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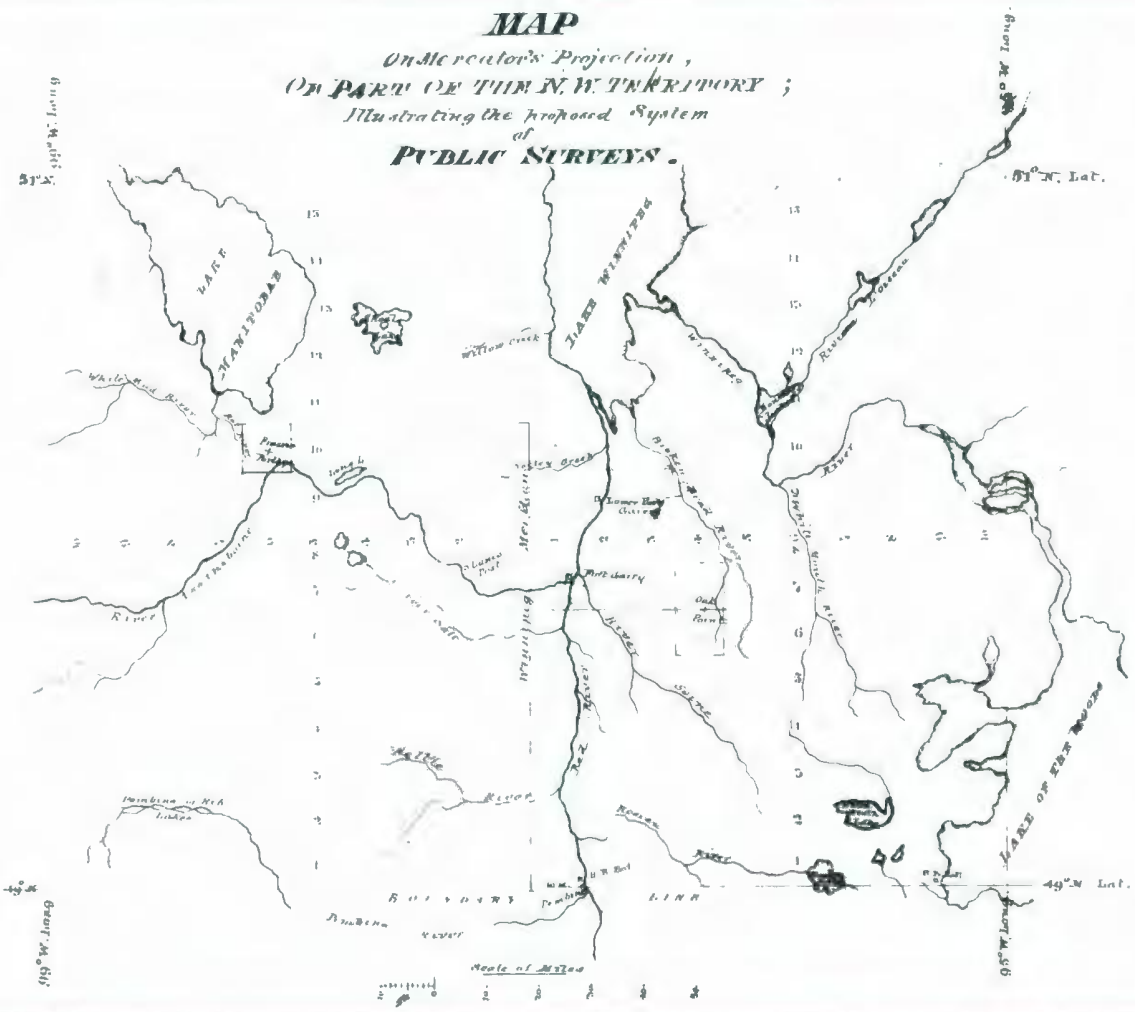
ASSOCIATION OF CANADIAN MAP LIBRARIES

BULLETIN

ASSOCIATION DES CARTOTHEQUES CANADIENNES



It was from the Winnipeg Meridian shown on this map that townships were extended east and west. The 1985 ACML conference will be held in Winnipeg June 3-7, 1985.

From the National Map Collection (C54582)

NUMBER 53/DECEMBER 1984 NUMERO 53/DÉCEMBRE 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 calendar year and are as follows:

Full (Canadian map field)	$25.00
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Members receive quarterly the A.C.M.L. Bulletin, the official journal of the Association.

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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.

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Président	Elizabeth Hamilton	University of New Brunswick
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Les opinions exprimées dans le Bulletin sont celles des collaborateurs et ne correspondent 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.

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REVIEWS

EDITORIAL

The main theme of this issue of the *ACML Bulletin* is disaster contingency planning, a subject which should be of primary interest to most readers.

In *Bulletin* 52, we experienced some difficulty in the printing process; we expect that this has been rectified in this issue. Since the production of these issues are being rushed, we have not had the luxury of approving any "proofs" from the printers. As noted in the last issue, we welcome your views on the *Bulletin's* new look and will ensure that the new editor, when appointed, is aware of your opinions.

By now, you have received the registration package for the 1985 conference in Winnipeg. It will be, without a doubt, another excellent ACML conference -- so complete the forms if you have not already done so and send them to the hard-working Conference Committee. We are looking forward to seeing you in Winnipeg.

Thomas Nagy _____ *Betty Kidd*

ERRATA & SUCH

The correct spelling of the main identifying word in the atlas by James M. Goodman is Navajo, not Navaho, as consistently spelled in the review published in *ACML Bulletin* 51 (June 1984), pp. 69-70, i.e., *The Navajo Atlas: Environments, Resources, People and History of the Diné Bikeyah*. The Review Editor apologizes for overlooking this error and regrets any inconvenience this may have caused.

* * *

The table of ellipsoids mentioned on p. 50 of "Geodesy for Map Librarians" by L.M. Sebert in *ACML Bulletin* 52 (December 1984) was unfortunately omitted. It is reprinted below:

TABLE 1.—*Some Official Ellipsoids in use Throughout the World*[1]

Name	Date	Equatorial Radius, *a*, meters	Polar Radius *b*, meters	Flattening *f*	Use
GRS 1980[2]	1980	6,378,137*	6,356,752.3	1/298.257	Newly adopted
WGS 72[3]	1972	6,378,135*	6,356,750.5	1/298.26	NASA
Australian	1965	6,378,160*	6,356,774.7	1/298.25*	Australia
Krasovsky	1940	6,378,245*	6,356,863.0	1/298.3*	Soviet Union
Internat'l	1924	6,378,388*	6,356,911.9	1/297*	Remainder of the world.†
Hayford	1909				
Clarke	1880	6,378,249.1	6,356,514.9	1/293.46**	Most of Africa; France
Clarke	1866	6,378,206.4*	6,356,583.8*	1/294.98	North America; Philippines.
Airy	1849	6,377,563.4	6,356,256.9	1/299.32**	Great Britain
Bessel	1841	6,377,397.2	6,356,079.0	1/299.15**	Central Europe; Chile; Indonesia.
Everest	1830	6,377,276.3	6,356,075.4	1/300.80**	India; Burma; Pakistan; Afghan.; Thailand; etc.

