliberating and not enough editing). Nevertheless, because of increasing responsibilities associated with my duties as Map Librarian at the University of Waterloo, I have been unable in recent months to devote as much time and attention to the Bulletin as was required. As a result, the publication has fallen ever further behind

schedule. In order to partially rectify the situation, I have forwarded all publishable material in my hands to the Executive who will, in turn, endeavour to publish a combined September/December issue with the able assistance of the staff of the National Map Collection and a professional editor. I wish my successor the very best.

The period of time that I have been associated with the Bulletin as editor can be counted or measured in various ways: 3 years and 4 months, 13 issues, 650 grey hairs, 2 wee babies in the family (sweet little Andrew and Patrick). The work has been challenging, rewarding, and a very valuable experience in my life. With each and every issue I always felt a thrill of excitement whenever the printer telephoned to tell me that the Bulletin was ready to be picked up; I could scarcely contain myself until I had inspected the finished product. Although I attempted at all times to do my very best, I often felt that more could or should have been accomplished: more time spent soliciting original material (especially from new members of the Association and from members who speak French as a first language), closer contact with Bulletin staff, lower production costs, and so on.

In closing, I wish to thank everyone who has been associated with the Bulletin during my term as editor. My thanks to all those who have served so faithfully and so well as members of the editorial staff--far too many, unfortunately, to mention individually but whose names have appeared for so many years on page ii of the Bulletin. I am also grateful to all those who, although not members of the staff, contributed articles, reports, reviews, and ideas. Ed Dahl's name comes to mind immediately but there are many others.

With respect to production activities, I wish to acknowledge my debt to Joyce Roach of Graphic Services for handling the word processing (and for continuing to smile and to meet my hastily imposed deadlines) and to Dick Bechtel, also of Graphic Services at the University of Waterloo, for superintending the dark-room work, plate making and printing, and binding). Flora Francis deserves a special thanks for managing so well the distribution of the Bulletin and for being available when I needed her assistance.

My supervisor, Bruce MacNeil, provided support and encouragement from the very beginning, especially in his tolerance towards the amount of time I was forced to spend away from my regular duties. My staff in the Library deserve a hand for carrying on tirelessly and efficiently during my frequent absences when I was locked in my office and chained to my editor's desk.

And without the support of my wife, Elizabeth, I simply could not have managed. She endured without complaining my long hours away from home in the evenings and on weekends and she listened and she cared while I rambled on about the Bulletin. My deepest thanks.

Richard Hugh Pinnell
Bulletin Editor

HOMMAGE /HOMAGE
A/TO
JACQUES CARTIER
1534-1984

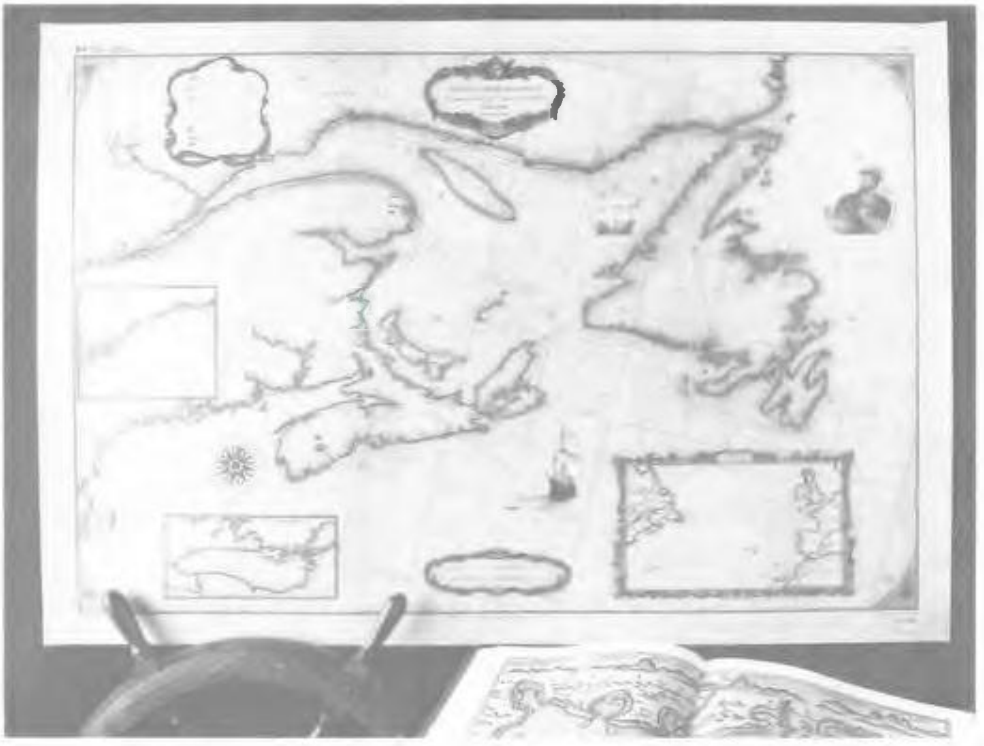
450e anniversaire
du premier voyage de Jacques Cartier au Canada

450th anniversary
of the first voyage of Jacques Cartier to Canada

CARTOGRAPHIE ET HAUTE MER/
CARTOGRAPHY AND SEAFARING

mise en scène et photographie/
set up and photography: Yves Tessier

CARTE HISTORIQUE SE RAPPORTANT A JACQUES CARTIER



Carte commémorative, voyages de Jacques Cartier en Canada: 1534 - 1984 /Données historiques: Parcs Canada. Echelle 1:1 500 000. Québec: Service hydrographique du Canada [Pêches et Océans], Région du Québec, 1984.
1 carte: 76 x 100 cm (no 1534-1984)
3 cartons; Atlantique nord [trajet du retour des grands voiliers 1984 et de la course Transat TAG Québec Saint-Malo], échelle 1:31 860 000; [Fleuve Saint-Laurent de Québec à Montréal]; Lac Ontario, échelle 1:1 500 000.
Prix: 3.00 $C
(Version anglaise de cette carte disponible sous le titre de Commemorative chart, voyages of Jacques Cartier to Canada: 1534-1984.)

Bureau de distribution des cartes marines
Ministère Pêches et Océans
1675 chemin Russell
C.P. 8080
Ottawa, Ont.
K1G 3H6

1984 marquera le 450e anniversaire du premier voyage de Jacques Cartier au Canada. Au cours de l'êtê 84, deux événements nautiques d'envergure internationale commémoreront cet anniversaire. Le premier est le rassemblement des grands voiliers du monde sur le fleuve Saint-Laurent jusqu'à Québec à la fin de juin. Le deuxième est la grande course transatlantique TAG qui prendra son départ le 17 août en direction de Saint-Malo. Ces deux événements seront accompagnés de manifestations de toutes sortes le long du Saint-Laurent, notamment à Gaspé et au Vieux-Port de Québec. Une course interprovinciale de voiliers entre Toronto et Charlottetown soulignera la participation canadienne à ces événements internationaux.

Dans cet esprit des fêtes nautiques du Saint-Laurent, le Service hydrographique du Canada vient de publier une magnifique carte commémorative des voyages de Jacques Cartier et des événements de l'été 1984. Couvrant le fleuve et le golfe du Saint-Laurent, cette carte montre le tracé des voyages de Cartier de 1534, 1535-36 et 1541-42, avec quelques toponymes de cette époque et des courts passages décrivant les gestes significatifs du navigateur. On retrouve également sur cette carte les tracés du retour des grands voiliers, de la course TAG Québec-Saint-Malo et de la course interprovinciale canadienne.

L'aspect visuel de cette carte est extrêmement intéressant en raison de son habillage cartographique de style "carte ancienne." On retrouve des lignes de rhumbs inspirées des portulans, des éoles dans les encoignures, des dessins de caravelles, des encadrements enluminés, un portrait de Cartier, un cartouche de titre particulièrement décoratif, une trame de fond de style papier à manuscrit. Les tracés de côte sont rehaussés d'un lavis "de carte marine ancienne."

Cette carte historique à la fois décorative et informative est un exemple remarquable de vulgarisation de l'information scientifique appropriée à un contexte particulier. On devra la retrouver dans toutes les cartothèques et chez les collectionneurs de cartes, à la fois pour le plaisir et pour la science.

Cette carte donne le goût des cartes anciennes. Elle permet de situer les pérégrinations de Jacques Cartier sur le fleuve et dans le golfe du Saint-Laurent. Elle donne même le goût de lire les récits de voyage de Cartier. Puissance d'évocation qu'est la cartographie!

Yves Tessier, chef
Cartothèque
Bibliothèque de l'Université Laval

* * *

CHECKLIST OF CANADIAN MAPS

The School of Library Service at Dalhousie University has just published A Checklist of Canadian Copyright Deposits in the British Museum, 1895-1923: Volume 1: Maps, edited by John R.T. Ettlinger and Patrick B. O'Neill (1984).

This is the first volume in what is planned to be a series of Checklists. This volume covers maps and later volumes are planned to deal with insurance plans, directories, periodicals, books, sheet music, photographs, and ephemera. Excluded from the Maps volume are the insurance plans of Canadian cities and towns, which will be described in a separate publication in this series. There are 89 pages of text. Arrangement of the entries is geographical and is basically by province from east to west.

THE GULF OF MAINE BOUNDARY DISPUTE: A SURVEYING AND MAPPING PERSPECTIVE

Susan Nichols
Department of Surveying Engineering
University of New Brunswick
Fredericton, N.B.

In April 1982, 130 nations voted in favour of the U.N. Convention on the Law of the Sea, a treaty which had taken over ten years to negotiate. The Convention must still be ratified by the governments of sixty nations before it comes into force,[1] but many of its provisions regarding national jurisdiction offshore have already become accepted among the international community and part of customary maritime law.[2] Neither Canada nor the United States has ratified the Convention. The United States is expected not to because it views several provisions as being against American interests.[3] Yet both nations claim jurisdiction over their continental shelves and over an exclusive fishery zone extending 200 nautical miles from shore. Consequently, in four offshore areas, the Canadian and American zones overlap and four new boundaries are in dispute.

After bilateral negotiations to resolve the boundary issues failed, priority was given to the delimitation of the Gulf of Maine boundary.[4] A Special Agreement was signed in 1981 to submit the delimitation to the International Court of Justice (ICJ).[5] The evidence is now before the Court and a decision is expected in the fall of 1984. It will be a landmark decision because it is the first delimitation by the Court of a single boundary for both the continental shelf and the fishery, or exclusive economic, zones (EEZ).[6]

Once a decision is reached, a new line will be added to the charts of the Gulf of Maine. To lawyers, politicians, and coastal inhabitants, the boundary dispute will be more or less settled. Scholars will no doubt review the equity of the decision, the legal principles that were applied, and possible implications for future Canadian-American boundary negotiations. How the boundary is precisely defined and delineated on the charts and how it is to be located at sea are technical concerns that are, in many respects, as essential to the resolution of the present dispute and to the prevention of future disagreements over the boundary location. While the Canadian and American positions are reviewed briefly here, the delimitation is also considered from a surveying and mapping perspective.

The Dispute

The Gulf of Maine is semi-enclosed by New Brunswick, Nova Scotia, and the coastal states of New England. Georges Bank, the centre of the present dispute, lies toward the mouth of the Gulf (see Figure 1). A shallow, submerged remnant of past glaciation, Georges Bank is separated from Nova Scotia by the Northeast Channel (approximate maximum depth--300 m) and from Cape Cod by the Great South Channel (approximate maximum depth--90 m). The area is a traditional fishing ground for both Canada and the United States and has potential for hydrocarbon resource development.

In the North East, jurisdiction over a tiny rock outcrop, Machias Seal Island, has been the subject of an historical dispute between Canada and the United States. The United States claims that Machias Seal Island was included in the terms of the 1783 Treaty of Paris, which granted all

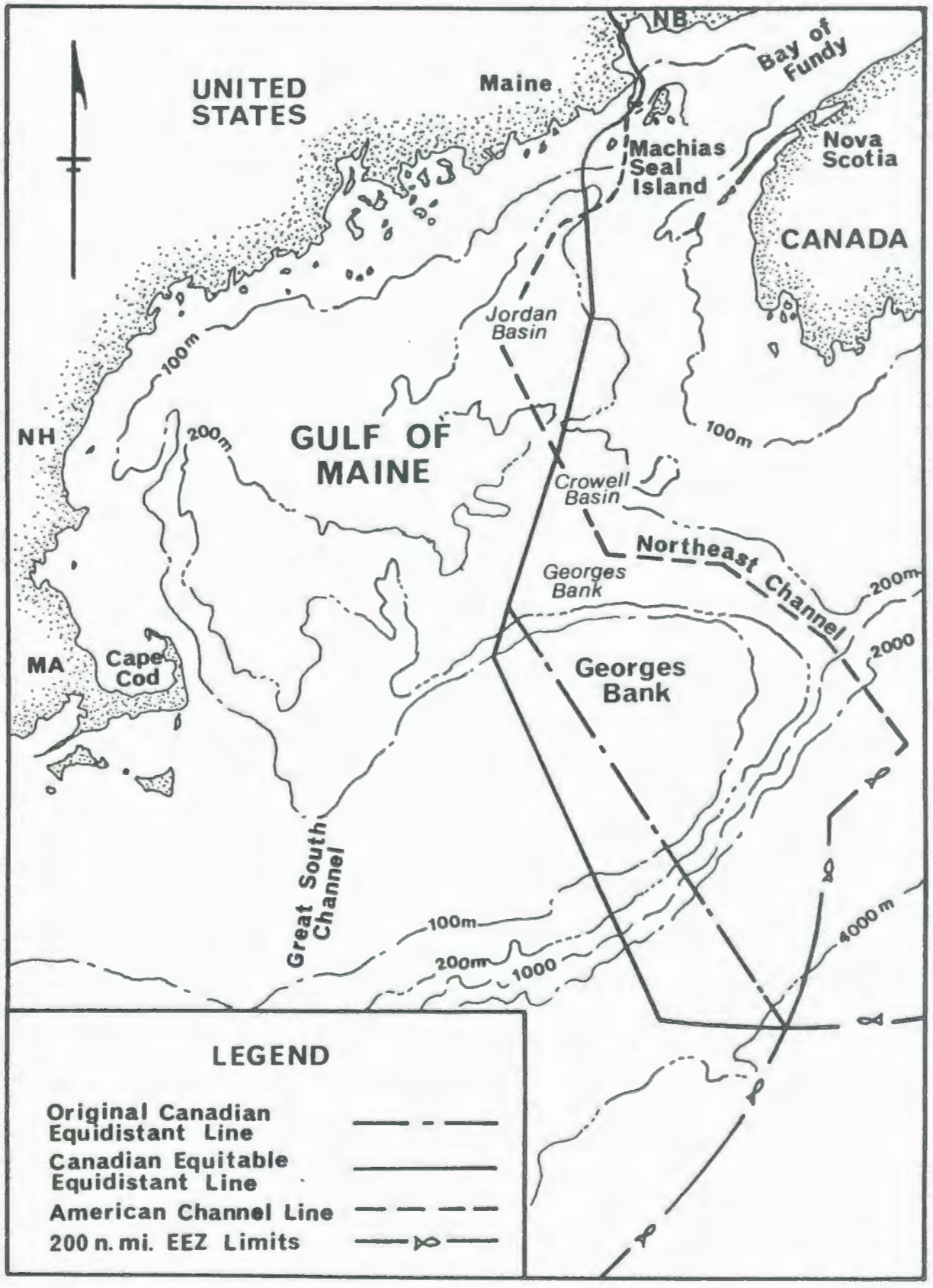


Figure 1 : Gulf of Maine and Canadian and American boundary claims.

islands within twenty leagues of the coast to the United States. Excluded from these provisions were those islands that were formerly part of Nova Scotia (New Brunswick was not yet a province). Canada counters that Machais Seal Island became Canadian territory through the Alexander Charter of 1621, a Crown patent to William Alexander comprising all of New Scotland.[7] Since the territories were poorly defined and the contemporary charts and maps of the east coast only vaguely resembled the true coastal geography, the island issue is not easily resolved.

Canada also claims the island through prescriptive rights. Fishermen and traders from both countries have occasionally used Machias Seal Island, but the Province of New Brunswick, and later the Canadian government, have operated a lighthouse there since 1832. Canadian legislation affecting the island includes the establishment of a bird sanctuary in 1944. Although official maps of the area generally show no international boundary beyond Grand Manan, a few, including The New York Times Atlas of the World (1978), show Machias Seal Island as being Canadian territory.[8]

When both nations extended their jurisdictions over the continental shelf and fisheries in the Gulf of Maine, the island sovereignty assumed a new dimension. President Truman proclaimed jurisdiction over the resources of the continental shelf along the American coasts in 1945, as the natural prolongation of the land mass. Both Canada and the United States have ratified the 1958 Geneva Convention on the Continental Shelf and Canada claims an extensive shelf on the Atlantic coast. In 1978, each also claimed exclusive rights to the fisheries for 200 nautical miles from their shores.[9] Since the fishery zones are measured from the coastal baselines of each nation, small islands included as baseline points can affect the territory that can be claimed and the direction of an equidistant line. In the Gulf of Maine, Machias Seal Island determines the initial portion of the international boundary.[10] As the claims intersect south of the island, however, the island issue can be isolated and has been left for future negotiations.

The dispute over Georges Bank effectively began in 1964 when Canada notified the American government of its intention to issue hydrocarbon exploration permits on Georges Bank. The United States at first acquiesced, noting that Canada should keep the permits north of an equidistant line.[11] Recognized in both the Geneva Convention and customary law at that time as an equitable method for delimiting maritime boundaries, an equidistant line is simply a line constructed to be the same distance from points on the coastal baselines of each nation.

After the 1969 North Sea Continental Shelf cases, the equidistant line lost some of its status as a general rule for delimitation. Subsequently, the United States claimed the international boundary to be a line passing through the deepest parts of the basins in the Gulf of Maine and the Northeast Channel. This line has the effect of excluding Canada from the entire Georges Bank (Figure 1). Negotiations were undertaken in the 1970s to resolve the boundary issues, but they reached a stalemate in 1977. In 1978, Canada published a new claim, the Equitable-Equidistant Line, based on another ICJ decision. Ignoring the effect of the Cape Cod area on the former equidistant line, Canada's new line added approximately 2880 square miles to its previous claim.[12]

Further negotiations were pursued with an impending "fish war" between the two nations. A 1979 treaty to submit the delimitation to the ICJ was first

linked to an agreement on fisheries. This agreement provided for the sharing and joint management of the Georges Bank fishery resources and it has been suggested that the linkage was an insurance policy to protect fishing interests regardless of the eventual boundary location. When in 1981 it appeared that the Channel Line was receiving additional support in international law, the United States withdrew from the linked agreement. The Special Agreement to submit the boundary to the ICJ for arbitration was signed in November 1981.[13]

Canadian and American Postions: Legal Arguments

Throughout the development of the law of the sea in the 20th century, general rules for delimiting offshore boundaries have been elusive. Emphasis has been on equitable delimitation. The ICJ has clarified that this is not apportionment in just or equitable shares but rather determination of a boundary which reflects all of the relevant circumstances in each case.[14] In conjunction with boundary agreements and codification of the law of the sea, the arbitrations by the ICJ illustrate the search for equitable principles with which to evaluate a particular boundary solution. These principles also provide some of the arguments in favour of the Canadian and American positions.

When offshore boundary delimitation only concerned the customary three-mile territorial sea, boundaries between nations were often defined as the prolongation of the land boundary, a line perpendicular to the general trend of the coastline, or an equidistant line. As shown in Figure 2, the configuration of the coast often makes the boundary inequitable, particularly when extended for long distances offshore. In preparation for the 1958 Geneva Convention on the Continental Shelf, a group of experts reviewed these and other boundary alternatives. The equidistant line was thought to provide equitable solutions in most situations.[15] Although the equidistant line became entrenched in the Geneva Convention, the relevant sections on delimitation also mentioned that "special circumstances" might be taken into account.[16]

In subsequent delimitations of continental shelf boundaries by the ICJ, the equidistant line was sometimes modified to reflect special or equitable circumstances. For example, the equidistant lines claimed by the Netherlands and Denmark as boundaries with West Germany were modifed to account for the concavity of the coast and the ratio of the coastline length to offshore area (proportionality) in the 1969 North Sea Continental Shelf cases.[17] In the 1977 Anglo-French arbitration, the ICJ recognized the size of the Scilly Islands, their population, and their proximity to Britain in considering the effect they should have on the boundary as it extended seaward. As illustrated in Figure 3, the islands were given a "half-effect" by bisecting the angle between two equidistant lines, one giving full effect and the other no effect to the islands as baseline points.[18] Canada's Equitable-Equidistant Line is similar to the British claim. This line gives no effect to Cape Cod, Martha's Vineyard, and Nantucket Island as points on the American baseline, although the geographic and socio-economic factors are quite different.[19]

During the past few years, the role of the equidistant line as a general principle to be applied in boundary delimitation has diminished. Although the equidistant line was preserved in the negotiating texts for the 1982 Convention on the Law of the Sea, the final text states only that delimitation is to be made by agreement or arbitration, based on the

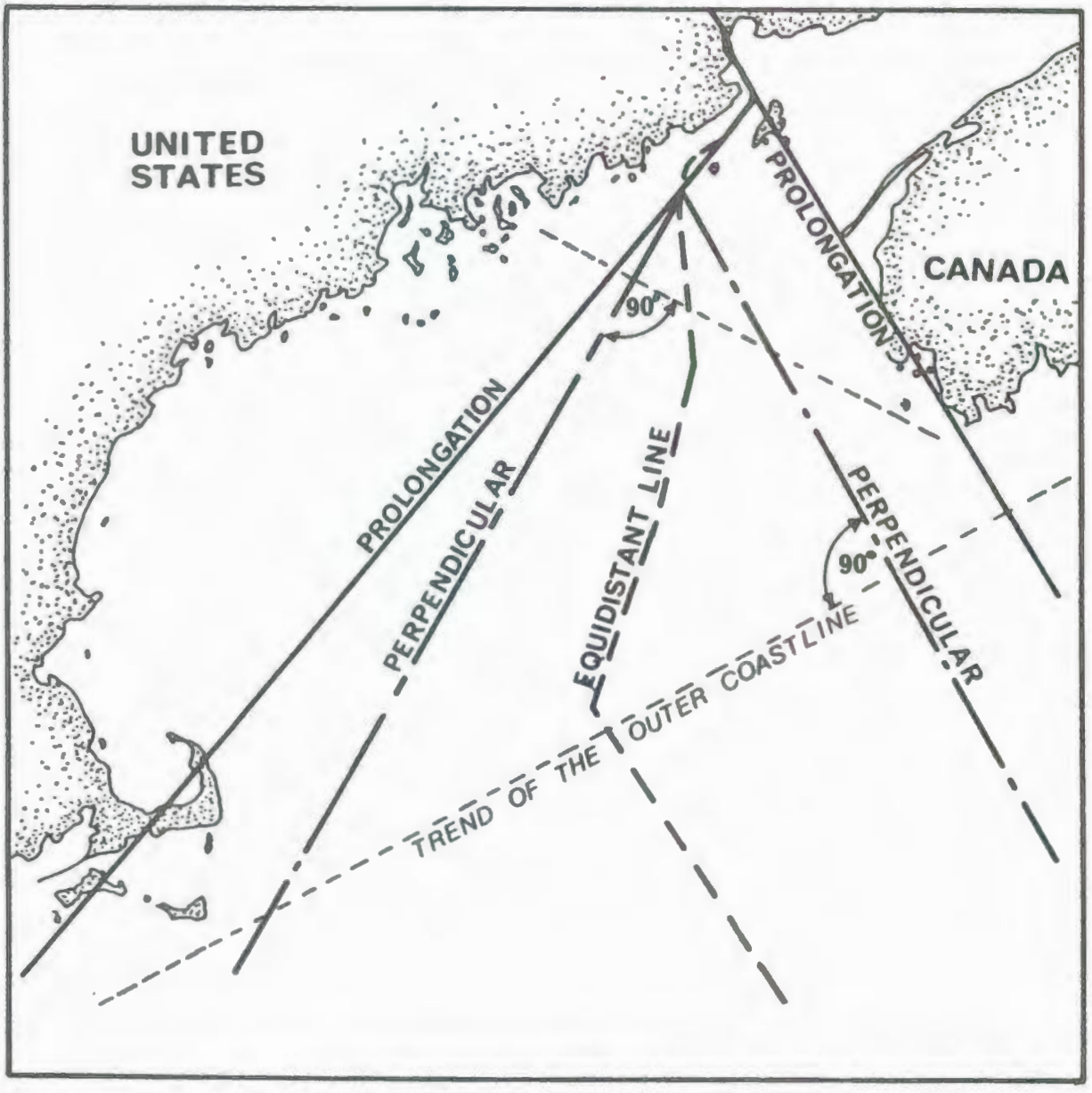


Figure 2 : Examples of alternative boundaries in the Gulf of Maine.

principles of international law, to effect an equitable solution.[20]

The ICJ arbitration of the continental shelf boundary between Tunisia and Libya in 1982 (see Figure 4) also disregarded the equidistant line. In this case, the initial portion of the boundary was constructed by the Court as perpendicular to the coastline. From a point which represented a significant change in the direction of Tunisia's coast, the seaward extension of the boundary was delimited as a line parallel to a baseline that gave a half-effect to a large island on Tunisia's shore.[21]

In the Tunisia-Libya arbitration, the Court also reviewed the principles that should be applied in the delimitation of continental shelf boundaries and, as in the North Sea cases, found that a discontinuity in the prolongation of the shelf might be a factor in determining the natural division between two countries.[22] Since the United States claims that the Northeast Channel marks the natural limit of the prolongation of Canada's continental shelf in the Gulf of Maine, these cases may provide some support for the Channel Line. However, the United States, other countries, and the ICJ have ignored much deeper ocean troughs in delimiting shelf boundaries, particularly when the seabed is one geological unit as is the case in the Gulf of Maine.[23]

If the ICJ also considers the legal definition of the continental shelf, only the 1958 Geneva Convention binds the United States and Canada. Article I of the Convention defines the limit of the continental shelf as either the 200-meter bathymetric contour or the limit of exploitability.[24] The Northeast Channel has depths greater than 200 m, but both nations claim shelf areas in much deeper waters as recognized by the 1982 Convention and customary law. Probably with the Gulf of Maine in mind, Canada also included a reservation when ratifying the Geneva Convention, stating that it would not recognize any accidental feature as limiting the prolongation of its continental shelf.[25]

Equitable circumstances may lend more support to the American position. Proportionality is an important consideration and was the basis for the 1974 boundary agreement between Spain and France in the Bay of Biscay.[26] In the Anglo-French arbitration, however, the Court stated that disproportion was to be considered, rather than division by proportion.[27] While the Equitable-Equidistant Line divides the Gulf of Maine into approximately equal areas, the ratio of the American coastline to the Canadian coastline is approximately 3:1. If the Bay of Fundy is excluded from calculation of the coastline lengths (Canada has closed the bay inside its baselines), the ratio is 4:1.[28] The Canadian line would appear to be inequitable in this respect and some adjustment to reduce the disproportion may be considered.

It has also been suggested that the Channel Line would preserve the unity of the Georges Bank seabed resources and fisheries for management purposes.[29] Unity of resources was identified in the North Sea cases and EEZ boundary delimitations as a special circumstance and is based on the premise that resource management and prevention of conflicts, such as may exist between fishing and gas or oil exploitation, can only be effective if resources are under one jurisdiction. It should be noted though that along the 5000-kilometer boundary Canadians and Americans presently share, joint-management of many resources has been relatively successful. Although there is evidence that the Northeast Channel is a natural boundary for some fish species and potential hydrocarbon development, neither

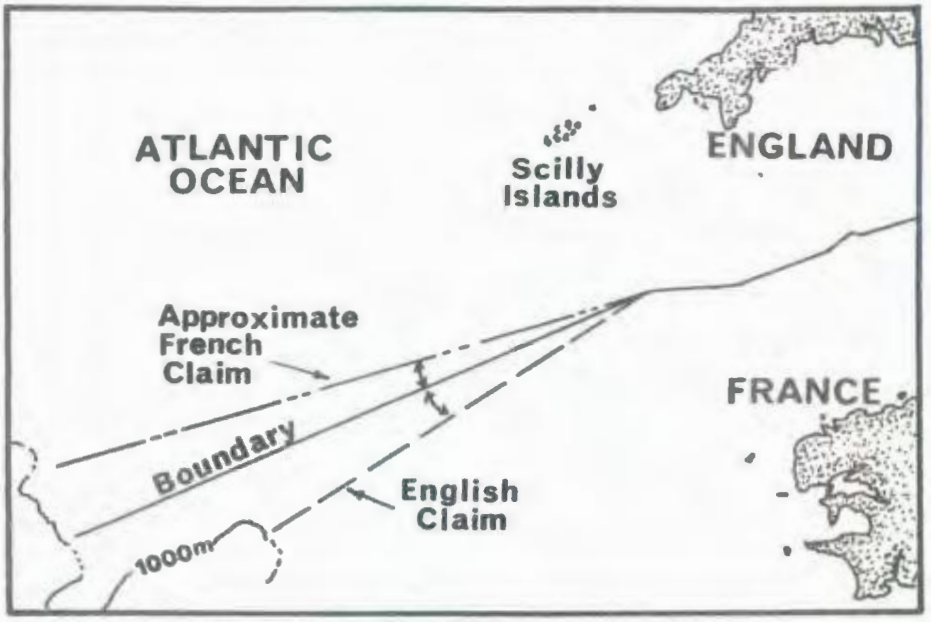


Figure 3 : Atlantic portion of boundary delimitation in the Anglo-French Arbitration (modified from Colson, D.A. "The United Kingdom-France Continental Shelf Arbitration." American Journal of International Law, 72, 1978, p. 107).

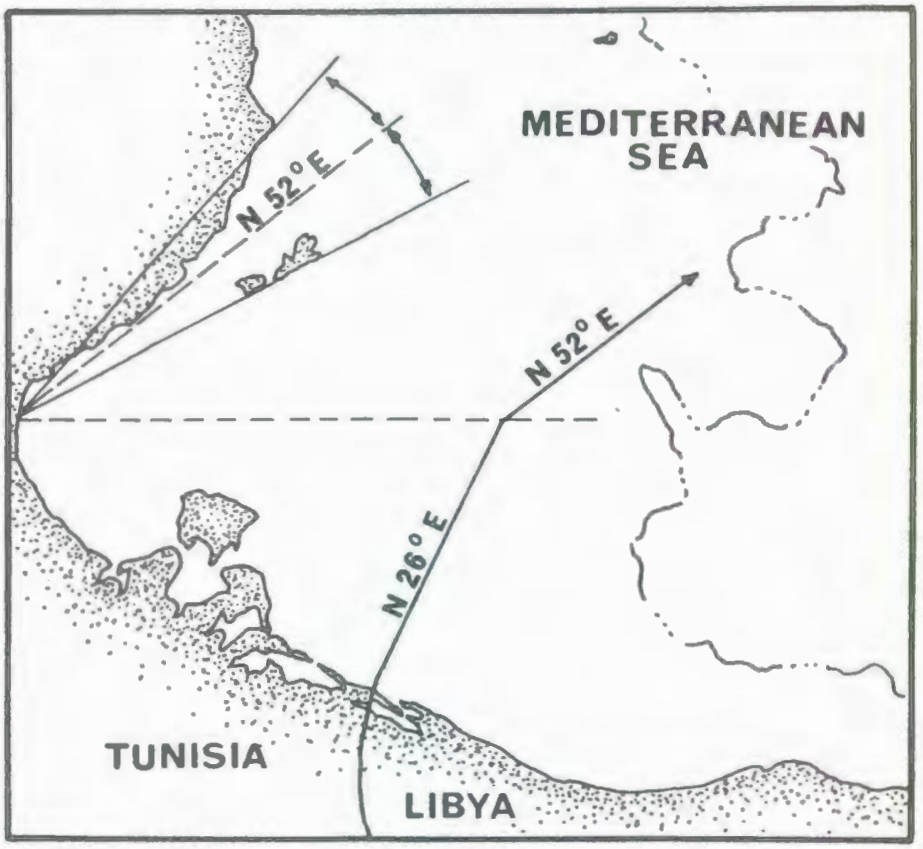


Figure 4 : Boundary delimitation in the Tunisia-Libya Arbitration (modified from Feldman, M.B. "The Tunisia-Libya Continental Shelf Case: Geographic Justice or Judicial Compromise?" American Journal of International Law, 77, 1983, p. 221).

pollution nor undiscovered resources are respectors of boundaries. Co-operative management and agreements would still be required.[30]

In past delimitations of fishing limits, the ICJ has also recognized historical rights and economic dependence of coastal nations.[31] Both Canada and the United States claim historical and current dependence on the resources of Georges Bank. Charting and scientific research have also been used as evidence of historical rights in the Gulf of Maine. While the United States claims responsibility for charting in the Gulf of Maine after independence, Canada points out that most reliable charts were prepared by the British Hydrographic Service until the U.S. Coast Survey published its first chart of the gulf in 1864. The Canadian Hydrographic Service revised and updated these British charts until it published its own chart of the gulf in 1968.[32]

Charts and Boundaries: Technical Considerations

While these have been some of the legal arguments in support of the two claims, the technical considerations in the delimitation of a marine boundary have also been given greater recognition in the past few years. Surveying and mapping will play a significant role in the Gulf of Maine delimitation. The provisions of the Special Agreement referred to charts, their use and interpretation, and the nature of the boundary lines delineated upon them.[33] Charts have been used to prepare evidence and to support various legal arguments. Furthermore, lines on these charts and geodetic co-ordinates will be the principal means of identifying the location of the boundary once the legal-political process is complete.

To determine the limits of zones offshore and to calculate the position of equidistant or other lines, the location of the coastline must be derived from the charts. Zones and boundaries are measured from baselines which can be either a series of straight lines, where the coast is irregular, or the low water line (chart datum) as shown on a large-scale chart. When Canada published a series of straight baselines in 1970, the United States protested.[34] The United States has traditionally used the mean low water line as its baseline on charts, which is approximately four feet higher than Canada's chart datum.[33] The choice of the baseline can affect the boundary location and direction, particularly where low tide elevations, rocks or islands exposed at low tide, are used as baseline points (Figure 5). If the American datum were used along Canada's coast, some points now claimed for the Canadian baseline might be classified as below chart datum and eliminated from the boundary calculations. The Special Agreement states that vertical datums are to be considered theoretically the same, thus eliminating the possibility of at least one technical argument.[35]

In presenting evidence to the Court, charts have been used extensively to show various alternative boundary positions, to illustrate arguments, and as discussed above, to demonstrate historical rights. The Special Agreement makes provisions for the interpretation of chart symbology and other technical information for the Court.[36] Charts, like any graphical representation, can also be very persuasive and used to emphasis various contentions. For example, if the area less than 100 fathoms (200 m) in depth is shaded on a chart of the Gulf of Maine, Georges Bank appears to be the natural prolongation of the American coast and the Northeast Channel is a prominent discontinuity, thus supporting the American claim. If, on the other hand, the 30-fathom line is shaded, the Great South Channel is also highlighted and Georges Bank appears more as a submerged island between the

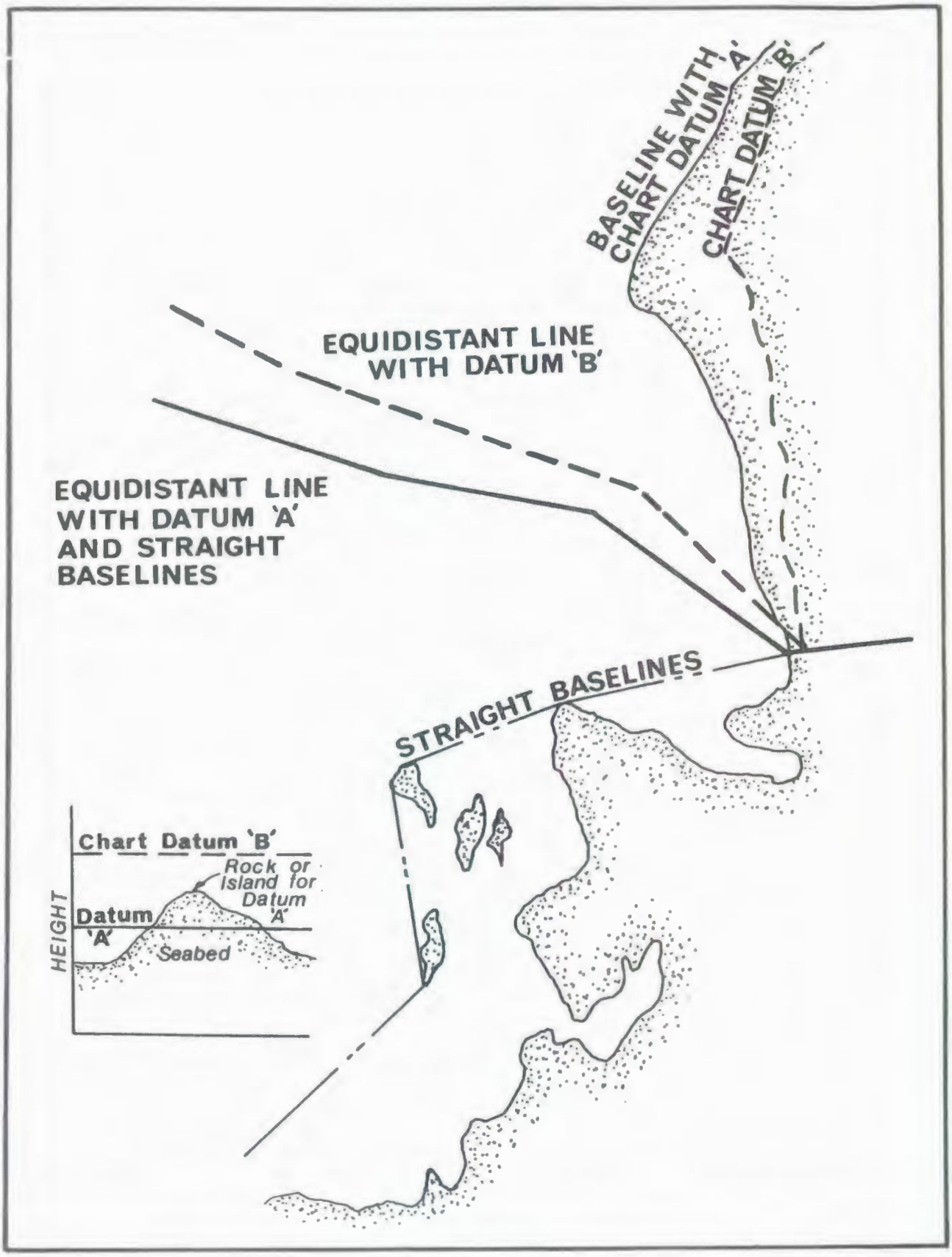


Figure 5 : Effect of datums and baselines on Equidistant Line.

coasts.[37]

The Courts have traditionally given their boundary decisions as a line delineated on the official charts. In recent cases, construction lines have also been drawn on the charts. Not only can the chart projection affect the perception of lines and areas, but it can also influence calculations and the eventual boundary location. When, for example, an equidistant line is graphically determined on a chart with a Mercator projection and on a Lambert Conformal chart, discrepancies in the locations of the lines will occur. It has been recommended that due to scale distortions Mercator charts have limited use in constructing equidistant lines. Even the width of the pencil must be taken into account when a precise boundary location is sought.[38] The 1982 Convention specifically mentions that boundaries are to be defined by geodetic co-ordinates, which can then be plotted on any chart, thus eliminating possible grounds for dispute.[39] The Special Agreement makes similar provisions.[40]

Another problem in drawing lines on charts is illustrated in the Anglo-French arbitration, where the Court constructed a line on a Mercator chart as the boundary. Such a line (loxodrome or rhumb line) will have a constant bearing, but it does not necessarily represent the shortest distance between two points on a mathematical surface representing the earth (geodesic). Britain later appealed the decision because, had the line been calculated by geodetic co-ordinates in this case, the geodesic would lie approximately four miles south of the boundary delineated by the Court. The appeal was rejected, basically on the grounds that boundary delimitation on a Mercator chart was traditional. The provisions for definition by co-ordinates and the use of geodesics in the Gulf of Maine case eliminate this problem and also correspond with modern methods for demarcating and relocating marine boundaries.[41]

Once the boundary is defined by the Courts, the problem of demarcation still remains. Many lawyers, politicians, and laymen suffer from what may be denoted as "the concrete pillar or painted line syndrome." They are under the misconception that a marine boundary will be as visible as a land boundary marked by concrete monuments, a wall, barricade, or cleared forest line. In the ocean such a line is mere fantasy. While buoys may mark turning points in shallow waters and, in some cases, oil rigs may provide some relatively permanent reference points, great lengths of the boundary will be unmarked.

That does not mean, however, that a ship's navigator, the captain of a scallop dragger, or even an airline pilot will not be able to find the boundary. Using radio and satellite positioning systems, the location of a vessel or rig can be calculated in terms of co-ordinates. When compared with the co-ordinate positions of the boundary, derived either from a chart or table, the navigator can find his relative position. The positioning systems themselves become a form of demarcation, the accuracy of the relocation being related to the particular method of positioning. The chart is still used for visual comparison and the line on the chart replaces the concrete pillars and vistas. In many respects, the line assumes greater importance than a land boundary delineated on a map. Boundary delimitation must therefore be made with the greatest possible technical precision.

Conclusion

Perhaps no line on a map or chart has greater political, social, and economic significance than does an international boundary. Yet it is doubtful that the Gulf of Maine boundary dispute will ever lead to the kind of confrontation experienced in other parts of the world over international boundaries. Neither should the decision of the Court and future negotiations result in economic disaster for either party. Exclusive rights in the offshore are a relatively new phenomenon and agreements will probably continue to ensure access to and management of those resources once the boundary issue is settled. One is tempted to view the American and Canadian claims as bargaining positions.

What the Gulf of Maine case does illustrate is the growing body of international law and the increasing reliance on technical assistance to resolve and avoid boundary disputes. The respect given an international boundary will depend in part on the equity of the division, as perceived by all concerned parties, and the degree to which the boundary represents the natural divisions between peoples, whether cultural or geographic. It will also depend on the ability to locate the boundary on the earth's surface after the legal process is complete. An arbitrary or an ill-defined boundary may cause uncertainty, hardship, and constant friction. On the other hand, a precise and equitable boundary delimitation may help to settle disputes between neighbours. Such hopefully will be the case in the Gulf of Maine.

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FLOOD RISK MAPPING IN NEW BRUNSWICK

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Past Floods in New Brunswick

Floods are natural disasters that have been recorded as part of the history of New Brunswick for over 250 years. At one time or another, floods have occurred along every major river of the province, but they have been especially destructive along the lower Saint John River between Fredericton and Gagetown.

The earliest recorded flood in New Brunswick was in 1696. In the small French settlement at Jemseg, settlers had to consider leaving when crop failures occurred due to delays in planting caused by a late spring freshet. However, the settlement remained for another five years, until a flood event caused so many losses to crops and cattle that it was finally abandoned.

Since 1696, there have been about fifty floods causing substantial damage. Most of these floods have occurred in spring time as a result of snowmelt and rainfall (generally in April and May) or ice jams (January through March). Also, significant floods have taken place in the late summer or fall as a result of heavy rainfall from tropical-type storms.

The 1973 flood was the most destructive and widespread of all the flood events that have occurred recently in the province. It hit particularly hard at the 50-kilometre stretch of the Saint John River from Mactaquac to Lower Jemseg. This area includes Fredericton, the capital city of New Brunswick, and the communities of Maugerville and Sheffield, which are located on the flood plain just downstream of Fredericton.

The 1973 flood produced the highest water levels ever recorded at Fredericton during open water (ice-free) conditions. As a result, many properties were seriously damaged by flood waters resulting in a total economic cost of flood damages in excess of ten million (1973) dollars in the Saint John River Basin.

The Maugerville-Sheffield area suffered the highest per capita flood damage of any region in the province. Over 225 dwellings in this area were flooded and a thousand residents had to be evacuated. Since the 1973 spring flood caused so much hardship and damage, it is well remembered by many residents of the province. It was also well documented by government agencies and the media. For those reasons, the 1973 flood has been portrayed on all flood risk maps produced for flood plains from Fredericton to Lower Jemseg.

Two other flood events that occurred during the past decade also deserve special mention. During 1976, there were a series of ice jams on the Saint John River causing extensive flooding of communities in the northwestern part of the province. One of these communities was Perth-Andover where a 90-bed hospital had to be evacuated and over two hundred people in the community had to leave their homes.

In 1979, during the latter part of April and early part of May, an extreme flood event occurred as the result of rainfall combined with heavy snowmelt. As in 1973, much of the flood loss occurred on the flood plain of the river from Fredericton downstream through the Maugerville-Sheffield area to Jemseg.

Flood Damages

Floods are costly due to: 1) the direct damage caused to buildings, home furniture and office contents, highways, bridges, vehicles, and machinery; 2) indirect economic effects such as the disruption of government and business activity, lower productivity, transportation delays, and decreased property values; and 3) intangible losses associated with family separation and personal stress.

The major developments on flood plains and the largest damages have occurred in the Saint John River Basin but the Restigouche and Miramichi Rivers have scattered flood plain development which has suffered from periodic flooding. Some marshy coastal areas have also been subject to flood, generally as a result of a combination of heavy rains, high tides, and on-shore winds.

A study carried out by the Saint John River Basin Board in 1973 showed that between 1887 and 1971 floods caused damages in excesss of one million dollars (at 1972 price levels) on six occasions. The 1973 flood caused nearly $12 million damage throught the province. Floods in 1975 and early 1976 caused about $5 million dollars worth of damages, and the flood in 1979 caused about $6.5 million dollars worth of damages. Several further significant floods have occurred recently but have caused much less damage owing to the effect of warning measures and increased public awareness.

Flood Damage Reduction

Flood damage reduction measures fall into two general categories: structural and non-structural.

Structural flood control works include such things as the construction of flood control reservoirs, the dredging of river channels, and the building of dykes. Generally, for the major rivers of New Brunswick, these structural approaches would not be cost effective methods for reducing flood damages. The cost of a major flood control project along the Saint John River would be too high considering the present economy and population of the province and the existing amount of flood plain development. The American experience indicates that flood control works have led to greater development on the flood plain. A false sense of security from flood damages is first created and then shattered when a flood occurs of greater magnitude than the level of protection offered by these engineering projects.