Values are shown to accuracy in excess significant figures, to reduce computational confusion.

[1] Maling, 1973, p. 7; Thomas, 1970, p. 84; Army, 1973, p. 4, endmap; Colvocoresses, 1969, p. 33; World Geodetic, 1974.

[2] Geodetic Reference System. Ellipsoid derived from adopted model of Earth.

[3] World Geodetic System. Ellipsoid derived from adopted model of Earth.

* Taken as exact values. The third number (where two are asterisked) is derived using the following relationships: $b = a(1 - f)$; $f = 1 - b/a$. Where only one is asterisked (for 1972 and 1980), certain physical constants not shown are taken as exact, but f as shown is the adopted value.

** Derived from *a* and *b*, which are rounded off as shown after conversions from lengths in feet.

† Other than regions listed elsewhere in column, or some smaller areas.

The dot-matrix printer used in the typesetting of that issue of the *Bulletin* was not well-suited for the setting of mathematical formulae. Readers of Part VI of the series on "Geodesy for Map Librarians" should use the following listing of the same formulae:

$$M = 111132.0894\phi^{\circ} - 16216.94 \sin 2\phi + 17.21 \sin 4\phi - 0.02 \sin 6\phi$$

$$x = k_0 N[A + (1 - T + C)A^3/6 + (5 - 18T + T^2 + 72C - 58e'^2)A^5/120]$$
$$y = k_0\{M - M_0 + N \tan \phi [A^2/2 + (5 - T + 9C + 4C^2)$$
$$A^4/24 + (61 - 58T + T^2 + 600C - 330e'^2)A^6/720]\}$$

The above reprints have been taken from *Map Projections Used by the Geological Survey*, by John P. Snyder, in *US Geological Survey Bulletin* 1532 (Washington: United States Printing Office, 1982). The ellipsoid table is reprinted from p. 15, and the formulae from pp. 20 and 68.

L.M. Sebert
Ottawa, Ontario

ACML BULLETIN EDITOR REQUIRED

THE POSITION OF *BULLETIN* EDITOR IS CURRENTLY VACANT, AND THE BOARD IS ANXIOUS TO FILL IT AS SOON AS POSSIBLE. EDITORIAL DUTIES WILL COMMENCE WITH THE JUNE 1985 ISSUE. WOULD MEMBERS INTERESTED IN ASSUMING THIS POSITION PLEASE CONTACT:

Hugh Larimer
Chairman, Publications Committee
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DISASTER CONTINGENCY PLANNING FOR MAP COLLECTIONS: AN OUNCE OF PREVENTION . . .

Thomas Nagy
National Map Collection
Public Archives of Canada

As custodians of map collections, we are well aware of those disasters of recent years which have inflicted severe damage to a number of collections of rare books, manuscripts, maps and artifacts in various repositories. The media have given an unusual amount of publicity to these unfortunate occurrences because of the high monetary value of the collections involved and the astronomical insurance claims that were made and paid in the settlement of the damage caused to them. Even so, no sum can compensate for the fact that most items lost through such disasters are unique in nature and, therefore, priceless. Moreover, as has been pointed out in several earlier articles on the subject, few institutions have actually taken concrete steps to prevent disasters from happening. The purpose of this paper, therefore, is to briefly outline to the map community some of the logical steps that one can take to prevent disasters from happening and, should such a disaster occur, those measures to take in order to salvage the valuable and irreplaceable documents that been entrusted to its care.

Mildred O'Connell states in her article on coping with disasters that "planning ahead . . . not only reduces permanent damage or loss to collections but also sometimes actually prevents disasters from happening. It is therefore essential that librarians, curators and others who are entrusted by the public to preserve our cultural inheritance take an active role in developing disaster plans. Planning includes assessing building problems which might endanger collections, citing and correcting existing hazards, and listing steps required to save collections should fire or flood occur. A written disaster prevention/recovery plan should be made available to all staff members who work in these institutions."[1]

First of all, let us define exactly what a disaster is. The dictionary definition is that it is "a sudden misfortune which brings on destruction of life and property." For our purposes, we can simply define a disaster in a map collection as an emergency situation which happens without warning and causes the destruction of documents and disruption to the normal operations of the affected repository. Also note that the severity of the various types of disasters can range from the total destruction of a repository together with its many collections to the "inconsequential" damage of an item or two of peripheral interest with few adverse effects to the daily operation of the repository or even to use of the affected collection.

The types of disasters that can strike a map collection range from earthquakes to water damage caused by floods, heavy rains, hurricanes, snow and ice storms, and, of course, fire which has a double impact. Fire can occur in any institution, no matter what its physical or geographical location. Spills from an overturned truck or railway car can cause fire. Electrical or mechanical failure, human carelessness and the location of a building close to fire hazards such as a wooded area or any other high-risk fire area may make a collection even more vulnerable to fire hazards.

Thoughtful planning by architects and administrators can lessen the probability of disasters such as fires and flooding in new buildings. Keep this in mind and read relevant documentation relating to fire prevention and emergency planning. Remember that fire departments can create damage as well as protect your valuable maps. Fire hoses are heavy and soiled, and the water pressure is tremendous. Firemen work under dangerous conditions, use axes and other tools to fight fires. They are not concerned with salvaging individual items. Therefore your institution cannot afford a fire because the risk of heavy damage is too great.

Stephen Weldon, in his article on "Fire Protection Systems and Fire Prevention Techniques," notes that "there are eight hazards associated with a fire: (1) fire or flames; (2) smoke; (3) water; (4) rough handling; (5) salvage; (6) equipment and materials used to combat the fire; (7) element exposure; (8) theft/vandalism".[2] Hence, if the loss of a valuable item occurs by fire, the loss tends to be quite complete and recovery usually is not possible. Consequently, fire prevention is imperative and the human factor is very important in the detection of fire.

Train yourself and your staff to be conscious of fire hazards. Electrical preventative maintenance is crucial. Some of the things to look for are frayed electrical cords,

defective heating appliances, transformers, audio-visual equipment, damaged fixtures, switches, receptacles and other miscellaneous wires and devices in your building. Another major fire hazard is the pile of boxes, maps, books, atlases and materials which we all have accumulated and hidden in our stack areas and other inner sanctums out of sight from the eyes of the public using our facilities. If you inspect your facility you will inevitably find these fire traps. Do something about it. Keep all areas neat and clean and make sure you have passageways in and around piles of material. No smoking, except in designated "safe" areas, is also an important preventative measure. By following the above advice, you can eliminate some threat of fire.

As you know, there are a number of different types of fire detectors on the market. But most experts in the field agree that the best are the combustion ionization detectors because these devices can sense fire in its incipient stage, that is, when there is no visible smoke, flame, or any significant heat developed. Photo-electric smoke detectors sound the alarm at the smoldering or smoke stage when the quantity of combustion particles increases to the point which smoke is actually visible. The rate-of-rise fixed temperature types of detectors are not highly recommended because they react only to excessive heat; by then, there is visible flame and you may actually have some of your precious collection burning.

In terms of fire suppressants, "Halon 1301" --a low boiling, colourless liquified compressed gas having high density and low viscosity -- is considered the best suppressant to protect a collection in an arts facility. Briefly, the chemical reaction of halon reacts with transient combustible products to terminate the reaction in the combustion chain and to stop flame activity. Halon stops most fires, leaves ample oxygen in the environment for people to breathe, and does not damage material because it leaves no foam, powder or residue. However, if the area or building does not remain intact (for example, should there be an explosion, or if the windows are broken, etc.), the halon concentration escapes and is rendered ineffective.

A sprinkler system in such an instance would prove more effective, but it can bring about instant water damage. However, there are sophisticated systems available which eliminate the fear of leaking pipes in collection rooms. For details of this, see Stephen W. Weldon's article in *Museum, Archives, and Library Security*. Train your staff and your local fire department because quick detection and careful action is crucial to saving your collection. Make sure that modern fire protection equipment is installed in your facility, and that it is operable.

Many common-sense preventative measures can be taken to alleviate disasters. For instance, if your building is on a flood plain, ensure that valuable material is not stored in a basement or on the first floor. Regularly examine and repair any damage to your roof, gutters and drain pipes. Never store material on the floor in case of water damage. Have your facility checked by security staff or the like at regular intervals during day and night. Keep rare material away from air conditioning equipment, photocopiers, heaters, etc. I am confident that, after carefully inspecting their facilities, map curators can come up with various safeguards to prevent disasters from occurring and lessen the impact of non-preventable disasters when they do happen.

Realistically speaking, a disaster can and will happen no matter how much planning is done to avert it. Therefore, it is crucial that all map curators also develop plans to recover from disasters, and one of the very first steps in this process of contingency planning is to name a disaster team consisting of staff members. If your institution is small, make arrangements with other similar types of institutions in your area for mutual cooperation in a disaster situation. One immediate benefit to this type of cooperation is that space to store damaged material can be provided by the undamaged institution until such time as you are back in operation after a disaster.

Your disaster action team should consist of representatives from the curatorial and conservation staff, the physical plant and property management staff, and the administrative staff -- the people who control personnel and finance. Such a disaster prevention team will ensure that your institution is prepared for any eventuality and that supplies and emergency facilities are located and people are available to cope with disasters.

All authors on this topic agree that the key person on a disaster team is the recovery director who is in charge of the entire operation from start to finish. This person must possess an appreciation of the material to be salvaged, be knowledgeable about conservation techniques and, foremost, have the ability to manage a complex project for an indefinite period.

Once the organizational structure is in place, it is important to draw up step-by-step procedures to be followed when a disaster strikes. A list of the disaster team and their alternates must be made available. Each member will have specific duties such as:

liasing with police and fire officials;
overseeing security;
contacting pre-arranged suppliers of emergency equipment, facilities and personnel;

> keeping written and visual records of the disaster and the physical movement of material from one area to another. (It is important to know where your material is located.)

On the whole, disasters faced by map collections can generally be divided into two categories: those involving fire and those involving water damage. Of course, a fire will also bring water damage. Furthermore, map collections face specific problems unique to the medium. Maps come in different sizes and on various types of paper such as tissue or onion skin (which is very fragile) or coated linen (which can be very strong). Not all maps are printed, for they may be drawn with water colours and inks of many vintages and chemical compositions. Some maps are backed using a variety of pastes or glues to give them support. All of this complicates recovery because water and fire damage can have a different impact on the various types of maps and plans as well as on the type of recovery operation to be implemented.

Even though map curators encounter these unique and troublesome problems, there are constants to which they must adhere. Logic dictates that the first step in a recovery operation is to assess the damage and then to evacuate the damaged items in a systematic manner. Inform fire and police officials that your recovery team has to gain access to damaged areas to begin recovery operations quickly. With water-damaged collections you have only about forty-eight hours to act before mould and mildew set in. However, if it is hot and humid, mould can begin more quickly. Remember that damp paper will support the growth of mould and, in turn, this can stain and weaken the paper to the point where it cannot be saved.

Priorities as to what should be evacuated must be in place. Material beyond salvage should be discarded. Material not worthy of salvage may be discarded, but you must ensure that valuable time and money is not lost in attempting to recover those items which may be replaced inexpensively, for example, N.T.S. sheets or current geological material.

Sandra Wright and Gilles Langelier, in their article on "Contingency Planning for Cartographic Archives," write:

> The decisions about what materials are most important and valuable must be made prior to the crisis. In a large institution such as the Public Archives of Canada, this exercise is extremely difficult. In the National Map Collection it was determined that priorities for evacuation would be established based on four criteria: Uniqueness, value, replaceability and surplus. In the contingency plan for the Archives Branch as a

whole, the priorities were outlined in the following manner:

1. Manuscript maps, Government records, architectural collections; divisional records.
2. Early printed maps and most individual printed maps; early atlases.
3. Series maps both Canadian and foreign; modern atlases; divisional library.
4. Duplicate maps or redistribution material.[3]

They also point out that in many map collections, including the National Map Collection, maps are filed by geographic area which results in having manuscript and printed maps in the same drawers or filing cabinets. This integration of dissimilar materials makes recovery even more difficult. How would you take out wet material from a tightly packed drawer and then, if you had managed this task, how would you physically carry these maps? This and many other questions are answered in the Public Archives contingency plan to which I have previously referred. (See appendix on pp. 13-30 following.)

In any recovery operation, make sure that the office files and catalogues and accession lists are not forgotten because these are invaluable in assessing your losses and in helping to reconstitute parts of your collection. It is also important to remember that no document should be discarded without written permission and instruction of the person in charge.

A logical way of starting your recovery operation can be as follows: First, remove the wet material strewn in the entrance and aisles. Charred records should be wrapped gently between two sheets of cardboard and handled very carefully to avoid crumbling. Second, starting from the nearest point of access, the wettest records should be moved out to have them immediately frozen if possible and then make sure that you reduce the relative humidity in the affected area. Third, evacuate the very damp or partially wet records and, fourth, evacuate the slightly damp materials. Finally, take care of the dry records.

Many knowledgeable people feel that, in case of water damage, cartographic documents should be immediately frozen unless the number of documents is so small that hand-drying can be done. Refrigerated trucks can be used to freeze the material and to transport them to the freezer storage areas or bulk-drying facilities. There must be forced air circulation in the trucks and the temperature should be kept between -26° to -29°C. The wet material should be placed in

appropriate containers no higher than 2.4 metres and an aisle space should be left for access and to help freezing.