In recent years, the emphasis in Canada has been on non-structural measures of flood damage reduction, such as flood forecasting and flood risk mapping. These measures do not prevent a flood from occurring, but they tend to reduce the amount of damage that would result from the flood event.

In 1976, the Province of New Brunswick and the Government of Canada entered into a "General Agreement Respecting Flood Damage Reduction" with the

objective of reducing potential flood damage on flood plains and along the shores of lakes, rivers, and the sea. This agreement recognizes that the potential for flood damage can be reduced by control of the uses made of areas prone to flooding. The emphasis is thus on the non-structural approach.

Flood Risk Mapping in New Brunswick

To provide for the identification and mapping of flood prone areas in New Brunswick, an "Agreement Respecting Flood Risk Mapping" was signed on March 31, 1976 and amended on July 16, 1981. Under the terms of this agreement, a number of flood prone areas in the province were to be mapped and the flood risk zones delineated and ultimately designated as areas wherein only certain approved development might take place.

Flood risk maps are produced in accordance with two standards produced by Environment Canada. One of these refers to the production of base mapping while the other is concerned with the delineation of flood zones on this mapping.

In New Brunswick, two types of flood risk maps have been produced: Public Information Maps and Designated Maps.

Public Information Maps

Multi-colour line maps are prepared for free public distribution. These maps are intended for members of the general public who are interested in the flooding that may occur in their community or who may desire an approximate indication of the flood risk of their property. These general information maps usually depict a large flood plain area or an entire community. For example, one general information map at a scale of 1:10,000 was prepared for the City of Fredericton. On the reverse side of the map there is additional information on that area's flooding problem and the response of government to it.

It was decided that contours were not necessary on public information maps. Although the first two public information maps produced (i.e. the maps for the Fredericton Area and Perth-Andover) do have contours, they are of questionnable value to the user because of the large contour interval involved. The depiction of contours on these two public information flood risk maps is due largely to the fact that it was available on topographical base mapping that was used in their production.

Also excluded from most public information maps is information regarding the location of cross sections used in the hydrotechnical study and the water surface elevations used to define the flood zones. For this information the user is referred to the other type of flood risk map, the designated or "working" map.

Designated Maps

The designated or "working" flood risk maps are topographical maps produced at a larger scale in order to depict a smaller area in greater detail. These maps are intended for the engineers, planners, developers, surveyors, and public who may be interested in the flood risk at a particular location.

These maps are produced as paper prints from plastic map sheets (Chronaflexes) as the need arises. There is usually a small charge associated with the production of the print. The maps are also available for inspection (but not sale) at the county registry office and the offices of the New Brunswick Department of the Environment. These are the legal maps for designation purposes. As such they contain a note identifying the basis and effective date of the designation. The map sheet layout usually conforms to the scheme developed by L.R.I.S. for their urban and resource mapping. As a result, many map sheets may depict only a small area of the flood plain.

In the interest of economy, it was decided to limit the amount of topographic and plannimetric information on the map sheets to the strip along the river. Half-metre contours are shown to an elevation a few metres higher than that associated with the largest flood event being depicted on the map. Planimetric information is provided for the flood plain and immediate surrounding area. In addition, major roads or landmarks may be shown as an aid in orientation for the map user.

The six areas chosen for flood risk mapping have all experienced significant flood damages in the past. Four areas are along the main stem of the Saint John River, while the other two, Sussex area and Keswick area, are along major tributaries of the Saint John River. There have been 167 flood risk maps produced in New Brunswick to date. One public information map is produced for each area, as well as the required number of working maps to provide adequate coverage of the area. Table 1 provides information on the maps produced for each of the six areas.

Table 1
CANADA-NEW BRUNSWICK FLOOD DAMAGE REDUCTION PROGRAM
FLOOD RISK MAPS COMPLETED
AS OF JUNE 1, 1984

	DESIGNATED FLOOD RISK WORKING MAPS				PUBLIC INFORMATION MAPS
Area	Scale	Type	No.	Contour Interval	Scale
Fredericton	1:1,000	Line	75	0.5m Below 15m contour 1.0m Above 15m contour	1:10,000
Lower Fredericton-Lincoln	1:1,000 1:2,000	Line Line	14 18	0.5m Below 8m contour 2.0m Above 8m contour	1:10,000
Oromocto-Lower Jemseg	1:10,000	Orthophoto	8	0.5m Below 10m contour 5.0m Above 10m contour	1:50,000
Perth-Andover	1:2,000	Line	4	0.5m Below 85m contour 2.0m Above 85m contour	1:5,000
Sussex	1:5,000 1:2,000	Line Line	21 14	0.5m	1:25,000
Keswick River	1:2,000	Line	7	0.5m	1:25,000
			161	Working Maps	6 Public Information Maps

Flood Lines

Flood lines are lines on a map showing how far water will spread in a particular flood, either a past flood event or a flood that could happen in the future. In the case of a recent flood they are prepared by using all available information on the extent of the flood and the height of the flood. Water level gauges, surveys taken at the time of the flood, photographs, markers, and personal accounts all provide information that is used to plot the points on the map which are then joined to form the flood line. In the case of a "design flood," which indicates flooding that could occur in the future, it is necessary to use existing records to carry out complex hydraulic and mathematical calculations to determine the height of flood that a given amount of water passing down the valley will produce. Once the elevation of the water is known, this can be plotted on a base map which has contours on it. Since the surface of the flood slopes downstream towards the sea, several points have to be established before they can be joined together to indicate the gently sloping flood line.

The gathering of information and the subsequent undertaking of mathematical calculations in order to define a "design flood" is often termed a hydrotechnical study. A hydrotechnical study has two major components: hydrology and hydraulics. The hydrologic component involves the determination of the response of a river basin to major climatic events such as rainstorms, rapid snowmelt, or a combination of both. The output from the hydrologic component, in the form of flood flows for specified probabilities, serves as the major input to the hydraulic component which will define the response of the river reaches under consideration. The final output is the water surface elevations along the river reaches associated with flows of a specific recurrence interval.

The hydrotechnical studies deal with the quantity of water that would occur during a flood event. For flood risk mapping purposes it is often the largest flood that could occur on the average during a period of so many years, say 20 or 100 years.

The hydrotechnical studies also determine how high the water level will come when this amount of water passes down the valley. When these levels have been calculated for various locations along the river they can be plotted on the contoured map as flood lines. Thus, flood lines are usually prepared for floods that are likely to occur about once in 100 years and once in 20 years with these recurrence intervals in years defined on the basis of flood flows.

Designation of Flood Risk Areas

Under the Flood Damage Reduction Program, the first step in developing effective methods of cutting the public cost of flooding is the mapping of flood prone areas. Once this has been completed, both the federal and provincial governments have agreed to modify government aid to development in the community concerned.

Under the terms of the Canada-New Brunswick Flood Damage Reduction Agreement, Flood Risk Areas and, where applicable, Floodways may be officially designated by the governments of Canada and New Brunswick. The Flood Risk Area includes all land that would be flooded at least once in a 100 years. It may also include other land that was flooded during the past. The Floodway is that portion of the flood risk area, including the

area normally occupied by the river, in which most of the floodwaters are conveyed. In New Brunswick, the floodway is often defined as the area that would be inundated on an average of once in 20 years.

Such designations do not require any immediate action by individual property owners. However, with regard to future development on such lands, the Flood Damage Reduction policies of both the federal and provincial governments may have an effect on subsequent decisions by the individual property owner. The federal and provincial governments have agreed to restrict their support of new development in flood risk areas that have been designated. Certain types of developments may not be financially supported by either government or by any of their departments, agencies, or crown corporations. For example, an owner of property in the Floodway will be unable to obtain financial assistance from either of the two governments for new construction on such land. This applies to major extensions to existing buildings as well as completely new construction.

For property owners outside the Floodway, but within the remainder of the Flood Risk Area (often called the Floodway Fringe), government-sponsored financial assistance for construction and development will be available if flood-proofing measures are incorporated in the design of the project.

Property-owners in either area can proceed with a new construction project by obtaining financial assistance from non-government sources, unless local zoning controls prevent this approach. It is important to point out, however, that any such new construction within a flood risk area may not be eligible for any future government-sponsored flood damage compensation programs in the event of a flood.

To date, six areas in New Brunswick have been designated as listed in the table below (see Table 2):

Table 2

DESIGNATION OF FLOOD RISK AREAS

	BASIS OF DESIGNATION		DATE OF DESIGNATION
	Floodway	Flood Risk Area	
Perth-Andover	1:20 year flood	1:100 year flood	February 15, 1980
Fredericton	1:20 year flood	1973 historic flood	February 15, 1980
Lower Fredericton-Lincoln Area	1:20 year flood	1973 historic flood	February 25, 1982
Oromocto-Lower Jemseg	No floodway	1973 historic flood	March 31, 1981
Sussex	1:20 year flood	1:100 year flood	September 13, 1982
Keswick River	1:20 year flood	1:100 year flood	March 3, 1983

Floodways, as well as flood risk areas, have been designated in all areas except Oromocto to Lower Jemseg. In this case the restrictions normally applied only to the floodway apply to the entire flood risk area. Property owners would be unable to obtain financial assistance from either of the two governments for new construction on this land, including extensions to existing buildings. However, this funding restriction does not apply to certain types of agricultural or recreational development which are unlikely to be affected greatly during a flood event.

The designated maps are those produced at a larger scale in order to depict a smaller area in greater detail. Each of these maps contains a designation note which explains the basis of the designation (that is, which flood events were used to define the Flood Risk Area and Floodway).

The multi-colour line maps are not designated but are for public information purposes only. Much of the attention has been focussed on the public information rather than designation aspects of flood risk mapping. However, it should be noted that flood risk areas in New Brunswick have been designated and that the designation is intended to remain in effect indefinitely.

Flood Hazard Mapping

The discussion in this paper so far has centered on the flood risk maps produced under the Canada-New Brunswick Flood Damage Reduction Program in accordance with standards prescribed for flood plain delineation and mapping defined by Environment Canada. Compliance with these standards requires that detailed hydrologic and hydraulic studies be undertaken in order to define the flood lines to be shown on specially produced topographic mapping. It soon became apparent that there were insufficient funds available for the production of flood risk maps, in accordance with these specifications, for all the flood prone areas in the province.

Alternative cheaper mapping of flood prone areas has been referred to as flood hazard mapping. Flood hazard maps can be developed using existing mapping and less refined techniques for delineating flood lines. These maps can serve as valuable warning information and can provide the basis for guidelines for flood-proofing. It is unlikely that permanent "designation" would be made using these maps.

The major flood prone areas of the province have been mapped and there have been no legal challenges to the depiction of flood lines or the designation of flood risk areas. However, given the present economic conditions, it does not seem reasonable to continue mapping less populated and less-developed flood plains using the present standards of flood risk mapping. Nor would it be worthwhile to prepare topographical maps with a half-metre contour interval if the hydrotechnical information could not be so accurately defined. In most cases, existing mapping will suffice.

With the exception of two projects nearing completion, there are no immediate plans to produce further flood risk maps in New Brunswick. There is presently no mechanism in place for the production of less sophisticated and less expensive flood hazard mapping, but it seems reasonable to expect that this will be the way in which most of the remaining flood prone areas of New Brunswick will be mapped in due course.

* * *

GEODESY FOR MAP LIBRARIANS, PART IV
THE MEASUREMENT OF LATITUDE AND LONGITUDE

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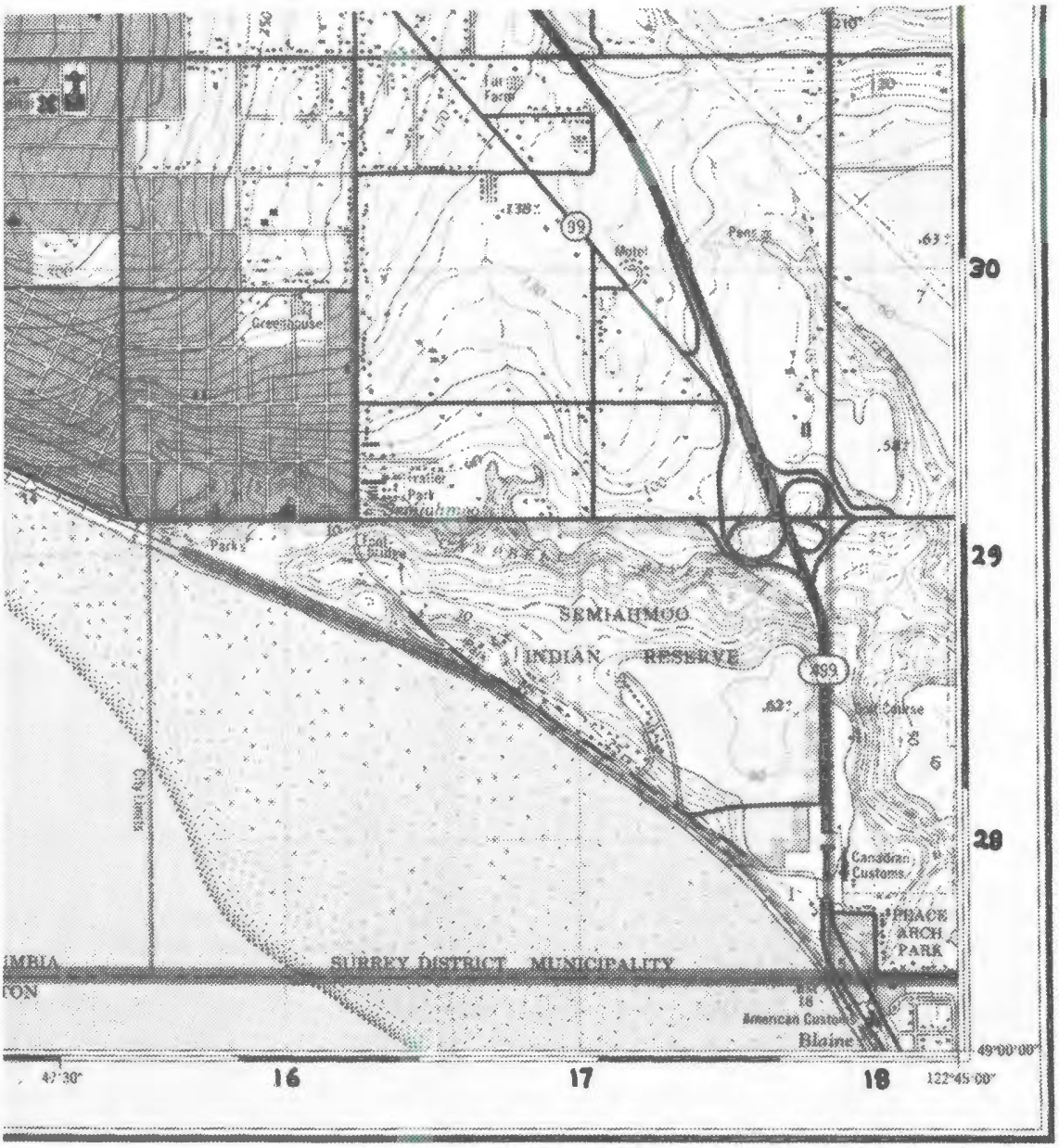
Map librarians are often called upon to assist their clients in the use and interpretation of maps. Sometimes they find themselves defending the maker of the map against charges of gross incompetence or even wilful and malicious stupidity. The following is a hypothetical reference interview illustrating such a situation.

A student comes to the reference desk cluthcing a copy of the 1:25,000 NTS sheet 31 G/2c, White Rock, B.C. (see Figure 1).



Deuxième édition mise à jour par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Renseignements à jour en 1968. Imprimée en 1971

Figure 1 : The International Boundary at White Rock, British Columbia.

"This map was surveyed by a bunch of drunks," is his opening remark. "Look where they put the International Boundary! It's supposed to be on the 49th parallel, and they have it at least 300 meters to the north. They have given the Americans thousands of hectares of good Canadian farm land!"

The map librarian first calms the student down, and then seeing that he is genuinely disturbed at this apparent error in surveying goes on to explain the difference between an astronomic and geodetic latitude. The distinction between the two is the subject of this article.

Positioning Methods

There are relative and absolute methods for the determination of the latitude and longitude of a point. The relative method, where one calculates the position of a point by measuring the bearing and distance to it from a point of known latitude and longitude, is the heart and substance of classical geodesy. The absolute method, where the position of a point is calculated by observations on celestial bodies, is the fundamental task of astro-nagivation. In geodetic surveying, both methods are used together to improve the accuracy of geodetic networks. A closer look is taken below at both relative and absolute methods.

Classical Geodesy

Until about twenty years ago the standard method of surveying a country, large or small, was first to set out a network of large survey triangles over the country. The geodetic survey stations were at the angles of these triangles. Each station was carefully marked by a small brass disk set in bedrock or concrete, and the bearings and distances to all other stations visible from the station were carefully determined either by direct measurement or by trigonometric calculation. These large triangles were subdivided by smaller triangles or by traverses to provide more known points (i.e., points of known latitude and longitude) for use in mapping, in engineering, and in property surveying.

The arrival of satellite geodesy has changed these basic methods in large countries [as we shall see in the next article in this series] but for the moment let us consider the calculations of classical geodesy. The fundamental calculation is the determination of the latitude and longitude of a point having been given its bearing and distance from a point of known location. If the earth were a perfect sphere this would not be a complicated computation, and the formulae given in Parts I and II of this series could be employed. But the earth is not a sphere and spheroidal calculations must be used. These are too lengthy (and too tedious) to be included here. Should any reader have a special interest in such work, he or she can write to the editor of the Bulletin for a full description and worked example.

As has been pointed out, the method of relative positioning used in classical geodesy goes from point to point, determining the latitude and longitude of each new point by calculating the difference in its latitude and longitude from a previous point. Obviously there must be a starting point for the whole system and there is. For the North American Horizontal Datum of 1927 the fundamental station is near the centre of the continent at Meade's Ranch in Kansas.

Astro-Navigation

Astro-navigation and survey astronomy obviously have the same roots. The basic fundamentals of astro-navigation go back to the days of prehistory when brave men started to make sea journeys up and down the Atlantic coast of Europe and Africa. When their ships were on the sea beyond the sight of land, the sun was their guidepost by day and the stars by night. The movement of the sun across the sky from east to west was obvious, and a similar movement of the stars was also noticed. These early navigators must also have noticed that certain stars moved less than the others, and one, far to the north, moved hardly at all. The next step was the extremely valuable observation that the elevation of this motionless star was related to the northing of certain ports along the Atlantic coast. If one wanted to sail to Iceland, say, then one could steer north until this North Star was about 65 degrees above the horizon. To reach the port of Dakar, the North Star must be brought down to just 15 degrees above the horizon.

This relationship between the elevation of the pole and the latitude of the observer is one of the fundamental facts of both navigation and survey astronomy. The simple geometric connection between elevation and latitude is explained in Figure 2. Of course there is no bright star exactly at the pole, but the North Star is very close. Navigators of long ago, such as Champlain and Hudson, knew how to adjust the elevation of the star or sun by the amount of the declination of the celestial body observed. [The declination is the angular distance a star or the sun is north or south of the celestial equator. Declinations are listed in nautical almanacs.]

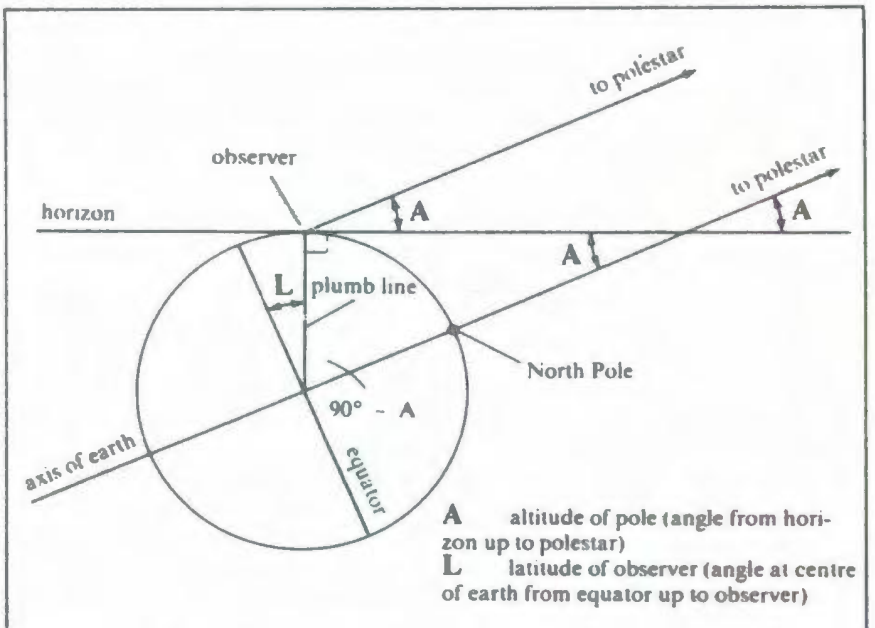


Figure 2 Latitude by observation on the polestar. The axis of the earth points to the polestar. Because of the star's distance from the earth the line from the observer on the surface of the earth to the star may be considered to be parallel to the earth's axis. This makes the angles marked A equal. At the centre of the earth the angle 90° - A + L = 90°. Therefore A = L. In other words, the angle up to the pole equals the observer's latitude.

Figure 2 : The relationship between elevation of the polestar and latitude

The following formula is convenient for computing the latitude (L) of the place of observation in the Northern Hemisphere:

L = 90° minus the meridian altitude of the sun, plus or minus the sun's declination at the time of observation. Add if the declination is north, subtract if it is south.

Longitude is closely connected to time. The longitude of a point can be expressed in degrees, minutes and seconds, or in hours, minutes and seconds, east or west of the Prime Meridian. As there are 360 degrees in a full circle and 24 hours in a mean solar day, it follows that there are 15 degrees of longitude in an hour of longitude. The pocket calculator is very handy for converting time to arc and vice versa.

Problem 1: Change 85° 31' 28" west longitude to time.

Solution

1. Change 28" to a decimal of a minute by dividing by 60: (0.46667)
2. Add 31' and change to a decimal of a degree by dividing by 60: (0.52444)
3. Add the sum to 85 and divide by 15: (5.70163)
4. If minutes and seconds are required subtract whole hours and multiply decimal fraction by 60, then subtract whole minutes and multiply decimal fraction by 60: (5h 42m 5.8s)

Before the days of electronic ship-positioning devices, the daily routine on a well navigated ship would start at first light, when the stars and the horizon were both visible, with the reading of the elevation of a star in the eastern or western sky. The local (or ship) time can be calculated from such a reading. The longitude of the ship is the difference between local time and Greenwich time. The latter is kept on the ship's chronometer; a simple subtraction of local from Greenwich time gives the ship's longitude.

At noon when the sun is on the meridian, its elevation is read. The famous painting by Winslow Homer (Figure 3) shows two seamen taking alternate elevation readings to catch the sun at its maximum elevation. With two men taking readings the elevations would be less than a minute apart, and they would note a steady increase, then several minutes without a change, and finally a decrease in elevation. The central time of the pause is Eight Bells (i.e. ship noon) which gives the painting its name. The Greenwich time of ship noon gives a rough check on the longitude. At last light, when the stars and the horizon are again both visible, a time star is read for the evening longitude. All during the day and night a dead reckoning position, calculated from the last astrofix by applying the course bearing and ship speed, is kept so that the ship's position is always known in case of emergency.