"Freeze-drying" seems the most appropriate method for cartographic documents because it is the only treatment that prevents colour bleeding, but it is also the most expensive method. For printed topographic series, it may be possible to use a vacuum-drying method. A note about vacuum-drying; since it can leave stains, it is not highly recommended. I must point out that more research is required to evaluate the use of all mass-drying processes for documents other than books and files. Further investigation and consultation with map conservators is required. Meanwhile, the option of manual drying may provide good enough results if it is done under the supervision of skilled persons. Langelier and Wright discuss this in their article on "Contingency Planning." They write that

> a distinction should be made between the air-drying process with inter-leaving and the drained-air drying process. In the latter, the water is drained from the books and evaporated by providing good air circulation. A drawback of this method is that sticking of coated papers will likely occur. The air-drying process with inter-leaving means that as soon as a book, an atlas or a pack of wet files has dried enough to be opened naturally or its pages separated, it is inter-leaved with blotting paper, which is changed frequently, until all the pages are dried completely . . . . The Archives nationales du Quebec used this method to dry voluminous registry books which were water damaged in a flooded basement of the old Palais de Justice Building in Quebec. Each of the 105 registry books was dried in about five to eight days using the interleaving technique. However, most cartographic documents are in the form of single sheets and a different technique of manual-drying is required. The technique recommended by Peter Waters takes advantage of the special properties of polyester non-woven fabric and film."[4]

You must plan ahead and decide on how you are going to recover damaged material. Do not leave any of the decision-making process until after the disaster has occurred. Know in advance how you are going to get your damaged maps out of the disaster stricken area. Devise methods to carry a pile of soaking wet maps from their storage to where you are going to dry them. Make sure that you have on hand or make arrangements to obtain flat boxes, slats of wood or plywood sheets, covered with polyethylene sheets to carry maps. Have on hand freezer paper, waxed paper or silicone paper to wrap

atlases or bound volumes and thus prevent them from sticking together. Make sure that you restore environmental conditions in your damaged area to acceptable levels quickly. Have dehumidifiers, air and electric fans available to dispel moist air. Note that wet carpeting retains moisture and must be dried or, in some instances, discarded. The overall temperature to air dry your material should be under 68°F and the humidity below 55%. Note that these figures on overall temperature and humidity vary from article to article. Remember that after recovery the major task of assessing the damage begins and the costly and time consuming efforts of restoration by the conservators takes place.

There are many questions to be asked and answers to be sought. We, the map curators independently or in groups, through our institutions or using the ACML's resources, must work toward preventative measures and contingency plans. At the National Map Collection, Public Archives Canada, there exists a written contingency plan; a copy of which appears in appendix. This is provided to help other institutions in preparing their own contingency plans. It must be remembered that we all have our own individual needs and we are all faced with human and financial constraints. We must therefore cater to our own requirements and we will run into frustrations beyond our imagination. Persevere and do something; after all they are our collections and our livelihood.

In closing I would like to underline Langelier and Wright's concluding remarks from their *Archivaria* article. It should help you to cope and carry on with contingency planning during those frustrating moments.

> There is inevitably the cruel realization that preventive measures are not enough in the face of disaster and that curators' ability to implement all but the most basic preventive measures may be severely limited. What can a curator do, for example, about the institution which is built on a flood-plain, or about the storage facilities which are located in an industrial park alongside oil or gas tanks, or on a major airport flightpath? Inevitably, the expression of these concerns is met with appeasing statements to the effect that the building has been flood-free for almost a century, or that it is the only space available. Similarly, installation of sprinkler systems or halon gas systems has been urged, and yet funds for that type of equipment seldom become available until after a disaster. For example, further investigation is still needed to find out what type of protection, if any, acid-free folders provide in a flood. Archivists and technical experts might direct their

efforts to this sort of research and experimentation. Would a different construction material for acid-free folders offer better protection than does the material used at the present time? Does encapsulating maps water-proof them?

Notes

1. Mildred O'Connell, "Disaster Planning: Writing and Implementing Plans for Collections -- Holding Institutions," *Technology & Conservation* 8 (Summer 1983): 18.

2. Stephen Weldon, "Fire Protection Systems and Fire Prevention Techniques," in Lawrence J. Fennelly, ed., *Museum, Archives and Library Security* (Boston, Mass.: Butterworths, 1983), p. 187.

3. Gilles Langelier and Sandra Wright, "Contingency Planning for Cartographic Archives," *Archivaria*, 13 (Winter 1981-82): 53.

4. *Ibid.*, p. 57.

5. *Ibid.*, p. 58.

Select Bibliography on Disaster Contingency Planning and Disaster Preparedness

Books and Reports

Association of Research Libraries, Office of Management Studies. SPEC Kit #69: *Preparing for Emergencies and Disasters.*

Bohem, Hilda. *Disaster Prevention and Disaster Preparedness.* Berkeley, Calif.: University of California, 1978.

Eastman Kodak Company. *Preservation of Photographs.* Publication #F-30, 1979.

_____. *Prevention and Removal of Fungus on Prints and Films.* Publication #AF-22, 1974.

Federal Fire Council. *Salvaging and Restoring Records Damaged by Fire and Water.* Washington, D.C.: Federal Fire Council, n.d.

Fennelly, Lawrence J., ed. *Museum, Archives and Library Security.* Boston, Mass.: Butterworths, 1983.

Fortson-Jones, Judith. *A Manual for Paper Preservation and Disaster Planning for Archives, Libraries and Museums in Nebraska.* Lincoln, Neb.: Nebraska State Historical Society, 1981.

_____. *A Manual for Records Preservation and Disaster Planning for Local Government Agencies in Nebraska.* Lincoln, Neb.: Nebraska State Historical Society, 1981.

National Fire Protection Association. *Archives and Records Centers 1980.* NFPA publication 232AM, 1980.

_____. *Fire Protection by Halons.* NFPA publication SPP-26, 1975.

_____. *Fire Protection Handbook.* NFPA publication FPH1581, 1981.

_____. *Manual for Fire Protection for Archives and Records Centers.* NFPA, 1980.

_____. *Portable Fire Extinguishers: Installation Maintenance and Use.* NFPA 10, 1974.

_____. *Protecting Our Heritage for Future Generations.* NFPA publication MP70-1, 1970.

Regan, Ed. *Damaged Paper Restored by Freeze-Drying Techniques.* St. Louis, Mo.: McDonnell Douglas, 1974.

Waters, Peter. *Procedure for Salvage of Water-Damaged Library Materials.* 2nd ed. Washington, D.C.: Library of Congress, 1979.

Whittow, John. *Disasters: The Anatomy of Environmental Hazards.* London: Allen Lane, 1980.

Articles

Bohem, Hilda. "The Second Law of Disasters or, Why Is It That Pipes Always Burst on Sunday?" *Conservation Administration News*, 2 (September 1979).

Bower, Peter, and Charles Brandt. "Operation Paper Lift." *Archivaria*, Summer 1981.

Buchanan, Sally. "Disaster: Prevention, Preparedness and Action." *Library Trends* 30 (Fall 1981).

Casey, Mary Lou. "Report of a Flood and Recovery Operations at Western Wyoming College." *Colorado Libraries* 7 (September 1981).

Chapman, Joseph. "Fire." *Museum News* 50 (January 1972).

"Disaster Prevention and Action." *Oklahoma Librarian* 30 (October 1980).

"Disaster Prevention/Disaster Recovery Roundup: Guide to Manufacturers and Suppliers of Products and Services for Fire, Flood and Water Damage Control." *Technology and Conservation* 8 (Summer 1983).

"Floods -- A Lifetime of Experience." *Conservation Administration News*, 3 (January 1980).

Keeler, David Z. "Flood Recovery Actions for Research Records." *Records Management Quarterly*, January 1977.

Kelly, Michael. "Disaster Planning in Colorado." *Colorado Libraries* 7 (June 1981).

Koesterer, Martin G., and John A. Geating. "Application and Utilization of a Space Chamber for the Drying of Books, Documents and Restoring Water-Soaked Papers and Textiles: Applying Freeze-Drying Methods to Books and Art Objects." *Technology and Conservation of Art, Architecture, and Antiquities* 1 (Fall 1976).

Kula, Sam. "Rescued from the Permafrost: The Dawson Collection of Motion Pictures." *Archivaria*, 8 (Summer 1979).

Langelier, Gilles, and Sandra Wright. "Contingency Planning for Cartographic Archives." *Archivaria*, 13 (Winter 1981-82).

Leighton, Phillip D. "The Stanford Flood." *College and Research Libraries* 40 (September 1979).

London, Sol. "Outer Space Saves 40,0000 Water-Soaked Books." *Records Management Quarterly* 13 (April 1979).

McColgin, Michael. "Don't Just Do Something -- Stand There." *Conservation News* 1 (May 1981).

McGregor, L., and J. Bruce. "Recovery of Flood Damaged Documents by the Queensland State Archives." *Archives and Manuscripts* 5 (August 1974).

Moon, Myra Jo. "A Report on the Colorado Disaster Prevention and Preparedness Workshop." *Colorado Libraries* 7 (September 1981).

O'Connell, Mildred. "Disaster Planning: Writing and Implementing Plans for Collection-Holding Institutions." *Technology & Conservation* 8 (Summer 1983).

"The Stanford Library Flood Restoration Project." *College and Research Libraries* 40 (November 1979).

Tiszkus, Alphonse T., and E. G. Dressler. "Fire Protection Planning for Cultural Institutions: Blending Risk Management, Loss Prevention, and Physical Safeguards." *Technology and Conservation of Art, Architecture, and Antiquities* 5 (Summer 1980).

Appendix

This appendix -- "Recovery Operations - National Map Collection" -- is excerpted from the Public Archives' contingency plan. It is reprinted here on the pages immediately following through the courtesy of the Public Archives of Canada.

III. Recovery Operations - National Map Collection

Table of Contents

NOTE: ALWAYS PROCEED INTO ANY AFFECTED AREA WITH THE UTMOST CAUTION.

(1) Emergency Notification Procedures

During Office Hours

As well as complying with current fire instructions for the Public Archives-National Library, the person discovering the emergency shall notify the Division Director who shall then call the General Services representative on the Disaster Action Team (DAT). The General Services representative and the Division Directors involved shall determine if the situation is serious enough to warrant a full-scale disaster recovery operation.

If the situation is not serious, divisional personnel shall proceed to salvage material following the procedures indicated below and with whatever assistance is required from the General Services representative and the professional conservators on staff. For minor emergencies, the Recovery Director shall not be notified.

If the situation is serious, the General Services representative shall notify the Archives Branch Director-General, the Recovery Director, and the Departmental Administration Executive Director while the Division Directors shall notify their DAT members and any of their managers whom they wish to be involved initially. The Director-General shall notify the Dominion Archivist and the Assistance Dominion Archivist.

Outside Office Hours

The commissionaire on duty shall notify the General Services representative on the DAT and the Division Directors whose stacks and/or office areas are affected. The General Services representative and the Division Directors involved shall determine if the situation is serious enough to warrant a full-scale salvage operation.

If the situation is not serious, divisional personnel shall be contacted by their Director to proceed with the salvaging of their material as detailed in the procedures below and with whatever assistance is required from the General Services representative and the professional conservators on staff. For minor emergencies, the Recovery Director shall not be notified.

If the situation is serious, the General Services representative shall notify the Archives Branch Director-General, the Recovery Director, and the Departmental Administration Executive Director while the Division Directors shall notify their DAT members and any of their managers whom they wish to be involved initially. The Director-General shall notify the Dominion Archivist and the Assistant Dominion Archivist.

NOTE: Map conservators must also be notified, their assistance being essential. (See Appendix A-5.)

(2) Emergency Phase Liaison

During the emergency phase, the Archives Branch Director-General or his alternate shall be on hand as an "emergency liaison officer". In the case of a fire, he shall, along with the Departmental Security Officer, act as a resource person dealing with and advising the fire authorities. During this time, the Recovery Director may not be on-site. Once the Director-General has determined that the emergency phase is over, he shall then turn control of the recovery operation over to the Recovery Director. If the Recovery Director is still not on-site, then the Archives Branch Director-General or his alternate shall continue to direct the recovery operation until the Recovery Director arrives.

(3) Security Measures

The Departmental Security Officer (DSO) shall ensure that the perimeters are secured as soon as possible to prevent intrusion by the press and other unauthorized persons. Particularly in the case of restricted government records, access by unauthorized persons must be controlled during the emergency and throughout the recovery operation. The DSO shall determine how many extra security guards are required and brief them on their responsibilities both during the emergency and during the recovery operation. Once the salvage operation has commenced, the DSO shall provide all recovery personnel with permits so that they can have access to the secured areas. The DSO shall ensure that there is no loss, theft, or damage of materials being moved or worked on in temporary storage and treatment areas.

(4) First Access to the Affected Areas

The Departmental Security Officer and, if it is a case of fire, the Fire Chief or senior fire official on the scene, shall determine when Archives personnel may enter the affected areas to begin the recovery operation. Care shall be taken to ensure that recovery personnel are not endangered by such hazards as electrical wires, released gases, sharp objects, and structural weaknesses. Note that no evacuation or salvaging of materials or divisional records shall take place during a serious emergency without the permission of the security, fire, and police authorities.

(5) Damage Assessment

The Archives Branch Director-General, the DAT, and the Division Directors involved shall assess the extent of damage. In the case of a fire, for example, the amount of charring of works, the amount of material severely or mildly water-damaged, and the disorder of the stack area should be taken into consideration. The safety of materials which are endangered shall be guaranteed before the salvage of damaged records is started. Consideration shall also be given to the necessity for emergency evacuation of collections. The DAT shall determine how many extra people will be required for the salvage operation. The Departmental Security Officer shall ensure that extra personnel have been security cleared as required. The reference staff (if reference service is still maintained) shall be notified by the DAT

that all retrieval of records from the stack area involved will be halted until further notice.

NOTE that, because of the physical characteristics of the media, it is essential that Collection section chiefs and map conservators both be involved in the appraisal of damage. Section chiefs shall appraise the priority in the collection of the documents involved while the conservators shall appraise the priority in damage. Both shall consult with the Recovery Director in formulating a plan of action.