Problem 2: On a ship in the North Atlantic the sun was observed on the meridian at 14h 31m 15s GMT. The elevation of the sun was 63° 21' 13". The declination of the sun at that date and time was 14° 16' 17" north. What was the position of the ship?

Solution

The difference between ship noon and Greenwich noon in this example is 2h 31m 15s.

1. Change this difference from hours, minutes and seconds to seconds: (9075s)

2. Multiply by 15 to get arc seconds: (136,125")
3. Change arc seconds to degrees by dividing by 3600: (37.8125°)
4. Change to degrees, minutes and seconds: (37° 48' 45")

The latitude (L) is computed using the formula given previously:
L = 90° minus 63° 21' 13" plus 14° 16' 17" = 40° 55' 4" north latitude.

Precise Astronomic Positioning

The latitude and longitude of a point can be measured with considerable accuracy using sensitive surveying instruments and radio time. There is, however, one insurmountable factor that affects all precise measurement of the elevation of the sun or stars, and this is that the pull of gravity is rarely straight down. Although this "deflection of the vertical" is minute, it is sufficient to cause errors in the measurement of the elevation of the stars.

Survey instruments used for measuring elevations are put in a horizontal plane by sensitive level bubbles, but if these are pulled off level by heavy material in the earth's crust, for example to the north of the place of observation, then the instrument will be tipped a small amount upward to the north. This in turn will cause the reading of northern star elevations to be less than they should be. The end result is that an astronomic latitude of 49°, say, will be read where it is actually 49° plus a few seconds. This is indeed what happened in the boundary survey in British Columbia as noted by the angry young man at the beginning of this article. If he had traced the 49th parallel across to Manitoba he would have found that the boundary line is just as often south of the 49th parallel as it is to the north.

The surveyors employed on the survey of this boundary were instructed to place the monuments on the astronomic 49th parallel. The reasoning behind this was that monuments so placed could always be replaced by direct measurement if the original marker was destroyed. The stars and the physical properties of the earth would always form a datum for such measurement.

In this century the American and Canadian geodetic nets have tied in the boundary markers, and geodetic values are available for each one. In accordance with long standing custom in property surveys, monuments marking property boundaries are never changed to accommodate newer survey values. The rule that monuments hold over measurements is observed internationally as it is on the smallest parcel survey.

It is common practice in geodetic surveys to measure a certain number of stations in each net astronomically. Such stations are called LaPlace stations (after the French astronomer Pierre-Simon, Marquis de LaPlace). They provide valuable geophysical information by disclosing the direction and extent of the deflection of the vertical. One of the reasons for choosing Meade's Ranch as the fundamental station in the 1927 North American Datum was that the deflection there is practically zero.

During the recent two decades the methods of classical geodesy have largely been displaced by observations on artificial satellites. This geodetic system will be described in the next and last article in this series.

* * *

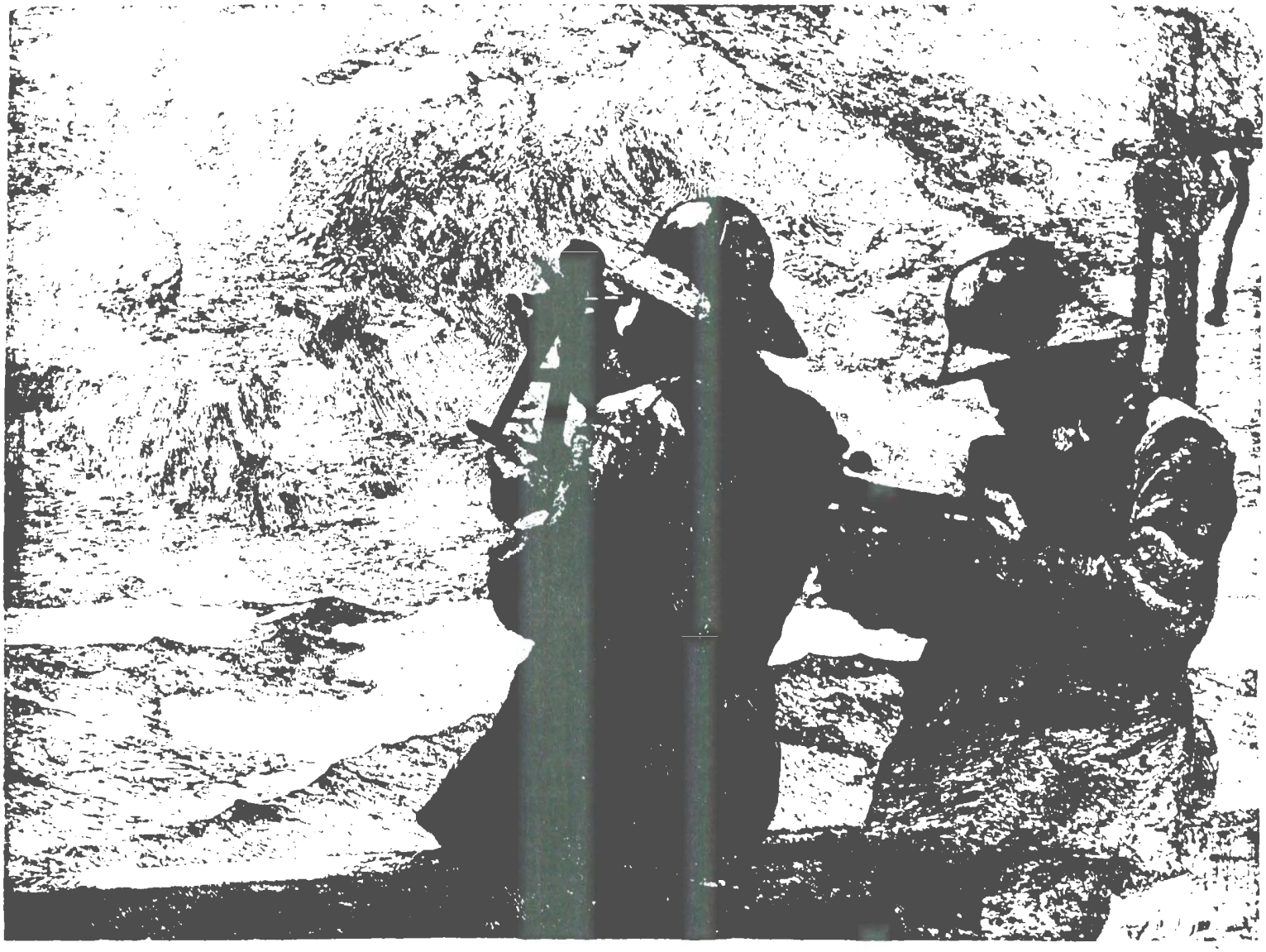


Figure 3 : Eight Bells, an engraving by Winslow Homer (1836-1910)

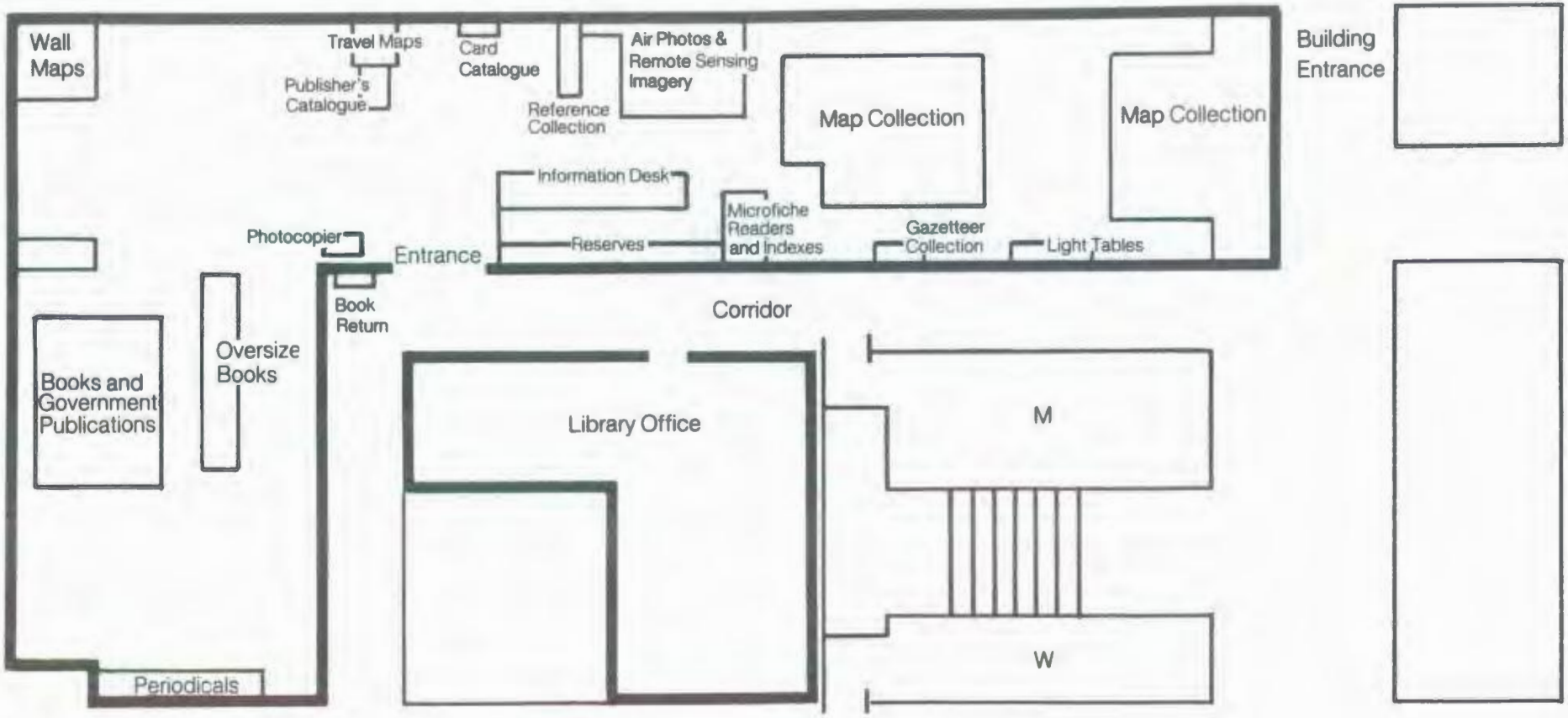
EDUCATIONAL LITERATURE

The University Map and Design Library is a branch of the University of Waterloo Library. The brochure reproduced on the following two pages shows the floor plan of the library (for scale purposes, please note that the library is approximately 23 feet wide in the vicinity of the map collections) and provides information about hours of opening, loan periods, and fines.

This brochure is the fifth in a series which have appeared regularly in the Bulletin under the heading "Educational Literature." The objectives of this program are two-fold: to reproduce examples of a variety of educational documents for the benefit of those who comtemplate preparing or revising their own, and, secondly, to provide interesting, useful information concerning the size, strengths, and loan policies of other map-oriented institutions and collections.

UW Library

UNIVERSITY MAP & DESIGN LIBRARY FLOOR PLAN



MINI-GUIDE TO THE U.M.D. LIBRARY

Hours	Library Open	Circulation Service	Information Service
Mon. - Thurs.	8:30 a.m. - 9:00 p.m.	8:30 a.m. - 9:00 p.m.	9 a.m. 4:30 p.m.
Fri.	8:30 a.m. - 4:30 p.m.	8:30 a.m. - 4:30 p.m.	9 a.m. - 4:30 p.m.
Sat.	1:00 p.m. - 5:00 p.m.	1:00 p.m. - 5:00 p.m.	NO SERVICE
Sun.	1:00 p.m. - 6:00 p.m.	1:00 p.m. - 6:00 p.m.	NO SERVICE

SPRING TERM HOURS AND CHANGES WILL BE POSTED AT LIBRARY ENTRANCE

UMD Library Collections

The UMD Library houses two major collections:

Cartographic Material: Included in this collection are maps, atlases and other cartographically related books, gazetteers, aerial photographs, and remote sensing imagery. The map collection consists of topographic maps, navigational charts, street plans, and a wide assortment of subject-specific maps. The geographic emphasis of the cartographic collection is upon Canada, particularly Southern Ontario.

Design Material: This specialized core collection consists of visually oriented materials which support the teaching of Design, and reference publications such as architectural periodical indexes, graphic standards, and dictionaries of design terminology.

In addition, the UMD Library houses senior honours essays (undergraduate essays) written by students in Geography, Urban and Regional Planning, and Architecture

Loan Periods:

1. **Books:** a) Standard Loans - 2 weeks for all users
   b) Extended Loans - on request - to graduate students and faculty
   ALL BOOKS ARE SUBJECT TO RECALL
2. **Periodicals:** a) 2 days (3 days counting day charged out)
   b) latest issue - for use in library only
3. **Reference** (REF) and Oversize Books - for use in library only
4. **Maps** - 2 weeks for UW students, faculty and staff; reference maps and special maps - for use in library only
5. **Aerial Photographs and Imagery** - 2 days for UW graduate students and faculty
6. **Senior Honours Essays** - for use in library only
7. **Reserve Material**
   a) Overnight
   Mon. - Thurs., Sun - signed out after 3:00 p.m. - due 10.00 a.m. next day
   Fri., Sat. - signed out after 3:00 p.m. - due 1.30 next day
   b) 3-day - signed out after 3.00 p.m. - due 10:00 a.m. on third day following
   c) Reading Room - for use in library only

Renewals

Only barcoded items which are not circulating for term loan and which are not overdue can be renewed by telephone

Mon. to Thurs. 8:30 a.m. - 10:00 p.m. 885-1211 ext. 2616 or
Friday, 8:30 a.m. - 6:00 p.m. 885-1225 when the Switchboard is closed

Saturday, Sunday - NO TELEPHONE RENEWALS

All other materials must be brought to the library for renewal.

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Recalled Material: $1.00 per day per item

Reserve Material: Reading Room - $5.00 per day, no maximum
Overnight and 3-day - 25¢ per hour or part thereof, from 10:00 a.m. until 5:00 p.m.,$5.00 per day, thereafter, no maximum

Book Return Bins on Campus

These are for regular loan books only. DO NOT USE them for Reserve Books, Interlibrary Loans, soft-covered periodicals, maps or other non-print materials.

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Replacement Charges for Lost UMD Library Materials

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Monograph	45.00	11.00	56.00
Periodicals			
Bound	52.00	11.00	63.00
Unbound	5.00	11.00	16.00
Government Publications	3.00	11.00	14.00
Maps	5.00	11.00	16.00
Aerial Photographs	3.00	11.00	14.00
Theses	9.00	11.00	20.00
Microfiche/Cards	3.00	11.00	14.00

Instruction in Using the Library

Instruction, for individuals or groups, can be arranged at the Information Desk

FOR FURTHER INFORMATION, CONSULT THE LIBRARY HANDBOOK, OR ASK AT THE INFORMATION DESK.

August 1984

MICROFICHE RECORDS OF CANADIAN TOPOGRAPHIC SERIES

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University of Western Ontario
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In the September 1983 issue of the A.C.M.L. Bulletin it was announced that the historical records of 1:50,000 NTS series are being offered for sale in microfiche form. This announcement was a godsend to all those who have laboured on the collection and documentation of Canadian topographic series. Orders were placed by a number of map librarians and a year and a half later some of them received from the National Map Collection the microfiche set. This writer's package did not include the "introductory material, glossary, etc. ....in both English and French," as promised in the original advertisement, but this shortfall proved to be a minor problem compared to other deficiencies.

A novice in this realm of cartographic Canadiana may wonder: why has the announcement of the publication of this set of microforms caused some map librarians to rejoice in anticipation of a definitive record for at least some topographic series? The reason is quite simple--there are no published records of major Canadian topographic series. Therefore the task of assembling the complete set of a particular scale, or of a particular area, or time period becomes a hit-and-miss affair, tied to prolonged and costly (in terms of time and funds) searches and correspondence, and visits to major map collections (although, as it is now known, no single collection in Canada can lay claim to a complete set of Canadian topographic maps).[1]

The lack of published records, in any form, is especially trying in times when regional research based on intensive studies of time-series is gaining in popularity. Let us clarify for the un-initiated that the term "time-series," relatively recently coined, refers to maps of the same type (in this case, topographic), dealing with the same area, at the same scale, over a period of time. Through comparisons of various editions of a time-series set, a researcher can establish physical and cultural changes which have transpired in a given area. Herein lies the importance of these sets and the reason for the increasing attention they engender among map librarians.[2]

Even a brief discussion of this topic ought to suffice to point out that great importance should be attached to the accuracy of the time-series records, especially those with a national stature. The microfiche set offered by the National Map Collection goes a long way towards disproving this point. Let us consider at least some of the types of errors common to this set, while keeping in mind that the list is by no means complete, and that each type of error or omission could be illustrated by dozens, if not by hundreds, of examples.

1. The greatest difficulty for a map librarian lies in the fact that the information on cards, reproduced on microfiche, lacks any indication of the scales involved (1:62,500; 1:63,360; 1:50,000), and does not identify the corporate authors, which include the Department of Mines, the Geological Survey, the Army Survey Establishment, and various direct predecessors and cousins of the current Department of Energy, Mines and Resources. Consequently, by including all published maps without full

annotation, the genealogy of many maps is muddled, rather than clarified.

2. Some map records are missing. Example: Fiche 34. Under NTS 49 one sheet is shown and that as "not published," while there are in fact at least nine sheets published for that block, some already in their second edition.

3. Some records are not complete. Example: Fiche 9. For NTS 21 L/15 the entries show 1920 and 1924 editions (although these were 1:63,360 and not 1:50,000 maps), but other editions (1933, 1944, 1950) are left out. Example: Fiche 31. NTS 82 O/1--fiche shows two 2nd editions (1950, 1951), but the 1941 edition is missing. NTS 82 N/8--1945 edition missing.

4. Cards are not always in alpha-numeric order. Example: Fiche 9. A user may conclude that there are no entries for certain maps, since they are reproduced out of sequence: 21 O/13 is followed by 21 P/12; 21 P/15 is followed by 21 O/14.

5. Editions shown incorrectly. Example: Fiche 2. NTS 11 E/16W, shown on fiche as 1st edition (1952), while the map states that it is the 2nd edition. Example: NTS 11 G/13. Two maps are shown to be 1st editions (1923 and 1936). Both are 1:63,360 scale. The third edition is labelled as second, while it is actually the first edition of the new 1:50,000 series. Confusing? Consider someone grappling with the problem for the first time!

6. Correct dating of maps is of crucial importance for the time-series collection. Yet wrong dating on cards appears to be a common occurrence. Example: Fiche 42. NTS 62 H/1: fiche--1949, map--1951. NTS 62 H/2: fiche--1968, map--1967. Example: Fiche 43. NTS 62 N/2: fiche--1964, map--1962. Example: Fiche 81. NTS 102 I/8E: fiche--1958, map--1957. Example: Fiche 84. NTS 105 D/11E: fiche--1958, map--1957.

7. Entries on cards do not differentiate between the variants of the same edition. Maps bearing the same edition number were often produced for different institutions, resulting in radically different graphic content. In British Columbia, for example, the Army Survey Establishment edition (ASE) shows the UTM grid and no cadastral information, while the Survey and Mapping Branch in its variant of the same edition shows no UTM grid but does show the licencing information, which for certain parts of the country is of utmost significance (boundaries of applications under the Land Act, Timber Leases or Licences, etc.). Example: Fiche 73. NTS 93 B/16.

In other cases, edition variants show the quality of roads. Example: NTS 22 C/14E, 1st edition. Two variants, both dated 1953: one shows all roads uniformly; the other variant adds colour to classify roads into three qualitative categories.

8. Name changes are not indicated on cards. Example: Fiche 30. NTS 41 J/7 was originally called Metinenda but was later changed to Elliot Lake.

9. Additional designations of editions shown on maps are not noted on cards; designations on cards ("provisional," "not published") are not shown on maps. Example: Fiche 8. NTS 21 E/3. Fiche shows 4th edition as "provisional," which is not indicated on the map.

10. Similar problems appear on the microfiche for the 1:250,000 topographic series, which were added to the 1:50,000 set as an unexpected but welcome bonus. Example: Fiche 1. NTS 21 E. 1953 edition is labelled as 1st edition. 1941 edition, produced at 1:253,440 is not shown. This would seem to be the normal situation. However, in other cases, 1:253,440 editions, the forerunners of the 1:250,000 series, are shown and accorded sequential edition numbers. Example: Fiche 4. NTS 52 P--1932 edition at 1:253,440 is shown as the 1st edition; NTS 52 C--1931, 1940, and 1948 issues at 1:253,440 scale are shown as 1st, 2nd, and 3rd editions. The records being discussed are just that, a reflection of what has already transpired, but a general explanation of these inconsistencies and notes for individual sheets is badly needed in order to clarify the otherwise incomprehensible state of affairs.[3]

One would be very much tempted to pass some sort of a harsh judgement on these documents had it not been for the fact that they were compiled over a long period of time, as an in-house listing, lacking the continuity of input and an understanding of what a map librarian "in the field" is anxious to obtain. In addition, it is the only document of its kind available at this time and one is resigned to grudgingly accept it as something which is better than nothing.

Having made these concessions for a product which could easily fit under the "4-I" designation (Inaccurate, Incomplete, Inadequate, Inconsistent), one is forced to underscore once again that the responsibility for producing such listings, and of a much higher grade, rests entirely on our national institutions. How else are they to know what they have and how complete are their holdings?

Footnotes

1. A recent inventory of topographic maps of Ontario, commissioned by Ontario Hydro, shows that neither the National Map Collection nor the Ontario Archives have the complete time-series coverage for that area.

2. Map librarians in Ontario universities (OCUL Map Group) are considering pooling their resources to create two time-series sets of 1:50,000 maps.

3. For an early discussion of these problems refer to "National Topographic Series: In Search of Missing Editions," A.C.M.L. Bulletin 30, 1979.

* * *

RECENT ACQUISITIONS

compiled by Beth Ray
Carleton University Map Library
D299 Loeb Building
Ottawa, Ontario

Contributors: CU - Carleton University Map Library
DU - Dalhousie University Map Library
GSC - Geological Survey of Canada Map Library
MU - Memorial University Map Library
OOU - University of Ottawa Map Library
UBC - University of British Columbia Map Library
UT - University of Toronto Map Library

MAPS

NORTH AMERICA - Maps

OOU — Epicenters of northeastern United States and southeastern Canada, onshore and offshore ; time period 1534-1980 / Gary N. Nottis. - Scale 1:1,000,000. - Albany, N.Y. : State Education Dept., University of the State of New York, 1983.
(Map and Chart Series ; 38).

DU — Geomorphic features of the western North Atlantic continental slope between Northeast Channel and Alvin Canyon as interpreted from Gloria II long range sidescan sonar data. - Scale 1:500,000. - Reston, Va. : U.S. Geological Survey, 1982.
(USGS Open File ; 82-0728).

DU
OOU — Holocene marine sediments on the middle and outer continental shelf of the Beaufort Sea north of Alaska / David A. Dinter. - Scale 1:500,000. - Reston, Va. : U.S. Geological Survey, 1982.
(Miscellaneous Investigations Series ; I-1182-B).
Two sheets and one report.