(6) Establishment of Recovery Operation

The Recovery Director shall be provided with an office area near the scene and a means of communication, whether telephone, walkie-talkie, or "runners", established. At the beginning of each day, the Recovery Director shall meet with the DAT and with the supervisors of the work teams to review progress and discuss strategies. Bulletin board "message centres" shall be set up in the Recovery Director's office area and in the work areas; all messages shall be initialled when read and shall be saved for selective inclusion in the formal disaster report. The Recovery Director shall report to Senior Management and Division Directors on the progress of the salvage operation on a daily basis initially, then as frequently as required. The Recovery Director shall participate in briefing the press as frequently as required; note that only Senior Management, the Recovery Director, or their designates shall communicate with the press.

(7) Emergency Facilities and Supplies

The General Services representative shall designate someone from Departmental Administration to begin calling for the emergency supplies and facilities needed. All of these facilities and supplies will have been identified previously. The person calling shall be sufficiently familiar with the contingency plan that he can discuss knowledgeably what is being done and what is required as well as improvise as required under the direction of the Recovery Director.

(8) Work Teams

If the salvage operation is sufficiently large-scale that the staff of the divisions involved cannot cope, the General Services representative shall designate someone from Departmental Administration to contact other areas of the Public Archives for assistance; if still further aid is required, then staffing authorities shall be contacted regarding the emergency hiring of appropriate personnel to assist in the salvage operation. As well, other cultural institutions shall be contacted for assistance.

As soon as sufficient personnel have been assembled, work teams shall be organized by the Recovery Director. A number of teams will be required in any large-scale recovery operation. Teams will be needed for moving maps out of the damaged stack area, for wrapping or packing them for transfer into the freezer or to the manual air-drying facilities and reacclimatization area, for actually performing the air-

drying operation, for reboxing documents after they have been recovered, and for reshelving or refiling the collections at the very end of the salvage project.

Because of the physical characteristics of the media, it is essential that the map conservators be on hand at all times to give advice and assistance. A photographer with an electronic flash shall be present to make the necessary visual record of the disaster and the state of the collections.

Each team shall be organized under a supervisor so that the DAT will have one person per group to communicate with at all times. Members of teams shall trade duties as often as possible to avoid the additional stress of having to perform continuously the same boring, dirty, or heavy tasks. Regular relaxation and refreshment periods are essential and shall be provided.

(9) Environmental Controls in the Affected Stacks

Temperature and humidity controls shall be started in the stack areas affected. It is essential to lower the humidity as quickly as possible and maintain it at no higher than 50%; temperature levels as close as possible to 18°C. should also be maintained since heat speeds up the development of mould and mildew. The general rule is that mould and mildew will appear within 48 hours if the environment is not controlled; this period will be shortened significantly if the ambient temperature and humidity are higher than normal (ie. during an August heat-wave).

If the air conditioning system is non-operable, then fans and dehumidifiers shall be installed in the affected stack areas. It is essential to eliminate any pockets of stagnant air. The DAT shall ensure that frequent measurements of the temperature and humidity are taken and recorded; any dangerous levels shall be reported at once to the Recovery Director. Fans and dehumidifiers or air-conditioners shall operate during the night as well as in the daytime. Lights shall be kept on at all times to impede mould and mildew development.

NOTE that the documents (at least the ones in the PANL Building) are preserved in a very stable environment where a sudden alteration of this stability is a tremendous shock to them. Sudden changes can cause the globes, for example, to suffer severe damage to the structural layers through cracking. Thus, temperature and humidity regulation shall be carried out gradually. The temporary storage facilities required for housing unharmed collections and carrying out salvage and conservation treatments must be selected to provide the maximum in space, stability, and security. Since the temperature and humidity levels must be controlled and may need to be adjusted gradually, these facilities shall either have such adaptable environmental controls or shall permit the construction of a temporary room in polyethylene in which the local environment can be closely controlled for special groups of documents.

(10) Sterilization of Flooded Stacks

If records have been submerged in the stacks for over 48 hours, the Recovery Director shall consult with conservation experts and a mycologist about the need to sterilize the water by adding chemicals.

(11) Evacuation of Records from Affected Stacks

NOTE: MAKE HASTE SLOWLY!

No records shall be moved until a plan of action has been developed and communicated by the Recovery Director to all members of the DAT and to all supervisors (NMC Director and Section Chiefs).

The records shall be separated as quickly and as carefully as possible according to the level of damage and according to the NMC evacuation priorities. In the case of fire, there will be charred, wet records which are not salvageable and partly charred records that are water-soaked but recoverable. Then there will be records which have not been fire-damaged, but are soaking wet, very damp or partially wet, slightly damp, and dry. In a flood situation, documents might be covered with mud and silt.

All documents must be removed from the affected area.

A precise record of what material is being removed and from which area must be kept since the documents will not necessarily be taken out of the affected area in any particular order. No documents, even those which are seriously disarranged, shall be moved without being identified in some way; if an archival container has lost its label or if the label is semi-legible, further location information shall be written in pencil on the box. If possible, all emergency containers being used shall be numbered and their contents identified.

No documents shall be discarded without written authorization and specific instructions from the Director, National Map Collection.

The evacuation should be done in the following order:

1) The wet material strewn in the entrance and aisles. Charred records shall be wrapped gently between two sheets of cardboard and handled very carefully to avoid crumbling.

2) Next, starting from the nearest point of access, the wettest records shall be moved out to have them immediately frozen and to reduce the relative humidity in the stack.

3) Evacuation of the very damp or partially wet records.

4) Evacuation of the slightly damp materials.

5) Finally, the dry records.

In a major disaster where chance of loss could be greater, the Recovery Director of the DAT may require from the National Map Collection Director guidance on the sequence in which collections would be removed. These priorities could be based on uniqueness, value, replaceability, and surplus.

Priority 1:

Manuscript maps, Government Records, Architectural Collections; Divisional Records

Priority 2:

Early printed maps and most individual printed maps; early atlases

Priority 3:

Series maps both Canadian and foreign; modern atlases; divisional library

Priority 4:

Redistribution materials.

(12) Handling of Damaged Records and Their Preparation for Freezing or Drying

The National Map Collection holdings have characteristics which would greatly complicate the recovery operations. The format of the documents: some are extremely large. The thickness of bound items varies considerably. The lack of uniformity in methods of storage. The need to note the medium on which the information is recorded before making any attempt to salvage the documents: several maps have been backed using all sorts of pastes or glues and, if wet, the backing may start to detach from the maps.

As recommended in Peter Waters' brochure, any water-damaged cartographic documents should be immediately frozen unless the number of documents is so small that hand drying can be immediately done.

Refrigerated trucks shall be used to freeze the water-damaged works and to transport them to freezer storage areas or bulk-drying facilities. The trucks shall have forced air circulation capable of maintaining constant temperatures of -26 to -29°C. Works shall be placed in containers in the vans to a height of not more than 2.4 metres. Aisles shall be left to provide easy access and speed freezing.

Freeze-drying seems the most appropriate method for cartographic documents because it is the only treatment that prevents colour bleeding, but it is also the most expensive method. For printed topographic series, it may be possible to use a vacuum-drying method. However, further investigation and consultation with map conservators will be required to decide which technique is most appropriate.

a) General Guidelines

Wet paper is extremely fragile. Therefore, do not attempt to open or compress wet materials or separate wet pages. In the case of cartographic documents, particularly the oversize maps and thick atlases, there will be a weight problem which will add

to the handling problem. Do not place wet materials directly onto varnished book trucks since they will stick to the surface and be further damaged. Label all packing containers and wrappers for easy identification. Do not use staples, paper clips, felt-tip or ink pens, coloured paper and newsprint, or adhesive tape on wet materials.

b) Maps in Horizontal Cabinets

Excess water in each drawer shall be sponged out or removed carefully with a wet vacuum cleaner and the drawers shall be removed without removing the maps. The drawers with maps shall be placed in the freezer if the decision to freeze is taken. To prevent sliding of drawers and to prevent contact between maps and drawers, and to ease air circulation in the freezer, slats of wood (ex: 1" x 2") shall be placed between the drawers. If the drawers cannot be removed from the cabinets, then gently remove the contents all at once taking care to provide support underneath the documents as they are being moved. Oversize maps may have to be loosely rolled, wrapped in freezer paper and placed like that in the freezer truck. Empty drawers can be used, when available, to carry the maps to the freezer; otherwise, thick cardboard boxes shall be used.

If it is decided to prepare the maps immediately for drying, they may be separated, using Waters' method with polyester film (3 mil thickness) and web described in his manual (pp. 22-23).

NOTE: Because of the expansion of wet paper, it may be impossible to remove or open drawers.

c) Maps in Vertical Cabinets

As in the case of the records in the horizontal cabinets, if the materials are permitted to dry on their own, colours will run, backings will lift off, and the documents will stick together; furthermore, because of the means of storage, these records will become severely distorted unless removed quickly from the cabinets. To remove the records, separate between the polyester interleaving sheets into 4 centimetre thicknesses. Lift these thicknesses gently out of the cabinets being careful not to scrape the wet materials across the metal prongs. Take care to provide support underneath the documents as they are being moved. Place the records carefully into any vacant horizontal cabinet drawers or into flat storage boxes for freezing.

If these records are merely damp, then it may be possible to separate them using the Waters' method with polyester film (3 mil thickness) and web described in his manual (pp. 22-23). The records shall be removed carefully from the storage cabinets by separating the documents into 4 centimetre thicknesses at the polyester interleaving and moved into the air-drying room either in horizontal cabinet drawers, in large storage boxes, or

on flatbed trucks covered with plastic sheeting. The damp records shall then be separated, according to Waters' instructions, if necessary, and laid out on tables covered with plastic sheeting and layers of paper towelling or blank newsprint to absorb moisture. The towelling or newsprint shall be changed frequently to speed drying and to reduce the relative humidity in the drying room. If air-conditioning is not available, fans and dehumidifiers shall be provided.

d) Maps on Open Shelves

This material may suffer more from a fire/flood disaster than any other material. Documents on shelves are kept either rolled or horizontally in folders.

Documents kept horizontally in folders shall be carefully transferred into large flat storage boxes, one folder at a time. If boxes are not available, plywood sheets covered with plastic sheeting shall be used to carry the maps from the shelves onto flatbed trucks. The damp records shall then be separated, according to Waters' instructions, if necessary, and laid out on tables covered with plastic sheeting and layers of paper towelling or blank newsprint. The towelling or newsprint shall be changed freqently to speed drying and to reduce the relative humidity in the drying room. If air-conditioning is not available, fans and dehumidifiers shall be provided.

For documents kept rolled on shelves, see instructions (e) for rolled material.

e) Rolled Material

A large portion of the National Map Collection holdings is kept in rolled form: in cardboard tubes, wrapped in bundles and stored in stack tubes or on open shelves and sometimes on top of map cabinets. This material will suffer undoubtedly in a fire/flood situation. Recovery will be more difficult because of the variety of sizes of these documents and their nature; they include blue prints and plans drawn on linen or on fragile paper. If they are wet, the starch coated linen drawings may stick together and the inks may be washed out.

The maps and plans kept in cardboard tubes may be partially protected from water. If both the maps and the tubes are very wet, they shall be immediately frozen without trying to remove the maps from the tubes. If only the tubes are wet, then the maps shall be immediately removed from the tubes before the humidity reaches them. If the maps are only damp, they shall be removed from the tubes and dried as soon as possible; the fact that they are damp should facilitate the work of unrolling them. After being unrolled, they should be separated, according to Waters' instructions, if necessary, and laid out on tables covered with plastic sheeting and layers of paper towelling or blank newsprint. The towelling or newsprint shall be changed

frequently to speed drying and to reduce the relative humidity in the drying room. If air-conditioning is not available, fans and dehumidifiers shall be provided.

The maps rolled in bundles shall be assembled according to their degree of damage and, depending on their condition, sent for freezing or for hand-drying.

f) Atlases and Bound Documents

Atlases and bound documents are scattered in the various storage rooms and on different types of shelving. Some are in manuscript form and, although most are printed, they are hand-coloured with watercolours. Bound insurance plans should be noted as a peculiar group; on many sheets revisions slips are glued onto the old sheet.

The early atlases (pre-1850) are kept in the vault along with facsimile editions of early atlases. Most bound insurance plans are kept in wooden cases in room 468A and 457. (There are also some boundary atlases at Bentley.)

Bound volumes and atlases shall be wrapped in freezer paper, wax paper, or silicone paper to prevent their sticking together during the freezing process. Depending on their size, they shall be placed in plastic milk crates, bakers' bread trays or cardboard boxes for movement out of the affected stacks and into the freezers. They shall always be moved from the shelves to the freezers of the drying room in the horizontal position. The material shall be packed loosely enough to permit air to circulate; containers shall only be 75% full to permit faster freezing. Because of the weight of large atlases, only one shall be placed in each container.

If a wet atlas has expanded so that it cannot be removed from the shelf, then the shelf shall be dismantled in order to remove the atlas.

g) Documents in Pamphlet Boxes (Shelf Map)

Documents in pamphlet boxes consist mainly of sectional documents that have been backed and then folded.

If wet, these documents will probably be "jammed" in the box. They shall be wrapped, still in the containers, with freezer paper and moved out of the affected stacks into freezers.

If they are only damp, they shall be directed to the hand-drying area.

h) Globes

Although the collection of globes is small, it is extremely valuable. It is physically dispersed in room 468A and the vault.

Some have adequate protective covers, others are kept in the open.

They shall be carefully removed from the affected area by placing them in cardboard boxes or adequate containers, the boxes and containers being clearly identified. The damaged ones shall be sent as soon as possible to professional conservators.