DU
OOU — Map, cross sections, and chart showing Late Quaternary faults, folds and earthquakes epicenters on the Alaskan Beaufort Shelf / Arthur Grantz and David A. Dinter. - Scale 1:500,000. Reston, Va. : U.S. Geological Survey, 1983.
(Miscellaneous Investigations Series ; I-1182-C).

DU
GSC — Mesozoic igneous rocks of northern New England and adjacent Quebec. - Scale 1:690,000. - Boulder, Colo. : Geological Society of America, 1984.
(Map and Chart Series ; MC-49).
Accompanied by explanatory notes.

CANADA

UT

Canada / produced by the Geographical Service Directorate, Surveys and Mapping Branch, Energy, Mines and Resources Canada ; design and drafting by the Cartography and Toponomy Division. - Scale 1:5,000,000 ; modified polyconic proj. (W141° -- W52°/N85° --N41° 45'). - Ottawa : Energy, Mines and Resources Canada, 1983.
(MCR 125).
Available in English and French.

CU
UBC

Canada, electricity generation and transmission / produced by the Geographical Services Directorate, Surveys and Mapping Branch, Energy, Mines and Resources. - Scale 1:5,000,000 - Ottawa : Energy, Mines and Resources Canada, 1983.
(National Atlas of Canada. - 5th ed. ; MCR 4001).

OOU

Comprehensive Native claims in Canada = Revendications globales des autochtones au Canada / Office of Native Claims. - [Ottawa] : Indian and Northern Affairs Canada, 1983.
Accompanied by report entitled: Fact sheets on Native claims.

DU

East coast marine weather forecast areas. - Scale ca. 1:12,000,000 - [S.l.] : Atmospheric Environment Service, 1984.
Free

OOU

Lithostratigraphic map of the Abitibi Subprovince / Ontario Geological Survey and Québec Direction générale de l'exploration géologique et minérale. - Echelle 1:500,000. - Toronto : Ontario Ministry of Natural Resources ; Québec : Ministère de l'énergie et des ressources, 1984.

UBC

Oil and natural gas resources of Canada. - Various scales. - Ottawa : Geological Survey of Canada, 1983.
(GSC Paper 83-31).
A 59 page booklet, with 74 maps, cross-sections and charts.

UBC

Pacific Fishery Management Areas. - Scale ca. 1:1,070,000 and 1:1,100,000. - Ottawa : Fisheries and Environment Canada, 1983.
Based on Hydrographic Charts L(C)-3001 and L(C)-3002 reduced in scale.
Two sheets.

OOU

[Scotian shelf and slope] Bathymetry 1:1,000,000. - Scale 1:1,000,000. - Ottawa : Canadian Hydrographic Service, 1984.
(Open File 1010).

Atlantic Provinces

UBC Atlantic Canada. - Scale ca. 1:1,500,000. - Toronto : Rolph McNally, 1983.

DU Map of petroleum interests, Maritime Provinces of Canada. - Scale 1:2,170,000. - Dartmouth, Nova Scotia : Marcie Macquarrie, President and Publisher, Atlantic Energy News, 192 Joseph Zatzman Dr., 1983.
Free

Alberta

UBC Alberta provincial base map 1:1,000,000 [with] forest classification. - Scale ca. 1:1,000,000. - Edmonton : Alberta Energy and Natural Resources, 1983.

UT Annexation map, boundaries of the city of Calgary and metropolitan Calgary ... 1893-1983. - Scale ca. 1:140,000. - Calgary : City Planning Dept., 1983.

GSC Areal extent of major coal zones in the plains region of Alberta. - Scale ca. 1:3,000,000. - Calgary, Energy Resources Conservation Board, 1982.
Figure 7a.

UBC Coal fields, deposits and mines in Alberta. - Scale 1:1,250,000. - Calgary : Energy Resources Conservation Board, 1982.
This is Figure 1a of E.C.R.B. Report 83-31, but is sold separately.

UT Generalized land use classification map, city of Calgary. - Rev. [ed.] . - Scale [1:18,000] . - Calgary : City Planning Dept., 1982.

UBC Provincial base map. - Scale 1:1,000,000. - Edmonton : Alberta Energy and Natural Resources, 1983.

GSC Surface mineable coal in the plains region of Alberta. - Scale ca. 1:500,000. - Calgary : Energy Resources Conservation Board, 1982.
Two sheets : 7b-north half ; and 7c-south half.

GSC Surficial geology Sand River area, Alberta, NTS 73L / M. M. Fenton and L. D. Andriashek. - Scale 1:250,000. - [Edmonton?] : Alberta Research Council, 1983.

British Columbia

UBC Areas underlain by economic reserves of coal, south-eastern British Columbia. - Scale 1:250,000. - Victoria : Ministry of Energy, Mines and Petroleum Resources, [1983] .

OOU Biogeoclimatic units Victoria-Vancouver 1:500,000. - Scale 1:500,000. - Coquitlam : Canadian Cartographic Ltd., 1983.

UBC Fishing and hunting map of South Central, B.C. - Scale ca. 1:253,440. - Kamloops : Kamloops and District Fish and Game Association, [198-?].

UBC Geomorphology of a submarine landslide, Kitimat Arm, British Columbia. - Scale 1:10,000. - Ottawa : Geological Survey of Canada, 1983.
(GSC Open File ; 961).
Five sheets.

UBC Geothermal potential of British Columbia. - Scale 1:2,000,000. - Victoria : Ministry of Energy, Mines and Petroleum Resources, 1983.

CU
UBC Provincial Parks of Vancouver Island. - Scale 1:800,000. - Victoria : Ministry of Lands, Parks and Housing, Parks and Outdoor Recreation Division, 1984.

UBC Real Estate Board of Greater Vancouver book maps, 1983 ... - Various scales. - Vancouver : Real Estate Board of Greater Vancouver, 1983.
Thirty-three page booklet with maps and texts. Contains maps of each of the Municipalities in the Greater Vancouver Regional District with street indexes and short descriptions of the Municipalities.

UT Transit guide, [Greater Vancouver]. - Scale [ca. 1:83,750]. - [Vancouver] : Metro Transit Operating Company, 1982.

OOU Transportation network and industrial sites of Lower Mainland British Columbia / CP Rail Industrial Development - Scale 1:275,000. - Coquitlam : Canadian Cartographics Ltd., 1982.
Seven maps.

UBC Valhalla Provincial Park trail guide. - 3rd ed. - Scale 1:125,000. - New Denver, B.C. : Valhalla Wilderness Society, 1983.

UBC Vernon, your vacation destination. - No scale given. - Vernon, B.C. : Chamber of Commerce, [198-].

Manitoba

CU
UBC Friendly Manitoba, official 1983-84 highway map ... - Scale ca. 1:887,000. - Winnipeg : Dept. of Highways and Transportation, 1983.
Free

UBC Manitoba camping map, 1983. - Scale ca. 1:1,000,000. - Winnipeg : Travel Manitoba, 1983.

Nova Scotia

DU Calculated vertical magnetic gradient map of the Cape Breton Highlands, Inverness, Victoria and Richmond Counties, Nova Scotia. - Scale 1:125,000. - Halifax : Nova Scotia Dept. of Mines and Energy, 1983. Map 83-2.

DU Naturally occurring arsenic contamination of water wells in Nova Scotia. - Scale 1:750,000. - Amherst, N.S.: Maritime Resource Management Service, 1983.

CU
DU A Sensitivity classification of the landscape of Nova Scotia to acidic precipitation. - Scale 1:633,600. - Dartmouth, N.S. : Lands and Integrated Programs Directorate, Atlantic Region, Environment Canada, 1984. Free

Ontario

UBC City map and street guide, London including St. Mary's, Ingersoll, Strathroy, - Scale 1:18,600. - Ottawa : Pathfinders Air Surveys, 1983.

UBC City map and street guide of Sarnia Ontario and Corunna. - Scale 1:13,800. - Ottawa : Pathfinder Air Surveys, 1983.

UT Fishing regulations, [Ontario] . - Scales differ. - Toronto : Ontario Ministry of Natural Resources, 1983. Four maps in a 24 page booklet.

GSC Geochemical series / Ontario Geological Survey. - Scales vary. - [Toronto], 19- .
Map 80612. An example of the microcodule approach to regional geochemical mapping, Southern Ontario, 1983.

UT Go transit system map, [Toronto region] . - Scale [ca. 1:480,000]. - [Toronto] : Government of Ontario Transit, 1983.

UBC Hamilton and surrounding area. - Scale ca. 1:42,000. - [Toronto] : Rolph McNally, 1983.

UT Kolapore; orienteering map / field survey and cartography by O-Sport Map Services. - Scale 1:15,000. - Willowdale : Orienteering Ontario, 1983.

UT Lower Humber River orienteering map / produced by Orienteering Ontario ; fieldwork : Brad Sokol. - Scale 1:10,000. - Willowdale : Orienteering Ontario, 1983.

UT Ontario provincial electoral districts, 32nd parliament ; Ontario's representatives in Canada's 32nd parliament : Ontario / cartography and lithography by Intercontinental Maps and Charts Ltd. - Scale ca. 1:1,212,000 and ca. 1:2,330,000. - Toronto : Ontario Secondary School Teachers' Federation, Political Action Committee, [1983].

CU GSC UT Slope stability study of the South Nation River and portions of the Ottawa River. - Scale 1:50,000. - Toronto : Ontario Geological Survey, 1983.
Northern sheet - Map 2486.
Southern sheet - Map 2487.

OOU Soils of the Regional Municipality of Ottawa-Carleton [for the townships of : Osgoode and Rideau ; West Carleton, Goulbourn and March ; Cumberland] / Ontario Institute of Pedology. - Scale 1:50,000. - Guelph : Ontario Institute of Pedology, 1983.
(Ontario Institute of Pedology Final Preliminary ; FP-20).

UT Street map guide of Northern Ontario containing Sudbury, Thunder Bay, Sault Ste. Marie, North Bay, Timmins .... - Scale 1:25,000. - Whitby, Ont. : Peter Heiler Ltd., [198-?].
Eighteen maps in a 46 page booklet.

OOU Surficial geology = Géologie des formations en surface Hawkesbury - Arundel / S. H. Richard. - Echelle 1:50,000. - Ottawa : Commission Géologique du Canada, 1984.
(Open File = Dossier publique ; 1008)

UT Water resources of the Holland and Black River Basins / cartography by D. Griffin, I. Long, C. Mandy. - Scale 1:100,000 and 1:200,000. - Toronto : Ministry of the Environment, 1982.
(Water Resources Report ; 15)
Seventeen maps on seven sheets.
Accompanied by text : Water resources of the Holland and Black River Basins - Summary / D. J. Vallery, K. T. Wang, V. I. Chin.

Prince Edward Island

DU Geological map of Prince Edward Island. - Scale 1:250,000. - Charlottetown : Dept. of Energy and Forestry, 1983.
Issued with Report 83-1.

Quebec

OOU Les municipalités régionales de comté - Echelle 1:1,250,000. - Québec : Ministère de l'Energie et des Ressources, Service de la cartographie, 1983.

OOU Zonage agricole: "un bilan" - Echelle 1:50,000. - Québec : Commission de protection du territoire agricole du Quebec, 1982.

Saskatchewan

UT City circulation map, [Regina]. - Scale [ca. 1:27,000]. - Regina : Regina Transit, 1983.

GSC Mineral development of southern Saskatchewan / annual revision ; K. G. Jones. - Rev. to Dec.31, 1982. - Scale 1:1,000,000. - [Regina?] : Saskatchewan Energy and Mines, [1983?].

UNITED STATES

OOU Chico demonstration map : illustrating cartographic production principles and techniques in maps printed in from two to seven inks / Pikes Peak Lithographing Company and Allan Cartography. - Scale 1:100,000. - Medford, Oregon : Allan Cartography, 1984.
Supplement to the Annals of the Association of American Geographers, Vol. 74, No. 2, June 1984.

CU
MU Deep South [map] / produced by the Cartographic Division, National Geographic Society ; John B. Garver, Jr., chief cartographer ; Richard J. Darley, senior associate chief ; John F. Shupe, associate chief. - Scale 1:2,566,000. - Washington : National Geographic Society, 1983.
Supplement to the National Geographic, Vol. 164, No.2, August 1983.
$4.00

GSC Generalized structural lithologic and physiographic provinces in the fold and thrust belts of the United States (exclusive of Alaska and Hawaii) / Kenneth C. Bayer. - Scale 1:2,500,000. - Reston, Va. : U.S. Geological Survey.
Two sheets accompanied by legend.
$11.50

DU
GSC Satellite photomap of the northern Rocky Mountains and great plains, Montana, Wyoming and adjacent areas. - Scale 1:1,000,000. - Butte : Montana Bureau of Mines and Geology, 1983.
(Geologic Maps ; GM-32).

UBC Far West. - Scale 1:1,871,000. - Washington : National Geographic Society, 1984.
Part of the Making of America Series.

Illinois

UT Birds-eye-view, central Chicago / Francis J. Pierson. - Scale [ca. 1:5,000]. - Denver : Pierson Graphics, 1982.

Massachusetts

OOU New Bedford Quadrangle, Mass. : a prototype 1:100,000 scale landsat 3 return beam videcon (RBV) image map / Richard S. Williams et al. - Reston : U.S. Geological Survey, 1983.

New Mexico

UBC Geologic map of the Rio Grande Rift and southeastern Colorado Plateau, New Mexico and Arizona. - Scale 1:500,000. - Washington : American Geophysical Union, 1983.

North Dakota

GSC Geologic and topographic bedrock map of North Dakota. - Scale 1:670,000 - [Grand Forks] : North Dakota Geological Survey, 1983.
(Miscellaneous Map Series ; 25).

Utah

GSC Energy resources of Utah. - Scale 1:500,000. - Salt Lake City : Utah Geological and Mineralogical Survey, 1983.
Map 68.

Wyoming

GSC Preliminary geologic map of Wyoming / compiled by J. D. Love and Ann Coe Christiansen . - Scale 1:500,000. - Reston Va. : U.S. Geological Survey , 1983.
Two sheets.

CARIBBEAN

CU
UBC Tourist map of Montserrat, emerald isle of the Caribbean. - 6th ed. - Scale 1:25,000. - Plymouth, Montserrat : Chief Surveyor, Lands and Survey Dept., 1983.
Series E803 (DOS 359).

SOUTH AMERICA - Maps

MU Indians of South America [map] / produced by the Cartographic Division, National Geographic Society ; Richard J. Darley, chief cartographer ; John F. Shupe, associate chief cartographer ; design, John F. Dorr, Laura Robinson Pritchard ; map compilation, Timothy J. Carter. - Scale 1:10,700,000. - Washington : National Geographic Society, 1982.

OOU Tectonic map of Andes Cordillera : South American-East Pacific Plate Convergence Zone / José Frutos. - Scale 1:10,000,000. - Concepcion : Editora Universidad de Concepcion, 1982.

VENEZUELA

UT Mapa vial de Venezuela y plano de Caracas : con informaciones turisticas, servicios publicos y estaciones del metro. - Scale 1:1,500,000 and [ca. 1:23,000]. - [Caracas?] : Promociones Publicitarias C.A., 1982.
Two maps.

EUROPE - Maps

GSC Europe / produced by the Cartographic Division, National Geographic Society. - Scale 1:5,640,000. - Washington : National Geographic Society, 1983.

DU
OOU The European Community : forests / Commission of the European Communities. - Scale 1:4,000,000. - Bruxelles : Commission of the European Communities, 1983.

AUSTRIA

UBC Art treasures of Vienna. - Scale 1:600,000. - Vienna : Austrian National Tourist Office, [198-].

UBC Austria from the inside. - Scale 1:750,000. - Vienna : Austrian National Tourist Office, 1983.

FRANCE

UBC Carte des vins de France. - Scale 1:1,600,000. - Levallois-Perret : Recta-Foldex, 198-.
$2.00

UT France, routes, autoroutes = roads, motorways = strassen, autobahnen. - Ed. 9. - Scale 1:1,000,000 (W4° 30' - E9° 30'/N51° - N42°). - Paris : Institut Geographique National, 1982.

UT Nouveau plan de Paris avec toutes les lignes de métro et RER. - Scale 1:14,500. - Paris : Cartes Tarides, 1982.

GREAT BRITAIN

UBC Isle of Wight. - No scale given. - Newport : Isle of Wight Tourist Board, 1982.

UBC [Scotland] oil and gas developments, February 1984. - Scale ca. 1:3,200,000. - [Edinburgh] : Graphics Group, Scottish Development Department, 1984.

RUMANIA Romania tourist and motor car map. - Scale 1:1,250,000. - [Bucharest] : Institute of Geodesy, Photogrammetry, Cartography and Organization of Territory, for "Carpati -Bucuresti" National Tourist Office, 1983.

SWITZERLAND

UBC Switzerland, holiday in Switzerland by rail, boat, postal motor coach. - Scale 1:600,000. - [S.l.] : Swiss Federal Railroads, 1984.

YUGOSLAVIA

UBC Autokarta Slovenije z istro in Hrvatskim primorjem. - Scale 1:350,000. - Ljubljana : Avtomoto Zveza slovenije, 1984.

AFRICA - Maps

CU
UBC Daily Telegraph map of Southern Africa. - Scale ca. 1:3,000,000. - London : Geographia Ltd., [1982]. Accompanied by one page text.
$4.00

LIBERIA

CU
GSC Geologic map of Liberia. - Scale 1:1,000,000. - Reston, Va. : U.S. Geological Survey, 1983. (Miscellaneous Investigations Series ; I-1480).
$4.00

MALAWI

UT Malawi [relief] / revised and printed by the Department of Surveys. - 5th ed. - Scale 1:1,000,000 ; Transverse Mercator proj. (E32°-E36°30'/S9°20'-S17°10'). - Blantyre : Malawi. Dept. of Surveys, 1983.

ASIA - Maps

OOU Tectonic map of South and East Asia 1:5,000,000 / D. K. Ray. - Scale 1:5,000,000. - Paris : Commission for the Geological Map of the World, 1982.
Seven sheets and one report.

INDONESIA

UBC Indonesia. - Scale 1:4,500,000. - Jakarta : P.T. Pembina, 1983.

GSC Peta hidrogeologi Indonesia = Hydrogeological map of Indonesia. - Scale 1:2,500,000. - Bandung : Direktorat Geologi Tata Lingkumgan, 1983.
Two sheets.

JAPAN

GSC Japan / produced by the Cartographic Division, National Geographic Society. - Scale 1:2,982,000. - Washington : National Geographic Society, 1984.

SAUDI ARABIA

DU Kingdom of Saudi Arabia - Scale 1:4,000,000. - Trumbull, Connecticut : Middle East Information Company, 1983.

SRI LANKA

UBC Sri Lanka. - Scale 1:450,000. - München : Nelles Verlag, [1983].

TAIWAN

DU Metamorphic facies map of Taiwan. - Scale 1:500,000. - Taipei : Central Geological Survey, 1983.
(CGS Special Publication ; 2).

TURKEY

OOU Istanbul 1:10,500. - Scale 1:10,500. - Bern : Hallwag, 1984.

OCEANIA - Maps

AUSTRALIA

UBC Mineral production in Western Australia - year ending 31st December, 1982. - Scale 1:5,000,000. - [Perth] : Surveys and Mapping Division, Dept. of Mines, 1983.

UBC South Australia, the festival state. - Scale 1:2,000,000. - Adelaide : Dept. of Lands, Mapping Branch for the Dept. of Tourism, 1983.

OCEANS - Maps

DU Karta okeanov. - Scale 1:20,000,000. - Moscow : GUGK, 1982.

DU Maps of sediment thickness and depth to basement in the western North Atlantic Ocean basin. - Scale [ca. 1:4,000,000] . - Tulsa, Ok. : American Association of Petroleum Geologists, 1982.

WORLD - Maps

MU Commercial nuclear power stations around the world - operable, under construction or ordered-September 1, 1981 / American Nuclear Society. - Scale not given. - La Grange Park, Ill. : Nuclear News, [1981] . Nuclear News, 555 North Kensington Ave., La Grange Park, Ill. 60525.
Does not cover the United States.

UT Government positions on population growth and family planning in less-developed countries, 1982. - Not drawn to scale. - New York : The Population Council, 1982.
A compendium of data through 1981 / Dorothy L. Nortman and Joanne Fisher.

DU Tectonic map of the earth. - Scale 1:25,000,000. - Moscow : Ministry of Geology, 1982.
Four sheets + 96 page text in Russian.

DU Map showing world distribution of carbon dioxide springs and major zones of seismicity. - Scale 1:40,000,000. - Reston : U.S. Geological Survey, 1984.
(Miscellaneous Investigations Series ; I-1528).

UBC "Turnabout map." - No scale given. - San Jose, CA : Laguna Sales, 1982.
Argentina/Chile at top of map ; Canada/Alaska at bottom.

ATLASES

NORTH AMERICA - Atlases

UT — Drive North America. - Montreal : Reader's Digest Association (Canada) Ltd. in conjunction with the Canadian Automobile Association, 1983.
ISBN: 0888501129

CU — Railroad maps of North America : the first hundred years / Andrew M. Modelski. - Washington : Library of Congress, 1984.
ISBN: 0844403962

CANADA

OOU — Canadian atlas of recreation and exercise = l'Atlas canadien de la récréation et de l'activité physique / Douglas J. Dudycha ... [et al.] . - Waterloo, [Ont.] : Dept. of Geography, University of Waterloo, 1983.
(Dept. of Geography Publication Series ; 21).

MU — The Concise atlas of Canada and the world. - Toronto : Methuen Publications ; Milwaukee : George Philip Raintree, 1983.
ISBN: 0098100232

British Columbia

UBC
UT — Current atlas [map] : Juan de Fuca Strait to Strait of Georgia = Atlas des courants : Juan de Fuca Strait à Strait of Georgia. - Ottawa : Canadian Hydrographic Services, Dept. of Fisheries and Oceans, 1983.
ISBN: 0660523809

Manitoba

CU
MU
OOU — Atlas of Manitoba / Thomas R. Weir , ed. - Winnipeg : Surveys and Mapping Branch, Province of Manitoba, [1983] .
ISBN: 0771100019

Ontario

CU
OOU — Ontario's history in maps / R. Louis Gentilcore and C. Grant Head ; with a cartobibliographical essay by Joan Winearls. - Toronto : Pub. for the Ontario Historical Studies Series by University of Toronto Press, 1984.
(Ontario Historical Studies Series).
ISBN: 0802034004
$59.00

Quebec

OOU Le Nord du Quebec : profil regional / Office de planification et de développement du Québec. - [Quebec] : Direction générale des publications gouvernementales du Ministère des communications, 1983.

UNITED STATES

OOU Atlas of United States foreign relations / Harry F. Young. - Washington : U.S. Dept. of State, Bureau of Public Affairs, 1983.

OOU A Battlefield atlas of the civil war / Craig L. Symonds ; cartography by William Clipson. - Annapolis, Md. : Nautical and Aviation Pub. Co. of America, 1983.

CU Congressional district atlas : districts of the 98th Congress. - Washington : U.S. Bureau of the Census, 1983. $16.00

Hawaii

CU Atlas of Hawaii / R. Warwick Armstrong and James Allen Bier. - 2nd ed. - Honolulu : University of Hawaii Press, 1983.
ISBN: 0824808371
$40.00

Idaho

UT Idaho soils atlas / Raymond J. Barker, Robert E. McDole, Glen H. Logan. - Moscow, Idaho : University Press of Idaho, 1983.

New York

UBC New York State, a socio-economic atlas / Richard Beach. - Plattsburg : State University of New York at Plattsburg, Dept. of Geography, 1983.

EUROPE - Atlases

OOU Atlas des chemins de fer d'Europe / [rédaction ... ATW, Agence Touristiqu et de Publicité ; avec la collaboration de Ursula Stricker, Hans Stricker]. - Berne : Kummerly and Frey, 1983.

FRANCE

UT Atlas réseau général d'énergie électrique au 1er janvier 1983 / Electricité de France, Direction de la production et du transport. - [France] : Electricité de France, Direction de la production et du transport, 1983.

GREAT BRITAIN

CU Complete British railways maps and gazetteer, from
UBC 1830-1981 / C.J. Wignall. - Oxford : Oxford Pub.
UT Co., 1983.
ISBN: 0860931625
$14.00

CU Ordnance Survey road atlas of Great Britain. - Southampton, Hampshire : Ordnance Survey, 1983.
ISBN: 0600350541
$22.00

POLAND

GSC Atlas geologiczny gornoslaskiego zaglebia weglowego = geological atlas of the upper Silesian coal basin / Adam Kotas ... et al. . - Warszawa : Wydawnictwa Geologiczne, 1983.

AFRICA - Atlases

MU African history in maps / Michael Kwamena-Poh, John Tosh, Richard Waller, Michael Tidy. - London ; New York : Longman Group Ltd., 1982.
ISBN: 0582603315

ASIA - Atlases

OOU Atlas for marine policy in Southeast Asian seas / ed. by Joseph Morgan, Mark J. Vavencia for the East-West Environment and Policy Institute. - Berkeley, Calif. : University of California Press, 1983.

CU Atlas of the Arab world / Michael W. Dempsey and Norman S. Barrett. - New York : Facts on File Inc., 1983.
ISBN: 0871961385

CHINA

OOU Cultural atlas of China / Caroline Blunden and Mark Elvin. - New York : Facts on File Inc., 1983.

OCEANIA - Atlases

PAPUA NEW GUINEA

UT — Papua New Guinea atlas : a nation in transition / ed. by David King and Stephen Ranck - [S.l.] : R. Brown in conjunction with the University of Papua New Guinea, [1983?].
ISBN: 0909197148

OCEANS - Atlases

CU
UT — A Comparative atlas of zooplankton : biological patterns in the oceans / S. van der Spoel and R.P. Heyman. - Utrecht : Wettenschappelijke uitgeverij Bunge, 1983.
ISBN: 906348013X

CU
GSC — The Times atlas of the oceans / ed. by Alastair Couper. - New York : Van Nostrand Reinhold Co., 1983.
ISBN: 0723002460

WORLD - Atlases

CU
OOU — Atlas of continental displacement : 200 million years to present / H.G. Owen. - Cambridge ; New York : Cambridge University Press, 1983.
ISBN: 0521258170
$25.00

CU
MU
OOU — Atlas of the Third World / George Kurian - New York : Facts on File Inc., 1983 .
ISBN: 0871966735

CU
GSC — Timescale : an atlas of the fourth dimension / Nigel Calder. - New York : Viking Press, 1983.
ISBN: 0670715719

OOU — The War atlas : armed conflict - armed peace / Michael Kidron and Dan Smith. - London : Pan, 1983.

CU
OOU — The World atlas of revolutions / Andrew Wheatcroft. - London: Hamish Hamilton, 1983.
ISBN: 0241109930

BOOKS

GENERAL BOOKS

CU
UBC — Automated cartography : international perspectives on achievements and challenges : proceedings of the International Symposium on Automated Cartography, 6th, 1983. National Capital Region of Canada / ed. by Barry S. Wellar. - [Ottawa] : Dept. of Geography, Carleton University, 1983.
Two volumes.

MU Coastal landforms and surface features : a photographic atlas and glossary / Rodman E. Snead. - Stroudsburg, Pa. : Hutchinson Ross, 1982.
ISBN: 0127874798

CU Early sea charts / Robert Putman. - New York : Abbeville Press, 1983.
ISBN: 0896593924
$45.00

OOU A History of the rectangular survey system / C. Albert White. - Washington : U.S. Dept. of the Interior, Bureau of Land Management, 1983.

OOU Map projections used by the U.S. Geological Survey / John P. Snyder. - 2nd ed. - Washington : U.S.G.P.O., 1983.
(Geological Survey Bulletin ; 1532).

CU Semiology of graphics : diagrams, networks, maps /
OOU Jacques Bertin ; translated by William J. Berg. - Madison, Wis. : University of Wisconsin Press, 1983.
ISBN: 0299090604
$75.00

REFERENCE BOOKS

UT Antique maps, a collector's handbook / Carl Moreland and David Bannister. - London ; New York : Longman, 1983.
ISBN: 058250306X

CU Archival citations : suggestions for the citation of
UBC documents at the Public Archives of Canada. - Ottawa : Public Archives Canada, 1983.
ISBN: 0662526686
Text in English and French.

CU Guide for a small map collection / Barbara E. Farrell and Aileen Desbarats. - 2nd ed. - Ottawa : Association of Canadian Map Libraries, 1984.
ISBN: 0969068239
$16.00

OOU Isles of gold : antique maps of Japan / Hugh Cortazzi. - New York : Weatherhill, 1983.

CU Kister's atlas buying guide : general English-language
UBC world atlases available in North America / Kenneth F. Kister. - Phoenix, Ariz. : Oryx Press, 1984.
ISBN: 0912700629

CU Land navigation handbook : the Sierra Club guide to map
OOU and compass / W.S. Kals. - San Francisco : Sierra Club Books, 1983.
$12.00

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ASSOCIATION OF CANADIAN MAP LIBRARIES
ANNUAL BUSINESS MEETING
MINUTES OF MEETING

Fredericton, N.B. : 21 and 22 June 1984

1. The 18th Annual Business Meeting of the Association of Canadian Map Libraries was held at MacLaggan Hall, University of New Brunswick, Fredericton, N.B. on 21 and 22 June 1984. A quorum having been established, the meeting was called to order at 9:45 a.m. on 21 June. The President was in the chair.

2. AGENDA

The agenda was approved as circulated.

3. PREVIOUS MINUTES

Minutes of the 17th Annual Business Meeting of 7 June 1983 were approved as printed in A.C.M.L. Bulletin 47 with the addition of Map Sources Committee to item 9 i "To Live or Let Die"-Status of Committee Reports. (K. Young, B. Batchelder) Carried.

4. PRESIDENT'S REPORT

The President presented a verbal report on the activities of the Board of Directors to supplement the report of the last Board of Directors Meeting printed in Bulletin 50. Two items highlighted by the President were: the publication of a second and revised edition of the Guide for a Small Map Collection and the Board's investigation into getting funding grants from S.S.H.R.C. for travel funds for the A.C.M.L. The President expressed his thanks to A. Desbarats and B. Farrell, compilers of the Guide, for all the work put into the second edition. The President stated that the new executive will apply to S.S.H.R.C. for funding assistance once the new guidelines are available in the fall.

5. REPORT OF THE 1ST VICE PRESIDENT

a) AAACC(CM) Committee
A written report was printed in Bulletin 50. It was moved to accept this report. (K. Young, W. MacKinnon) Carried. Hugo Stibbe presented a verbal report to expand upon the written report. He stated that royalties of the publication of the Manual are coming in and that he has deposited this money in a bank account. It was agreed that the President contact the AAACC(CM) Committee chairpersons to ask them to inform the Secretariat of the inactivity of this committee and the existence of royalty monies which could be used to carry on with further projects by this committee.

b) Awards Committee (see the report in Committee Reports section)
A written report was printed in Bulletin 50. A verbal report was presented by the chairpersons at the Board of Directors Meeting on 19 June 1984. It was moved to accept the written report. (M. Chan, A.A. Wood) Carried. It was moved that a copy of the Guidelines for the A.C.M.L. Papers Award, Preliminary Draft and

Guidelines for the A.C.M.L. Honours Award be printed in the June issue of the Bulletin. Comments to be sent by the membership to the Awards Committee chairpersons by September 15th, 1984. (M. Chan, A.A. Wood) Carried. It was agreed that the Awards Committee chairpersons will submit a report to the Board of Directors at the Fall meeting of the Board of Directors.

c) Conference 1984
It was moved to accept the written report of the Conference 1984 Committee, which was printed in Bulletin 50. (W. MacKinnon, R. Whistance-Smith) Carried.

d) Conference 1985
A verbal report was given by H. Larimer, one of the Conference 1985 chairpersons. He noted the change in the date of the conference from June 17-20, 1985 to June 3-7, 1985. The A.C.M.L. conference precedes the SLA conference. It was moved to accept the written report which was printed in Bulletin 50 and the verbal report. (H. Larimer, T. Ross) Carried.

e) Conservation Committee
It was moved to accept the written report printed in Bulletin 50. (B. Kidd, F. Woodward) Carried. The Conservation Committee chairperson asked that Carol Marley be added to the list of members of this committee to fill the vacancy left by Anwar Qureshi. The Conservation Committee chairperson asked for suggestions for further work that could be undertaken by this committee. Below are suggestions presented by the membership.

1) Organize a conservation workshop.
2) Produce a conservation manual.
3) Update the terms of reference for this committee.
4) Prepare a display of conservation equipment and samples of conservation companies.
5) Prepare guidelines for handling maps in displays.
6) Thought given to using the theme of conservation for a future A.C.M.L. conference with the emphasis on conservation for map collections with a limited budget for conservation.

The Conservation Committee chairperson made reference to a conservation report, copies of which are still available through the Public Archives of Canada for the cost of $5.00.

f) Copyright Committee (see the report in Committee Reports section)
The chairperson of the Copyright Committee sent a letter to the Board requesting three to four members of A.C.M.L. to prepare a submission to Consumer and Corporate Affairs on the white paper on copyright. It was moved that the A.C.M.L. request that the Copyright Committee present a submission on the white paper on copyright to Consumer and Corporate Affairs on behalf of A.C.M.L. (E. Hamilton, K. Young) Carried. The Board asked for volunteers to assist the Copyright Committee chairperson in the preparation of this submission. A. Desbarats and C. Marley volunteered. It was suggested by an A.C.M.L. member that the Board ask the Copyright Committee chairperson to approach J. Winearls to ask her if she would be interested in being a member of the Copyright Committee to assist in the preparation of the submission. It was moved to

accept the written report of the Copyright Committee. (E. Hamilton, M. Wilson) Carried.

g) Map User Advisory Committee

The Map User Advisory Committee chairperson presented a verbal report. This committee did not meet during the year. The chairperson asked for suggestions for work to be done by this committee. Below is a list of suggestions from the membership.

1) Contact Janet Allin, an OCUL Map Group member who has approached the Ontario government for a list of map producers.
2) Contact a similar interest group in the CCA.

It was moved to accept the verbal report of the Map User Advisory Committee. (M. Wilson, B. MacLeod) Carried.

h) Membership Committee

It was moved to accept the written report of the Membership Committee which was printed in Bulletin 50. (F. Francis, L. Sebert) Carried.

The chairperson asked all members to notify her of a change of address. Below are suggestions for the Membership Committee chairperson in order to determine the reasons for declining membership.

1) Prepare a survey asking members for their reasons for not renewing their membership.
2) Print advertisements about A.C.M.L. in other publications.
3) Send out free copies of the Bulletin to individuals who belong to associations in related fields (cartographic, geographic, and archival).
4) Send information about A.C.M.L. to similar institutions outlined in 3) to associations in the U.K. and Europe.

6. REPORT OF THE 2ND VICE PRESIDENT

a) Directory of Canadian Map Collections

The 2nd Vice President presented a verbal report to supplement the written report of the Directory Committee, which was printed in Bulletin 50. The addendum sheet will be inserted in the June issue of the Bulletin. A new updated Directory will begin to be compiled and will be ready for 1986. A member asked if information on map collections could be included using other sources if the map collections did not answer the questionnaire. The same member suggested that the Directory compiler send her list of map collections to each regional editor of the Bulletin in order that he/she check to see that all map collections for his/her province have been included. Lorraine Dubrueil, compiler of the first Directory, has agreed to be the compiler for the new edition of the Directory. An A.C.M.L. member mentioned that he asked SLA to drop Canadian map libraries from their directory and inform their membership of the existence of a directory of map collections for Canada. It was moved to accept the written and verbal reports of the Directory Committee. (L. Dubreuil, R. Pinnell) Carried.

b) Historical Maps Committee

The 2nd Vice President informed the membership that the new

chairperson for this committee is Edward Dahl. Edward Dahl presented a verbal report. The last maps printed in this series were printed two years ago and consequently there has been a lull in sales. Two facsimile maps were printed for the 1984 conference as a "Special Issue." The chairperson of the Historical Maps Committee suggested the following changes:

1) Provide a series title.
2) Provide an ISSN number.
3) A.C.M.L. copyright on the margin of the maps.
4) A.C.M.L. members could provide cataloguing information on the maps that would be printed in the Bulletin.
5) The print run of the maps would be decided on a case by case basis.
6) Reprint some of the older sheets that are out of print.
7) Encourage orders for the whole portfolio.
8) Discourage sales of individual maps.
9) Produce one portfolio of maps per year (50 maps).
10) Market maps in bulk more aggressively; set up marketing by private firms for individual provinces.
11) Remainder old stock at a reduced price.

It was moved to accept the written report by S. Sauer and the verbal report by E. Dahl for the Historical Maps Committee. (E. Dahl, F. Woodward) Carried.

It was suggested that the chairperson send a copy of his suggestions to be printed in the June issue of the Bulletin in order that members submit their reaction and suggestions to the Historical Maps Committee chairperson by 15 September 1984.

7. TREASURER'S REPORT

It was moved to accept the Auditor's Report and Treasurer's Report. (V. Parker, B. Batchelder) Carried.

A member asked if a more economical auditing firm has been sought by the Board. The Treasurer replied that an alternative auditing firm had been looked for, in the past, by the Board.

A member asked about NSF checks. The Treasurer replied that two will be recovered but that one will have to be counted as a loss.

It was moved that the firm of Deloitte, Haskins and Sells be approved as auditors for the Association for 1984/85. (A.A. Wood, W. MacKinnon) Carried.

OLD BUSINESS

8. A.C.M.L. ARCHIVES

The President reported that A.C.M.L. Archives was transferred to the Public Archives of Canada, Manuscript Division.

9. DISSOLUTION OF THE REMUNERATION COMMITTEE

It was moved to withdraw from the agenda the dissolution of the

Remuneration Committee. (K. Donkin, F. Woodward) Carried.

10. L.C. G SCHEDULE

V. Parker distributed the Revised G schedule for Maps and asked members to send their comments either to herself or to the Library of Congress.

It was moved to adjourn the meeting and readjourn on Friday, 22 June at 8:00 a.m. in the same location. (K. Donkin, W. MacKinnon) Carried.

Friday, 22 June, 8:00 a.m.

11. 1986 CONFERENCE

It was agreed that the Board write to Yves Tessier to ask him if his institution would be interested in hosting the A.C.M.L. 1986 Conference. If Yves declines, the Board will write to Richard Pinnell to enquire whether the University of Waterloo would be interested in hosting the 1986 Conference.

12. I.F.L.A. REPRESENTATIVE

H. Stibbe, the current A.C.M.L. representative to I.F.L.A. must resign his position in 1986. To date, two A.C.M.L. representatives have mentioned an interest in replacing H. Stibbe as A.C.M.L. representative to I.F.L.A. The Board feels that the selected candidate should have some funding assistance from his/her institution. An A.C.M.L. member suggested that the lack of funding assistance from institutions should not prejudice the selection of a candidate. The A.C.M.L. should set up guidelines for the selection of a suitable candidate and specify the amount of financial support that the A.C.M.L. would be willing to provide for this candidate. According to Bylaw 14.2: "The appointment of Association representatives to other organizations...shall be authorized by resolution of the Board and appointed by the President."

13. B. FARRELL AND A. DESBARATS LETTER

An A.C.M.L. member mentioned that the NUC Committee should be reactivated. It was moved that a committee be set up which would be concerned with the implementation of catalogue systems to be called the Canadian Committee for Bibliographic Control of Cartographic Materials (CCBCCM). (B. Farrell, K. Young) Carried. A member mentioned that political pressure must be exerted on the PAC in order that monies be set aside in this year's budget to produce a National Bibliography for Cartographic Materials and a Union Catalogue for Cartographic Materials.

14. MEMBERSHIP FEES

The Treasurer presented arguments to the effect that the A.C.M.L. bank balance will be quickly diminished this year due to the production cost for publications, resignation of the Publication Officer, and a lull in sales of the Historical Maps. The Treasurer noted that if A.C.M.L. wishes to take a more active role in the area of education, in the form of specialized workshops, that this would require sufficient financial resources. The Treasurer quoted membership fees of other associations

publication, which, at present, the A.C.M.L. membership fee does not support. It was moved to increase Full and Associate membership fees from $15.00 to $25.00 and Institutional fees from $25.00 to $30.00. (V. Parker, B. Batchelder) Carried. It was suggested by an A.C.M.L. member that the Board should closely monitor the effect of the increase in membership fees and re-evaluate this question next year at the Annual Business Meeting.

15. NOMINATIONS AND ELECTIONS COMMITTEE

The chairperson of the Nominations and Elections Committee read the results of the three acclamations--President, E. Hamilton; Treasurer, V. Parker; Secretary, K. Young. The Board informed the membership that certain unintentional and unforeseen irregularities which took place during the election made it necessary for the Board to destroy the ballots. A new election, using the same slate of candidates for the positions of 1st and 2nd Vice President, will be run again. The ballots and a covering letter will be mailed out to the membership in early July with ballots to be returned to the Secretary by August 31st. The results of the election will be relayed to the membership in early September. Due to Bylaw 5.3 the Board will consist of the three acclaimed positions and the 1st and 2nd Vice Presidents of last year until the results of the election.

OTHER BUSINESS

16. MAILING COST OF THE BULLETIN

It was moved that only Full members receive issues of the Bulletin through first class postage. (B. Batchelder, R. Whistance-Smith) Carried. It was mentioned by a visiting speaker that perhaps copies of the Bulletin destined for national libraries outside Canada be mailed by first class mail.

17. HISTORICAL MAPS SERIES

It was moved that the A.C.M.L. Facsimile Map Programme continue as the Historical Maps Committee deems necessary. (E. Dahl, B. Batchelder) Carried. E. Dahl, chairman of the Historical Maps Committee, stated that only the proposed changes in the printing format, i.e. paper stock, ISSN, series title, will be undertaken in order to continue with production of the facsimile maps. The chairperson will await suggestions from the membership on the questions of marketing and remaindering of facsimile maps.

18. NEW EXECUTIVE

The Past President for 1984-85, W. MacKinnon, will be unavailable for most of the year. It was proposed that the current Past President, T. Nagy, remain as an interim Past President. Moved that the current Past President, T. Nagy, act as interim Past President for 1984-85 and that he have voting privileges. (H. Stibbe, B. Kidd) Carried.

The 18th Annual Business Meeting adjourned at 9:20 a.m.

Karen Young, Secretary

* * *

ASSOCIATION OF CANADIAN MAP LIBRARIES
COMMITTEE REPORTS AND
OTHER REPORTS

AWARDS COMMITTEE
1984

The Awards Committee, since the Annual General Meeting in Vancouver in June 1983, has met a number of times to consider aspects of both the Service Awards and the "Papers" Award. As stated in their report in Vancouver the committee would like to see the existing category of a "Service" Award recognized by the issuance of a certificate of appreciation designed for that purpose. The Executive, at its February meeting, agreed to provide a sum of $300 for its design and production. As requested by the Executive the Awards Committee is proceeding to have a design proposal ready for consideration during the June meeting at Fredericton. As well, the Awards Committee has been requested to draft guidelines for the selection of candidates for the Certificate of Service and would hope to have an initial draft ready for consideration in June.

The "Papers" Award has occupied the committee to date. Guidelines for this award were drafted for the consideration of the Executive during their February meeting. Upon receipt of the proposed changes the Awards Committee will prepare a further draft for reconsideration.

Guidelines for A.C.M.L. Awards

At the Annual Business Meeting of the Association, held in June 1984 in Fredericton, N.B., the Awards Committee asked the membership for guidance in terms of fulfilling their terms of reference. Specifically, the Awards Committee asked for comments on the design of the proposed certificate (circulated at the Annual Conference) and on the draft proposal of the guidelines for the A.C.M.L. papers award, and the guidelines for the A.M.C.L. honours award. Please read the following and submit comments to Alberta Auringer Wood or Margie Chan.

A.C.M.L. Honours Award - guidelines

1. The Honours Award shall consist of a framed certificate issued by A.C.M.L.
2. This award is to be made during the Annual Conference.
3. The award will not necessarily be issued every year.
4. A call for nominations shall be made in two issues of the A.C.M.L. Bulletin during each year.
5. Nominations may be made by any individual member, including members of the Awards Committee itself.
6. The recipient shall be an individual who has made an outstanding contribution in the field of map librarianship/curatorship.
7. The recipient's contribution may be either for a specific activity or for general services and contributions such as continued membership in the Association with active participation either as an executive officer, committee chairperson, or committee member.
8. While membership in A.C.M.L. shall normally be a prerequisite, that shall not preclude consideration of outstanding non-members.
9. An award shall preferably be awarded to a person while still active in the field, rather than at an early stage or post-retirement.
10. Probable attendance at the Annual Conference should be considered but should not be the deciding factor.

11. To facilitate and encourage the recipient's attendance at the conference, he/she should be informed of the pending award.
12. The Awards Committee, having considered all nominations for an award, shall come to an unanimous agreement on the choice of a recipient.
13. The Awards Committee shall forward their decision to the Executive of the A.C.M.L. for their approval one month prior to the Annual Conference.

A.C.M.L. Papers Award - guidelines

1. The Papers Award will consist of a monetary award of $200.00.
2. This award is to be made during the Annual Conference.
3. The award will usually, though not necessarily, be given on an annual basis.
4. Nominations for this award, while primarily the responsibility of the Awards Committee members, may be made by any individual member.
5. The papers which will be considered for this award will consist of papers which have appeared in any issue of the Bulletin since the last Annual Conference.
6. Papers appearing in the Bulletin will be eligible for consideration if they are three pages or more in length.
7. Only papers of sufficient length, appearing in the Bulletin, which are not regular features but are instead feature articles will be considered for this award. Continued articles, and co-authored articles shall be given full consideration.
8. Articles which are eligible by the above clauses shall be further screened by subject matter. Only articles which make a solid contribution to map librarianship/curatorship, including carto-bibliographies, shall be considered for this award.
9. The Awards Committee and its appointees shall weigh the degree of originality, uniqueness of subject matter, and the depth of research involved in the papers under consideration. The complexity of subject matter, the presentation of such by the author, and technical qualities such as grammatical construction should all be considered.
10. Papers nominated for this award, which fit the above criteria to the satisfaction of the Awards Committee, shall then be subject to evaluation by a person or persons who are not normally members of the committee.
11. The Awards Committee shall contact a person or persons of its choice and request a written evaluation of the quality exhibited by a nominated paper.
12. Upon receipt of such evaluation, the Awards Committee shall come to a unanimous decision on the choice of a recipient.
13. A report shall be made to the Executive on all papers nominated and the results of consideration by the Awards Committee one month prior to the Annual Conference.
14. To facilitate and encourage the recipient's attendance at the Conference, he/she should be informed of the impending award.

* * *

CONFERENCE 1984 COMMITTEE
Final Report

The organizing committee for the 18th Annual Conference of the Association of Canadian Map Libraries, held in Fredericton, New Brunswick, June 19-22, 1984, was chaired by William MacKinnon, archivist and map curator at the Provincial Archives of New Brunswick. Also on the committee were Elizabeth Hamilton, Judy Colson, and Gerhard Gloss, all of the University of New Brunswick.

The groundwork for the conference began as early as 1978, with initial impetus coming from Bill MacKinnon and the Provincial Archives. Concentrated work by the committee began in the fall of 1980, with the organizing activities assigned in October of 1982. In the months leading up to the conference, the committee met as a group on fifteen occasions, with informal lunch meetings almost daily in the two months immediately preceding the conference.

Support for the conference by the Provincial Archives of New Brunswick was strong from the outset in both contributions of staff and of resources. In addition to this very significant contribution, the Provincial Archives also coordinated an exhibit opening to coincide with the opening of the conference. Later in the planning process, the University of New Brunswick, through the Library and the Department of Surveying Engineering, contributed both manpower and sponsorship of events. As the programme was finalized, the British Council and the Province of New Brunswick, through the Cabinet Secretariat, were particularly generous in their support.

It would be a mistake to assume that all this planning went along flawlessly; as with other conferences, ours had its share of problems along the way. With one committee coordinating both the local arrangements and the programme, committee members were required to become jugglers, and the staff of their respective institutions were conscripted to run message and information centres, particularly towards the end of May. We would not have been able to accomplish what we did without the reliable and hard-working efforts of our colleagues.

Included in the problem areas were such uncontrollable factors as the weather and the whims of the University of New Brunswick Physical Plant; a cheer to all who navigated the narrow bridges which they provided to allow delegates to get to MacLaggan Hall. And as with all conferences, playing the numbers game with the registration figures became a full-time activity. If there were a better way for other conference organizers to estimate attendance figures, planning would be made considerably easier. Perhaps a limited enrollment workshop would ensure that some registration forms are returned promptly. In the booking and confirming process for rooms and speakers, it is essential to get arrangements down in writing very early on in the process. It facilitates matters when problems do occur (and occur, they will).

Were we to plan the conference again, we would plan for a variety of formats in the programme and refine the timing of the programme events so that speakers did have enough time to give justice to their preparations. We would try to include a practical workshop, to give delegates a variety of training experiences in an informal setting. A more structured time-slot would be assigned to allow delegates an opportunity to peruse the exhibits. And we would continue to work on the problem of the Annual

General Meeting, which insidiously eats into the programme time. Last, but not least, we would make sure that all those involved in the planning process schedule a long vacation for themselves when the conference is over.

The process of planning a conference was an educational one for us all and, though we might not volunteer to do another one immediately, we enjoyed having the experience of working with a wide variety of people and of welcoming A.C.M.L. members to Fredericton. To the Conference Committee for 1985 we suggest you take as your motto: "There's no harm in asking" and never, ever say: "What else could possibly go wrong?"

Trust us, you'll find out soon enough! Our thanks to all those who participated in the conference, and our best wishes to the 1985 Conference Committee.

William MacKinnon (Chairman)

* * *

COMITE SUR LE DROIT D'AUTEUR

Suite à la déposition du Livre blanc sur le droit d'auteur "De Gutenberg à Telidon" par la ministre de la Consommation et des Corporations le 2 mai 1984, il est sans doute temps pour l'Ass. des cartothèques canadiennes de raviver son Comité sur le Droit d'auteur. Car si le Livre blanc concerne en grande partie les media électroniques, plusieurs recommandations s'appliquent aux documents d'archives et de bibliothèques. Certaines correspondent aux demandes des archivistes et des bibliothécaires, d'autres confirment ou renforcent la loi actuelle.

L'Association des cartothèques canadiennes peut, si elle le désire, prendre position sur le contenu du Livre blanc. La marche à suivre est la suivante:

1) l'Association doit d'abord signifier son intention de présenter un mémoire ou de comparaître devant le Comité en envoyant une lettre au Greffier du Comité permanent des communications et de la culture de la Chambre des Communes, Pièce 516, 180 rue Wellington, Ottawa K1A 0A6.

2) Un mémoire doit être préparé à l'avance de telle sorte que, lorsque le Comité sera convogué, il pourra être rapidement soumis aux membres du Comité.

3) Le greffier du Comité se chargera d'aviser l'association de la date de convocation dudit Comité.

Je laisse à l'Exécutif de l'association le soin de décider de soumettre ou non un mémoire ou de comparaître devant le Comité. Personnellement, je recommande que l'A.C.C. prépare un tel mémoire auquel je suis prêt à travailler à la condition que d'autres personnes s'impliquent. Car pour être le moindrement représentatif le mémoire devrait réfléter les opinions de 3 ou 4 membres de l'association.

J'inclus à titre d'information un exemplaire du Livre blanc et la documentation connexe ainsi qu'une copie du rapport qu'avait soumis l'A.C.C. en 1977.

Gilles Langelier
Président, Comité sur le
Droit d'auteur
15/6/84

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HISTORICAL MAPS COMMITTEE

At the A.C.M.L. Annual Meeting in Fredericton, I reported on my activities as interim chairman of the Historical Maps Committee, a position I assumed after the resignation early in 1984 of Serge Sauer, founder of the committee and its chairman from 1976 to 1984. (At the meeting, I officially became chairman of the committee.)

As interim chairman, I produced two facsimiles of New Brunswick maps--350 copies of each--which were required in time for the A.C.M.L. Annual Conference and related events. These two were a test run, done outside the regular series of facsimiles, since the printing location was being moved from London, Ontario, to Ottawa. Rather than being numbered, they were simply titled "SPECIAL ISSUE--TIRAGE SPECIAL."

Some of the changes being planned for the continuation of the series are that the series will be given a series title, "A.C.M.L. Facsimile Map Series," and an ISSN will appear on each map. Print runs will no longer be limited to 500 copies, and maps will not be individually hand-numbered. It is planned to determine the number of copies to be printed on a map-by-map basis. This should solve the problem of having too large a stock of individual maps for which there is little demand and a shortage of copies of brisk sellers. Facsimiles can be reprinted as required. Consideration is being given to the idea of reprinting maps in cases where our stock has been depleted, labelling them as a "second printing" to distinguish them from the "limited edition" first printing. In this way, numerous important maps of Canada included in the first 100 facsimiles could be kept in print when continued demand warrants it.

To assist me in this work during the coming year, I would like to invite volunteers to join the committee. The major areas in which I will require assistance will be in finding sponsors for the facsimiles, in production work in Ottawa, and in marketing the facsimiles individually, in bulk or as portfolios. Please contact me at the National Map Collection if you are interested in working on this committee.

Edward H. Dahl, Chairman
Historical Maps Committee

* * *

MEMBERSHIP REPORT
23 January 1984

Balance as of December 31, 1983:

Revenues		
Membership fees	$695.00	
Interest	.57	
Foreign exchange	84.45	
Total	$780.02	$780.02

Balance as of January 23, 1984:

Membership fees	$1,847.66	
Foreign exchange	226.88	
Total	$2,074.54	$2,074.54
Balance on Hand		$2,854.56

* * *

NOMINATIONS AND ELECTIONS COMMITTEE
Final Report
11 September 1984

The members of the Nominations and Elections Committee 1984 were Betty Kidd, Public Archives of Canada, Ottawa (Chairperson), Amy Chan, University of Waterloo, Waterloo, and Frances Woodward, University of British Columbia, Vancouver.

The call for nominations, dated 31 January 1984, mailed to all eligible members, resulted in five nominations from the membership (one of those nominated later withdrew his name). The Nominations and Elections Committee, through telephone meetings, agreed on other possible candidates to complete the slate and approached these members. The resulting ballot, with eight candidates and accompanying biographical information was mailed to all members by the Secretary in May 1984.

Unfortunately, there was an irregularity in the process which, when recognized later, resulted in a decision by the Board of Directors to declare the election invalid. A second ballot was mailed to the 82 eligible members in July 1984 and 57 ballots were returned--of these, 11 were spoiled. The ballots were counted on September 10, 1984.

The following is the A.C.M.L. Board of Directors for 1984/85:

President:	Elizabeth Hamilton
First Vice President:	Robert Batchelder
Second Vice President:	Tim Ross
Secretary:	Karen Young
Treasurer:	Velma Parker

Betty Kidd
Chairperson

* * *

PUBLICATIONS REPORT
1983

Balance as of December 31, 1982:		$12,781.15
Sale of Publications	$8,606.36	
Foreign Exchange	356.10	
Interest on Account	345.23	9,307.69
		$22,088.84
Less		
Transfer to Treasurer	$17,025.00	17,025.00
Balance as of December 31, 1983:		$ 5,063.84

Bruce Weedmark
Publications Officer

* * *

REVIEWS

REVIEWERS NEEDED

As of June 1984, reviewers were required for the following items. If you are interested, please contact Alberta Auringer Wood, A.C.M.L. Review Editor, at the address shown on page ii of this issue.

Franquelin, Jean-Baptiste Louis. L'Amérique septentrionale en 1688 [map]. Québec: La Documentation québécoise, 1977. Facsimile, 61 x 93 cm.

Seymour, W.A., editor. A History of the Ordnance Survey. Folkestone, Kent: Dawson, 1980. xvi, 394, index, 27 plates (some col.) bet. p. 360 and 361, 6 appendices. £ 35.00 in U.K. (ISBN 0-7129-0979-6).

Cortazzi, Hugh. Isles of Gold: Antique Maps of Japan. New York, Tokyo: Weatherhill, 1983. xvii, 177 p., 5 fold. col. map plates, 1 fold. col. map in pocket, many col. maps, illus. $ 75.00 (ISBN 0-8348-0184-1; LC 83-3525).

Manual of Photogrammetry. 4th ed. Editor-in-chief, Chester C. Slama; associate editors, Charles Theurer, Soren C. Henriksen. Falls Church, Va: American Society of Photogrammetry, 1980. xv, 1056 p., 866 illus. $ 44.95, member; $ 34.95, student; $ 59.95 non-member. (ISBN 0-937294-01-2; LC 80-21514).

Colwell, Robert N., ed. Manual of Remote Sensing. 2d ed., 2 vols. Vol. 1 ed., David S. Simonett, assoc. ed. Fawwaz T. Ulaby; vol. 2 ed., John E. Estes, assoc. ed., Gene A. Thorley. Falls Church, Va: American Society of Photogrammetry, 1983. 2724 p., 2072 illus., 279 in col. $ 99.00 member; $ 65.00, student; $ 125.00, non-member (shipping and handling charges $ 6.00, U.S.; $ 8.00 Canada, $ 15.00, elsewhere). (ISBN 0-937294-41-1 v.1, 0-937294-42-x v,2; LC 83-6055).

Merrett, Christopher E. Map Classification: A Comparison of Schemes, With Special Reference to the Continent of Africa. Champaign: Graduate School of Library & Information Science, University of Illinois, 1982. 31 p. (Occasional Papers No. 154, June 1982) $ 3.00.

Fisher, Howard T. Mapping Information: The Graphic Display of Quantitiative Information. Cambridge, MA: Abt Books, 1982. viii, 384 p. $ 27.00. (ISBN 0-89011-571-0; LC 82-6858).

The Methuen Atlas of Canada and the World. Toronto: Methuen, 1983. 48 p., 44 col. maps, 5 p. of index. $ 9.95. (ISBN 0-458-96060-8).

Ansari, Mary B., and Newman, Linda P. Nevada Directory of Maps and Aerial Photo Resources. Santa Cruz, Ca: Western Association of Map Libraries, 1984. 158 p. (Western Association of Map Libraries Occasional Paper, No. 11) $ 15.00. (ISBN 0-939112-13-2 (pbk.); LC 83-26068).

Ross, Grafton. 1976 Census Thematic Maps: Ottawa-Hull Census Metropolitan Area. Ottawa: Statistics Canada, 1979. Working Paper (Geography Series) no. 9.

Gentilore, R. Louis, and Head, C. Grant. Ontario's History in Maps. With a cartobibliographical essay by Joan Winearls. Toronto: University of Toronto Press, 1984. xiii, 284 p. (Ontario Historical Studies Series, ISSN

0380-9188) $ 65.00, regular ed.; $ 400.00, Bicentennial ed. (ISBN 0-8020-3400-4; LC 84-098161-9).

Modelski, Andrew M. Railroad Maps of North America: The First Hundred Years. Washington: Library of Congress, 1984. xxi, 186 p. $ 28.00 (ISBN 0-8444-0396-2; LC 82-675134; available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, stock no. 030-004-0021-3).

Larsgaard, Mary Lynette. Topographic Mapping of the Americas, Australia, and New Zealand. Littleton, Co.: Libraries Unlimited, 1984. xi, 180 p., incl. 58 p. bibliog. $ 45.00 U.S.; $ 54.00 elsewhere. (ISBN 0-87287-276-9); LC 84-3874).

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Skoda, L., and Balodis, M. Energy Resources of British Columbia [map]. Produced and distributed by Canadian Cartographics Ltd., Victoria: British Columbia Ministry of Energy, Mines and Petroleum Resources, Conservation and Renewable Energy Branch, 1982. Scale 1:2,000,000, insets 1:8,000,000. col.; 77.5 x 103 cm. $ 10.00 within B.C., $ 15.00 elsewhere. (Available from Canadian Cartographics Ltd., 508 Clarke Road, Coquitlam, B.C. V3J 3X2 or Queen's Printer, Parliament Buildings, Victoria, B.C. V8V 4R6).

The principal map, at a scale of 1:2,000,000, is overprinted on the type of relief map base on which we are accustomed to seeing similar maps of British Columbia. It is an excellent cartographic production. On this map the presentation of the conventional resources includes data on oil and gas, location and size of coal deposits, installed and potential generating capacity of hydro and thermalelectric stations, location and classification of pipelines, power transmission lines and locations of uranium deposits, as well as the base map features.

A series of inset maps portray alternate energy resources and potentials. These include solar, wind, biomass, micro-hydro, geothermal, tidal, and wave energy resources. A summary map is also included showing energy flows and energy use.

The map is printed on heavy chart paper which makes it very useful as a wall map. The more than six well chosen colours are skillfully used to produce a truly pleasing cartographic product. Information sources are up-to-date and well documented. Because of excellent design, the map is clean and crisp and easy to read, with perhaps two minor exceptions. The first is the attempt to use individual symbols for producing oil and gas wells and a similar circular symbol for settlements of from fewer than 200 to 150,000 people. There is no confusion between the use of the two symbols, but their small size makes locating them difficult, particularly if the map is used as a wall chart. The second exception is the combined graph/map used to depict Energy Use (1979). Only after careful study does the graph's message become completely clear, at which time one realizes that it is a very clever graphic.

The following note from the publisher accurately and concisely states the purpose of the map:

> This is a colourful wall map summarizing the current knowledge of British Columbia's energy resources. It is an authoritative source of information bringing into focus the distribution of the extent of the conventional as well as the unconventional sources of energy in the province. The map was designed to provide a background against which the emerging issues of energy use, conservation and planning may be more fully understood and appreciated. A teacher's manual was also prepared to facilitate the use of the map within the province's secondary school system.

The map demonstrates:

> British Columbia's approach to a thorough cartographic inventory of energy resources at a regional level. The map should be eminently useful as an educational document and of particular interest to people involved in planning, resource management, resource inventory as well as to potential users of alternative energy sources and to all those concerned with wise use of energy and with development of alternative energy resources.

It is a definite candidate for acquisition by every map library interested in resources and energy and should be prominently displayed in every public library and office concerned with the energy and resources of British Columbia.

C. Bradley Fay
Maritime Resource Management Service
Amherst, Nova Scotia

* * *

Charbonneau, André; Desloges, Yvon; et Lafrance, Marc. Québec ville fortifiée du XVIIe au XIXe siècle. Québec: Editions du Pélican, 1982. 491 p., illus. (Publié conjointement avec Parcs Canada et le Centre d'édition du gouvernement du Canada). Numéro de catalogue: R64-103/1982F. Egalement disponible en anglais sous le titre Quebec, the Fortified City: From the 17th to the 19th Century $ 45.00 (ISBN: 289011 007 9; 0-660-10974-4)

Trois historiens de Parcs Canada, André Charbonneau, Yvon Desloges, Marc Lafrance, ont uni leurs efforts pour préparer et produire cet ouvrage monumental, fruit de nombreuses années de recherche de leur part. Aucune autre étude de cette ampleur n'a abordé l'histoire de la ville de Québec sous son aspect de place forte, ce qu'elle fut en réalité jusqu'à la fin du 19e siècle. Car si d'autres villes au Canada ont eu une importance militaire aucune n'en n'a été affectée aussi considérablement dans son développement que Québec. Comme le soulignent les auteurs, très tôt les administrateurs ont saisi que la capitale de la Nouvelle-France constituerait la clé de voûte du système de défense.

L'ouvrage débute sur deux chapitres à caractère "historique," le premier

couvrant la période française, le deuxième de 1759 à 1871. Dans ces deux chapitres, les auteurs passent en revue le contexte politico-militaire qui a façonné le destin de Québec et décrivent tous les projets de défense, réalisés ou non, à partir de l'Habitation de 1608 au chapelet de forts qu'on projetait de construire vers 1865 sur la Rive-Sud. Les ingénieurs français et britanniques chargés de fortifier Québec arrivaient en Amérique avec un bagage de connaissances théoriques et pratiques acquises en Europe, et qu'ils tentaient d'appliquer à Québec. C'est sous le titre Le Contexte théorique, que les auteurs consacrent plusieurs pages à nous situer d'abord dans cet univers de bastions, de glacis, de redoutes, de places d'armes, etc... par des définitions appropriées pour ensuite passer en revue les grands courants de pensée sur l'art des fortifications depuis la Renaissance jusqu'à la fin du XIXe siècle. Quoiqu'elle peut sembler aride à prime abord, la lecture de ce chapitre est essentielle à la compréhension des deux chapitres suivants qui eux portent sur l'évaluation des éléments de défense des régimes français et anglais. Comment chaque ingénieur (Beaucours, Levasseur de Néré, Chaussegros de Léry, Holland, Marr, Mann, Durnford pour n'en nommer que quelques-uns) a perçu la situation, les moyens de défense qu'il a proposés et ses réalisations sont analysés avec force détails. L'analyse porte cependant essentiellement sur les défenses du côté ouest donnant sur les plaines d'Abraham, l'escarpement assurant une protection naturelle sur les autres côtés. On retient de la lecture de ces deux chapitres que, indépendamment de leur expertise et leur compétence, les ingénieurs voyaient soit leurs projets retardés ou rejetés à cause de considérations financières, politiques ou autres, soit qu'ils devaient les modifier substantiellement avant que les administrateurs ne les jugent satisfaisants. Le plus bel exemple à ce sujet est celui de la construction d'une citadelle identifiée comme maillon de défense important par Chaussegros de Léry en 1716, laquelle ne sera complétée que vers 1831 au moment où elle ne répondait déjà plus aux besoins militaires de l'époque.

Au chapitre 6, les auteurs d'attardent à étudier les composantes des fortifications (murs, portes poternes, guérites) et les matériaux de construction utilisés. A partir du chapitre 7 sur la main-d'oeuvre requise pour les fortifications, le lecteur se sent plus à l'aise, se retrouve en milieu plus familier. En plus de la question de la main-d'oeuvre, les auteurs traitent de l'impact des fortifications d'abord sur l'économie et ensuite sur le développement urbain de la ville tout en effleurant les conditions de vie dans une place de guerre.. Enfin le dernier chapitre touche la fin de "l'occupation militaire" avec le départ de la garnison britannique en 1871, les tentations de la démolition et la reconnaissance de la valeur historique de l'enceinte et sa mise en valeur sous l'inspiration du gouverneur-général Dufferin.

L'ouvrage est abondamment illustrée de documents iconographiques, de cartes, de plans, de photos qui s'intègrent parfaitement au thème développé. La qualité des reproductions est généralement excellente quoique dans le cas de certaines cartes et certains plans une trop grande réduction rend la lecture du document difficile. Il s'agit cependant de compromis inévitable dans la plupart des cas. Entre certains chapitres, des photographies récentes des sites étudiés ajoutent à la présentation de grande qualité. Le texte est très bien rédigé et d'une lecture facile même si les sujets traités sont parfois techniques.

Québec ville fortifiée ne s'adresse pas uniquement aux spécialistes en histoire de l'architecture militaire même si ceux-ci trouveront leur

compte. Tous ceux qui s'intéressent à l'histoire de la ville de Québec devraient se le procurer.

Gilles Langelier
Collection nationale de cartes et plans
Archives publiques du Canada
Ottawa

* * *

Goodman, James M. The Navaho Atlas: Environments, Resources, People and History of the Diné Bikeyah. Norman: University of Oklahoma Press, 1982. x, 109 p.; illus. bibliog. index (Civilization of the American Indian series, vol. 157) U.S. $ 22.50 (0-8061-1621-8; 81-40287)

This thematic atlas illustrates various features of the Navaho Indian area of the southwestern United States. It concentrates on the Navaho Reservation, the largest reservation in the U.S., located at the intersection of the "four corners states" of Utah, Colorado, Arizona, and New Mexico. It is aimed at the senior high school through university level, as well as at serious general readers. Apparently the author spent much time in the field conducting original research and talking with local people, as well as relying on secondary sources for some of the topics. Many of the maps appear to be adaptations of previously published medium-scale coverage of the southwest by federal and state agencies.

The Navaho Atlas is arranged in six topical sections, each prefaced by a concise introductory essay. Most of the forty-eight maps are also augmented by clearly expressed descriptive text running to two pages in some cases. As well, there are line drawings, charts, and photographs, including satellite imagery. Only the very attractive dust jacket is printed in colour; the book itself was produced entirely in black and white. A variety of traditional cartographic techniques have been employed, including dot-symbols, line maps, and grey-toned choropleth shading. The atlas has hard covers, and the binding appears to be sturdy. The type is very legible, and all maps are well registered.

Section I contains base and administrative maps. It begins with a useful map of all reservations in the conterminous U.S. and progresses logically to increasingly larger scale maps of local areas. The sectional maps are very detailed in terms of place names and small waterways but the use of colour would have improved their attractiveness and ease of use. Of the six thematic sections, the fifth, "Livelihood, Resources and Services," is the best developed in terms of number of maps and sources cited in the bibliography. Similarly, section II, covering the physical environment, is well documented and extensive in its range of coverage.

"Navaho History," the third section of the atlas, is sketchy and disappointing. Clearly, there was more socio-economic research available for Dr. Goodman to draw upon than there was in the fields of history and anthropolgy. Still, there could have been a more in-depth attempt to trace migration routes from Athapascan areas of Canada or to draw contrasts to

other tribes of the southwest. There has been research in Canada linking the Dené and the Navaho, but there is no reference to this in the text, maps, or bibliography. The relative comprehensiveness of the other topical sections within The Navaho Atlas make up for the lack of historical data, however.

The University of Oklahoma Press has published a number of other titles relating to the Navaho. There are also general topical atlases available for the southwestern states. This atlas is unique, though, in that it cuts across geographic and subject boundaries to examine the Navaho people cartographically. As someone who frequently receives reference questions on Indian lands, I wish that I had a similar source for my own local area. The Navaho Atlas can be recommended to all Canadian and American map libraries. At a time when the original peoples and land claims are frequently in the news, it would be useful in academic and large public libraries as well.

Tim Ross
Cartographic Archivist
Provincial Archives of Manitoba
Winnipeg, Manitoba

* * *

Stonehouse, Bernard (editor). Prentice-Hall Illustrated Atlas of the World. Englewood Cliffs, NJ: Prentice-Hall, 1982. 208 p., illus., maps, stat. tables. $ 39.00. (0-13-696542-3; 82-82081) (Prentice-Hall Canada, 1870 Birchmount Road, Scarborough, Ont. M1P 2J7; Simultaneously published in England by George Philip/Raintree)

This atlas is a combination of text, pictures, maps, statistics, and gazetteer. It is intended to be a "world information book that gives not only a comprehensive description of the countries of the world, but also describes the differences--in history, peoples, and development--that make our planet as colorful and varied as it is."

Only one-third of this book is maps. They were prepared and copy-righted by George Philip and Son. Of the approximately sixty hypsometrically tinted maps, there are only seven which cover North America. The largest scale is 1:7,000,000. Considering its European source, it is not surprising to discover that one-third of the maps cover Europe with the largest scale of 1:2,000,000 covering the British Isles. Most of the European maps are in scales ranging from 1:2,5000,000 to 1:5,000,000. The remainder of the world is mapped at smaller scales. Many of the maps are similar to those in Atlas of Canada and the World (c1979 by George Philip/ Raintree). Some have been updated, e.g. China (p.99)--place names have been changed to accommodate the official Pinyin transliteration system. The maps are well done with scales, hypsometry, legend, and projection obvious.

The text and accompanying pictures, also copyrighted by George Philip and Son, form the remaining two-thirds and provide a description of the various

countries and their differences. The section on North America covers about nineteen pages including maps. Colour photographs and text are equally balanced using slightly more than half of the nineteen pages. The text briefly covers history, population growth and distribution, agriculture and industry, vegetation, landscape, and climate. There is a small section on separatism in Quebec. The text for Canada was written by Stephen Mills (David Brice Centre for American Studies, University of Keele) and gives a succinct view of the country. Similar coverage is available for other areas, the text written by different people.

Seven pages of statistics present the following topics for 116 countries: language, currency and exchange rate, area in both imperial and metric, total population, density of population, percentage of population below fifteen years or over sixty-five, birth rate, death rate, population increase 1975-80, proportion of urban population, name of capital with population, significant divisions of population according to tribe, religion, language or colour, gross domestic product and percentage contribution from agriculture and industry, imports and exports, and foreign aid received.

Completing this atlas is an index to the text, by area name principally. Following is an index to 16,000 place names with map page number and latitude/longitude.

This is a book designed as a comprehensive reference tool for a Briton who is generally interested in the world. It has quality maps, interesting text, and pictures that fulfill its purpose described earlier. But many libraries will have specialized resources which will provide more detailed information.

Bob Batchelder
Map and Airphoto Library
University of Calgary
Calgary, Alberta

* * *

Prescott, Dorothy F.; Routley, Margaret; and Wells, Judith, editors. Checklist of Australian Map Catalogues and Indexes. 1st ed. Canberra: Australian Map Curators Circle, 1982. 24 p. $ 4.00. (ISBN 0-9593900-1-4). (Available from the Business Manager, Australian Map Curators Circle, P.O. Box E 133, Canberra, A.C.T., 2600 Australia)

The Checklist of Australian map catalogues and indexes is a 24-page booklet with a paper cover; it measures 21 cm by 30 cm (8 1/4" x 11 3/4") and costs a modest $4.00 (Australian). The Checklist ... provides a listing of publishers' and retailers' catalogues and indexes broken down by Australian states and Capital Territory. The listing is rounded out by an alphabetical list of publishers, including addresses, and a brief subject index.

The Checklist ... is arranged alphabetically by political jurisdiction,

beginning with the Australian Capital Territory and continuing with the seven Australian states, covering a total of 137 map publishers. Each entry is numbered and the address list and the subject index are linked with the various entries in the Checklist ... by number. Each entry contains the following information: publisher, title and date, physical description, frequency, notes, and price. The editors hope that the Checklist ... will be regularly revised and updated with information supplied by readers of the first edition.

This is an essential purchase for any map library which deals with Australian maps. The Checklist ... provides the correct address to write to for information about Australian aerial photographs, forestry maps, topographic maps, census maps, etc. This booklet provides a brief but informative overview of map publishers in Australia. It is a project of the Australian Map Curators Circle which map librarians should welcome with open arms and place orders. The publication is affordable and fulfills its purpose admirably. No map library whose users evince any interest in Australia should be without it. The Checklist of Australian map catalogues and indexes is warmly recommended.

Jack Corse
Simon Fraser University
Burnaby, B.C.

* * *

Le Nord du Québec: profil régional. Publication éditée à la Direction générale des publications gouvernementales du Ministère des communications. Québec: Office de planification et de développement du Québec, 1983. 184 p., 89 cartes, 119 photos. $ 40.00 (ISBN 2-551-05867-8; Commandes postales: Ministère des communications, Diffusion des publications, C.P. 1005, Québec, Qué. G1K 7B5).

Cet atlas, qui prend la forme d'un album cartographique et photographique, présente une synthèse des informations géographiques sur le Nord du Québec. Cet immense territoire peu densément peuplé a fait l'objet de nombreuses études ponctuelles. Mais un ouvrage de base manquait pour donner une vue d'ensemble de cet espace géographique. Certes il existait un Aperçu cartographique sur le Nouveau-Québec publié par le Ministère des richesses naturelles en 1974 (16 cartes monochromes, 41 pages) qui présentait de façon sommaire les principaux traits géographiques du nord québécois. Un ouvrage de calibre approprié s'imposait pour décrire convenablement plus de la moitié du territoire québécois.

L'Office de planification et de développement du Québec (OPDQ) a pour mandat de préparer des orientations de développement pour les diverses régions du Québec en tenant compte des particularités régionales. Une première phase consiste à dresser un inventaire des connaissances. C'est dans cet esprit que se situe la réalisation du profil régional pour le nord québécois. La recherche scientifique préliminaire a été assurée par le Centre de recherche du Moyen Nord de l'Université du Québec à Chicoutimi. Ce Centre a produit 27 dossiers thématiques qui ont servi à la rédaction

par l'OPDQ du document-synthèse, Le Nord du Québec, destiné à une clientèle plus large de personnes qui veulent connaître cette région ou qui veulent travailler à son développement.

La première partie de l'atlas présente une description du nord québécois en cinq chapitres:

1) l'évolution historique du territoire: explorations, postes de traite et missions religieuses, genres de vie traditionnels, évolution territoriale, cadre administratif, noms de lieux;
2) la vie régionale: population, transport, télécommunications, enseignement, santé;
3) le milieu naturel: relief, sous-sol, régions physiques, bassins hydrographiques, climats, écosystèmes;
4) la faune comme ressource-clé: exploitation, territoires, principales espèces;
5) la vie économique: entreprise autochtone, énergie, mines, forêt, tourisme.

Chaque chapitre comporte des cartes en quatre langues (français, anglais, cri, inuktitut), des textes, des statistiques, des photographies et des références bibliographiques.

La deuxième partie de l'atlas présente une description sommaire de 21 villages autochtones: photographies aériennes avec localisation des principaux bâtiments, texte descriptif résumant la localisation du village, le climat local, l'histoire du peuplement, les infrastractures, les services, la vie économique. On retrouve en annexe des statistiques à caractère socio-économique ainsi que la liste des sources ayant servi à la rédaction des planches de l'atlas.

Figure 1 : Le Nord du Québec: profil régional; un album cartographique et photographique. Mise en scène et photographie: Yves Tessier

Cet atlas s'inscrit dans la tendance visant à présenter l'information géographique sous une forme scriptovisuelle. Par la carte, le texte, la photographie de haut calibre, on obtient une vue synthétique des thèmes traités. Il s'agit là d'une formule indispensable à un ouvrage de vulgarisation.

Cet atlas fait époque dans la connaissance du nord québécois puisqu'il est unique par le traitement donné à son contenu. Le Nord du Québec est indispensable à toute cartothèque et à tout centre de recherche et de documentation s'intéressant aux études nordiques, et particulièrement au "Nouveau-Québec."

Yves Tessier
Cartothèque
Bibliothèque de l'Université Laval
Québec

* * *

SYMPOSIUM ON THE MARKETING OF CARTOGRAPHIC INFORMATION

As the "fat and rosy" days of cartographic publishing appear to be fading away, there is now a need for closer scrutiny of the marketplace for maps and an examination of maps as a commodity. However, the marketplace for maps is enormous and chaotic, and users' needs are incredibly varied. This was the focus of the Symposium on the Marketing of Cartographic Information, held at Queen's University in Kingston, Ontario, 14-17 May 1984.

The symposium was organized by Gerald McGrath, of Queen's University, currently with the International Institute for Aerial Survey and Earth Sciences (ITC), in the Netherlands. Representatives of several national mapping agencies, private publishers, dealers, map librarians and the academic community attended from around the world. Twenty-two papers were presented on five principal themes: researching the market; developing the market; distributing the products; pricing the products; and the changing market. The papers were uniformly well prepared and well presented, and the level of interaction was high throughout. There was vigorous discussion and sharing of ideas and opinions on these and a number of other issues which arose as well.

Barbara Bartz Petchenik (Donnelly Cartographic Services, Chicago) opened discussion with her paper "Maps, Markets and Money: A Look at the Economic Underpinnings of Cartography." Her paper describes the "two cartographies"--the making and selling of maps versus the academic study of maps, and the imbalance in the cartographic research and literature between these two sides of the same coin. She writes: "Cartographic research and writing in recent decades has dealt extensively with design principles and the values of graphic communication....it has rarely been concerned with map value in the marketplace."

Survival for map publishers depends on identifying and satisfying users' needs cost-effectively, but the market has been so poorly researched that often it is not easy even to identify who the users really are. There has been a change in the zeitgeist of cartography since the last decade,

forcing a shift in emphasis from questions of map design to map use. What products will be of the most use to the most people? This also raised the point that map user surveys often reveal contradictory opinions as to what should be on maps. Perhaps, it was suggested, if users' abilities to read maps cannot be improved by changing map design or content, map publishers should attempt programs of educating the users in map reading and interpretation as a supplementary approach to marketing. This would also serve to raise the general level of "map consciousness." Maps are working tools. Not only must the publisher know his product before attempting to market it, but the user must know it exists and know how to use it. Unfortunately, as we know, cartographic literacy is not automatic.

Since most national mapping agencies are mandated to disseminate geographic information, this responsibility may easily be in direct conflict with their other objective--to keep in budget, hopefully achieved by recovering at least part of the costs. The Ordnance Survey is in the enviable and remarkable position of actually making a small profit. However, other national mapping agencies, such as the USGS and the Canada Map Office, can only hope, at best, to minimize losses. Canada is an enormous country, largely unpopulated, so there is a minimal market for most of its maps. However, maps are still required for resource development and must be available. Therefore, to help recover part of the costs, many public sector mapping agencies are only just now bringing market analysts on staff. Australia and Great Britain have both promoted and marketed their own maps with considerable success. Canada and the United States have not been either as aggressive or as successful. The private sector map dealers have generally been shown to be much better at selling maps. Dealership networks are the general and preferred means for national mapping agencies to make their products available. One dealer stated, rather dogmatically, that: "Governments have no role to play in the marketing of cartographic information." National mapping should be regarded as a service, not a business, and marketing should be turned over to those who do it best--the private sector.

Various marketing strategies used by both the public and the private sectors were discussed. Marketing is more than just advertising. It also involves identifying the users and their activities and needs. There are five major markets for maps: government, professional, educational, recreational, and "other." Some of these markets are easy to target as their needs are specific and defined. Others, especially the general public, have undefined map needs and are therefore more difficult to reach. Recreational map users are probably the single major revenue source, but they may also be difficult to reach. Direct mail is one promotional technique gaining favour, using specific mailing lists for the targetable market. Attractive and effective packaging for both maps and atlases has been shown to increase sales dramatically. Television and newspaper advertising generally do not pay off, nor do maps tend to sell very well in book stores. Location is a key factor. Targeting interest groups in their own domain is one of the most effective means of selling maps. Sporting goods stores and marinas are standard outlets for selling maps and charts. Even more effective are sportsmen's shows and boat shows, where the dealer is in direct contact with interest groups. A little resourceful thinking can also boost sales. For example, calling hydrographic charts "fishing maps" catches the attention of one very large interest group.

One enterprising British map dealer pays a map librarian a retainer fee for

consultation with regard to users' needs and map acquisition problems. Map librarians are in a unique position to identify these market factors. Other dealers and publishers, on the other hand, seem to regard selling maps to map libraries a subversive sort of activity and avoid the academic market because of a history of unpleasant dealings with ordering departments!

Pricing maps was another area of discussion. The free road maps which Rand McNally gave away in gas stations until 1973 seem to have contributed to the general low-dollar value which many people place on maps. In fact, of course, maps are very costly to compile and publish. Federally produced base maps are heavily subsidized in most countries. Private publishers must pay royalties on copyrights for these maps, as well as heavy production costs. What is a fair price for a map? Fair pricing and pricing formulas for cartographic products were discussed at length.

An issue which kept arising throughout the symposium was that of competition in the marketplace between the public and the private sectors. Governments have a responsibility to provide certain cartographic services. Problems arise when traditional "private sector services," such as road atlases and maps, face competition from the government within their domain, in the scramble for the marketplace. Can the private sector survive competition with the government, and what are the bounds of the governments' mandates?

The last afternoon of the symposium was dedicated to computer-generated cartography. Some rather remarkable programs were demonstrated, notably by Texas Instruments and by Harwood Associates. It was generally agreed that it is the private sector which will make the major advances in this field. The relative limits and merits of computer cartography were discussed, as well as its inevitability. It was stated, for example, that hydrographic charts as we know them will be obsolete within fifty years. However, there will always be other user needs that can be best met by hard-copy maps. Not least of these is the pleasure of "mind-travelling" and flights of fancy which may occur spontaneously while looking at a map, and the interesting, unsought, incidental bits of information which it may provide, all of which can make map reading enjoyable. Barbara Petchenik stated that: "It is likely that maps will continue to exist, but the market for additional printed maps will probably decline relative to an increased total market for spatial data....There are a great many needs for spatial knowledge that are currently met by maps, but which, given a choice, the market would prefer to have met more specifically and more directly....Application-specific spatial data delivery by means of computers, with or without imagery, is here to stay. Our lives are complicated by the fact that we need to understand this new marketplace at the same time that we are just beginning to focus explicitly on marketing conventional maps."

Copies of the printed papers of the symposium are still available for $25.00 (sea mail) from:

Professor Gerald McGrath
Department of Geography
Queen's University
Kingston, Ontario K7L 3N6

Kathryn Harding
Queen's University

* * *

NEWS AND COMMUNICATIONS

A.C.M.L. CONFERENCE: CALL FOR PAPERS

The 19th Annual Conference (1985) will be held at the University of Manitoba from June 4 - 7, 1985. The theme is "Mapping the Prairies."

Formal papers on the conference theme or any topic of interest to map curators are welcome. There will also be an informal session called "Current Issues in Map Collections," where members are invited to speak briefly on relevant topics and events.

Abstracts (in the case of formal papers) or brief outlines for the Current Issues session must be received by the Organizing Committee early in 1985 to receive consideration. They are to be sent to:

Tim Ross
Co-chairman
A.C.M.L. Conference 85 Committee
c/o Provincial Archives of Manitoba
200 Vaughan St.
Winnipeg, Manitoba
R3C 1T5

* * *

SPONSORSHIP OF AN A.C.M.L. FACSIMILE MAP

The Association of Canadian Map Libraries (A.C.M.L.) is the professional association of map curators in Canada. Its Facsimile Map Series aims to make available inexpensive reproductions of historical maps showing Canada. The first 100 facsimiles were produced during the years 1976-82. Sales of these facsimiles help support the activities of the Association.

Maps to be reproduced are usually selected by the Historical Maps Committee of the A.C.M.L., although suggestions for maps to be reproduced are always welcome. It is important that maps selected reproduce well in the format of the series and that they are appealing for their significance or their aesthetic qualities (and preferably, for both).

The facsimiles are printed on Strathmore Artlaid No. 2 Natural paper (pH 4.8), measuring 43 x 56 cm (17 x 22 in.), using a blend of dark brown and black ink. Information about the original map--its author, place of publication, size, and location--is given in English and in French on each facsimile.

Individuals, institutions, and associations may sponsor the production of a facsimile; the sponsor's name appears on the facsimile. The sponsorship fee is $150.00, for which the sponsor receives 100 copies of the facsimile. Additional copies are available to sponsors at a 40% discount from the A.C.M.L.'s retail price of $3.00 (i.e., at $1.80 each). Sponsors receive the same discount for any other facsimiles the A.C.M.L. has in stock. Payment for sponsorship is made to the A.C.M.L. upon receipt of an invoice, after the 100 copies have been delivered.

For further information, contact the chairperson of the Historical Maps Committee at the address below:

Ed Dahl
National Map Collection
Public Archives of Canada
Ottawa, CANADA K1A 0N3
(613) 995-1077

* * *

A.C.M.L. BINDERS

A limited number of conference binders are still available from the 1984 A.C.M.L. Conference (Fredericton, N.B.). Attractively designed, the binders are good quality three-ring binders, with the D-ring rather than the standard round ring. The cost for binders, including mailing charges, is $6.75 each; cheque or money order should be made payable to the Association of Canadian Map Libraries and sent to:

Bill MacKinnon,
Provincial Archives of New Brunswick,
P.O. Box 6000,
Fredericton, N.B.
E3B 5H1

* * *

A.C.M.L. MEMBERS HONOURED

At the annual banquet of the 18th Annual Conference of the Association of Canadian Map Libraries, the Association honoured A.C.M.L. members who have shown support over the years through conference attendence. Those present at the banquet received tokens of appreciation from the membership. Due to an unfortunate miscalculation, Betty Kidd did not receive her Genuine Miramichi Salmon Museum Baseball Cap at the banquet; it is, however, being mailed to her, with abject apologies by the semi-official counter. For the information of members who were not able to be there, the following are those members who have attended more than twelve A.C.M.L. Annual Conferences:

Frances Woodward	18
Hugo Stibbe	16
Maureen Wilson	16
Betty Kidd	15
Serge Sauer	15
Joan Winearls	15
Lou Sebert	13
Tom Nagy	13
Kate Donkin	13

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CANADIAN MAPS FOR AUSTRALIA

While in Australia to attend the International Cartographic Association meetings, I visited the Map Library at the University of Melbourne. The Curator of Maps, Jeff Leeuwenburg, mentioned that he was lacking Canadian coverage at 1:1,000,000. I noted the following sheet numbers which he was missing, but my library does not have duplicates. Perhaps someone who has duplicates would like to get in touch with him to get rid of them or work out an exchange. His address is: Jeff Leeuwenburg, Curator of Maps, Baillieu Library, University of Melbourne, Parkville, Victoria 3052, Australia.

Maps needed are sheets: NK/NL-20, NK/NL-21/22; NL-19; NM-9/10, NM-15, NM-21/22; NN-8/9; NO-10, NO-11, NO-12, NO-13, NO-14, NO-15, NO-18, NO-19; NP-9/10, NP-13/14, NP-15/16, NP-16/17, NP-17/18, NP-19/20; NQ-12/13/14, NQ-15/16/17, NQ-17/18/19/20, NQ-20/21/22; NR-7/8/9, NR-9/10/11/12, NR-12/13/14, NR-15/16/17, NR-17/18/19/20.

Alberta Auringer Wood
Map Library
Memorial University of Newfoundland
St. John's, Nfld. A1B 3Y1

* * *

A.C.M.L. MEMBER SEEKS EMPLOYMENT

Education: Honours Bachelor of Arts (Geography), University of Ottawa, 1977
Master of Library and Information Science, University of Western Ontario, 1984
Languages: French, English, Spanish
Related Employment Experience:
Library technician, Map Library, University of Ottawa, 1979-1984.
Biologist, Central Experimental Forest, Lands Directorate, Environment Canada, Ottawa, 1978.
Special Interest Courses:
Microcomputers in Library and Information Centres, Government Publications, Special Libraries, Canadiana, Advanced Cataloging;
Northern Canada Field Research, Air Photo Interpretation, Botany, Geology, Ecology, Physical Geography, Geomorphology, Teledection.

For a full résumé please contact: Mireille J. Boudreau
60 Daly, Apt. 607
Ottawa, Ontario K1N 6E5
(613) 232-7953(res.)
(613) 231-6830(work)

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IRISH ORDNANCE SURVEY MAPS

The compilers of a cartobibliography of maps and atlases of Ireland would

appreciate hearing of any libraries or archives in the United States or Canada which hold the six-inch (1:10,560) Irish Ordnance Survey maps. They would like to know if these maps are first editions (1833-1846) or later editions. Please contact either of the authors:

Eileen McConnell
3602 Isbell St.
Silver Spring, Maryland 20906

Barbara O'Brien
13414 Oriental St.
Rockville, Maryland 20853

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NEW BRUNSWICK LOCAL HISTORY

Bill MacKinnon, former President of A.C.M.L., has recently published a book entitled Over the Portage: Early History of the Upper Miramichi. Available from Non-Entity Press Ltd. for $7.95, this publication is a detailed account of the founding and settlement of Ludlow and Blissfield parishes, Northumberland County, N.B., during the period 1790-1851. Non-Entity's address is:

P.O. Box 905, Station A
Fredericton, N.B.
Canada E3B 5B4

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The Alberni District Historical Society offers the following atlases to anyone at the cost of postage and handling only:

Atlas of Canada (1915) Dept. of Interior
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B.C. Atlas of Resources (1956) Prepared for the B.C. Natural Resources Conference

Please contact the Society at Box 284, Port Alberni, B.C. V9Y 7M7

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CHERYL A. DESJARDINE, MLS

U.W.O. MAP LIBRARY ATLAS COLLECTION

Department of Geography, University of Western Ontario
Geographical Papers, Publication No. 51, 1983.
ISSN 0706-487X ISBN 0-7714-0462-X

i-xi, 160 pp., hard-cover three-ring binder.
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This publication presents the latest atlas holdings of the University of Western Ontario Map Library (1400 titles, 1600 volumes). An individual entry is represented by basically the same information components as those used by the Union List of Atlases in Ontario Universities (Council of Ontario Universities, 1976): title; author; publisher; place of publication; date of publication; edition; number of volumes. The most important new feature is that the listing is computerized (CYBER-170/835, and the DEC10, using DPL and RUNOFF). Since the previous editions of this list were widely used as check-lists and acquisitions aids, this latest edition was printed in the Geographical Papers series and is made available at cost to all interested map librarians.

Orders are to be sent to: Map Library
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c/o National Map Collection
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Ottawa, Ontario K1A 0N3

HISTORICAL MAPS