NOTE: Staff will decide, in consultation with conservators, the order in which the globes shall be treated.

i) Aerial Photographs

The division has a collection of aerial photographs kept in the Bentley Building. This collection is unique since the location of the negatives is unknown. Salvaging of these documents shall be done according to the National Photography Collection Recovery Operations.

j) Microfilm

So far, the National Map Collection has only a limited number of "original microforms" meaning that the original documents have been disposed of and the microfilm copy kept as the only archival document. They are the MIC maps and some record groups received as microforms from government department. In addition, the National Map Collection has a portion of its documents on 105 mm microfilm. These consist of: 1) a master security copy kept in a foil envelope normally in a location different from the location of the original document; 2) a master reproduction copy kept in a paper envelope in room 452; and 3) a reference copy (diazo) kept in a plastic jacket in the reference room. As of 15 June 1981, there are approximately 50,000 fiches in each group. Because of the existence of the master security copy, it will be cheaper to reprint rather than to try to recover the duplicate films.

If it is necessary to recover water-damaged roll film, the reels shall be placed in plastic garbage cans or other easily portable containers full of clear, cold water. The films shall then be kept immersed and transported to the Central Microfilm Operations for reprocessing. Film strips from jackets can only be recovered if they are kept wet but reprocessed before the emulsion swells and adheres to the polyester jacket so firmly that they cannot be removed; in recovering them, the strips of film shall be removed from the mounts by film technicians, rewashed, and air-dried by being suspended from a line or placed in specially designed drying racks. Microfiches create a similar problem; they shall be kept immersed in clear, cold water, shipped at once to CMO, rewashed, and air-dried on lines or in specially designed drying racks. Note that diazo fiches may be washed off under cold tap water, dried with a lint-free cloth, and returned to circulation. Aperture cards shall also be kept immersed in clear, cold water and shipped to CMO for rewashing, air-drying, and remounting of each film chip.

k) Maps in Portfolio or Solander Boxes

There are not many documents kept in this type of storage but their value necessitates special attention; they include the Atlantic Neptune, the Murray map, Bouchette map, and OTTAWA insurance plans.

If both the contents and container are wet, they shall be immediately frozen. They shall be carried one at a time and placed in the freezer, one item per shelf.

If only the box is wet and not the contents, the documents shall be immediately removed from it. If the documents are only damp, they should shall be removed and sent to hand-drying area.

l) Divisional Records (Files, Catalogues, Finding Aids, Etc.)

NOTE that all these records shall be clearly marked on a floor plan with priorities for evacuation marked in colour.

Loose materials shall be wrapped very carefully in freezer paper in bundles not more than 5 centimetres thick. The paper shall be labelled in pencil with whatever identifying information is available. The bundles shall be placed in plastic milk crates, bakers' bread trays, or cardboard boxes with about 25% of the space left for air circulation, then put into the freezer.

If materials in filing cabinets are very wet, the excess water in the drawers shall be sponged out or removed carefully with a wet vacuum cleaner. If possible, the drawers shall be removed and placed directly into the freezer. If the drawers cannot be removed, then the records must be taken out in small bundles not more than 5 centimetres thick whenever possible; always try to gently separate the wet mass of paper between file folders, not inside the file itself. The bundles shall be wrapped carefully in freezer paper, labelled with pencil, placed in plastic milk crates, bakers' bread trays, or large cardboard boxes, then put into the freezer.

If these records are merely damp, then it may be possible to dry them manually in the air-drying room. Files shall be treated separately with great care taken not to mix their contents and to keep the pages in the original order. The pages shall be separated one at a time from the file, using Waters' method if necessary (manual pp. 22-23), then laid out on tables covered in plastic sheeting and layers of paper towelling or blank newsprint. The towelling or newsprint shall be changed frequently to speed drying and to reduce the relative humidity in the room.

Catalogue card drawers shall be removed with their contents, wrapped in freezer paper, and frozen if necessary.

m) Library Materials (books, periodicals)

The National Map Collection has an important reference book collection, with numerous items virtually irreplaceable. Most books are located in room 468A but some items are kept by the various sections.

The library materials in the divisional library shall be salvaged according to the guidelines set out in the Public Archives Library recovery operations. If these guidelines are not sufficiently clear, then the Director, Public Archives Library, shall be contacted for clarification. Public Archives Library staff shall provide advice and assistance as required.

(13) Manual Air-drying of Documents

The General Services representative on the DAT shall designate someone from Departmental Administration to contact the holders of nearby, secure areas that can be used for the air-drying of works not so severely water-damaged as to require freezing, and works still slightly damp after freeze-drying or vacuum-drying.

Particular care shall be taken to ensure the security of such an area. The Departmental Security Officer shall ensure that the perimeters of the drying areas are patrolled and secure.

If possible, this area shall be air-conditioned. If air-conditioning is not available, then an area with good ventilation assisted by fans and dehumidifiers shall suffice; fans and dehumidifiers shall operate day and night as long as records are being treated in the area. Temperatures shall be maintained at 21-22°C. and relative humidity at 50%. Frequent readings of both shall be taken and the findings recorded.

All excess furniture shall be removed from the drying rooms and as many tables as can conveniently be placed in the room without impeding movement shall be supplied. The tables shall be protected by plastic sheeting and covered with layers of paper towelling or blank newsprint. Running water and drains shall be provided in case works have to be washed (see Waters' manual, pp. 16-17). There shall be a secure area provided nearby for the stockpiling of the supplies needed in the manual drying procedures.

The work teams assigned to this area shall be given copies of the Waters manual and shall follow his instructions for the washing and air-drying of books and single sheet documents. Team members shall patrol constantly, changing the interleaving, changing the layers of towelling and newsprint, and carefully turning the drying works as required. In the case of bound materials, an Aqua-Boy or similar device shall be used to test the dampness of the spines, the last part of the volumes to dry.

(14) Bulk Drying of Works on Paper

The General Services representative on the DAT shall designate someone in Departmental Administration to contact the freeze-drying and vacuum-drying facilities. The frozen works shall be transported to the bulk-drying facilities in refrigerated trucks unless the chambers are so close by that no thawing will take place during shipment.

Care shall be taken when loading the trucks to ensure that the materials are still segregated according to physical format and probable acid content in order to prevent acid contamination in the drying chambers. Priority items such as divisional records for which there are no copies shall be bulk-dried first. The frozen items shall be placed in the chambers so as to permit air circulation. The bulk-drying must be monitored continuously by the technicians who operate the chambers and by trained conservators who are able to determine levels of dryness. Items may leave the chambers either too dry or too damp. In either case, further treatment will be needed; items which are too dry shall be placed in a secure reacclimatization storage area while those which are still damp shall be manually dried in the air-drying rooms following Waters' advice and the procedures outlined in step (11) above. Once these items have been completely dried, they shall also be placed in the secure reacclimatization area for several weeks where they can be monitored closely for the development of mould or mildew.

If possible, during the bulk-drying procedures, the items in the chamber shall be sterilized and a fungicidal buffer applied to either prevent or slow later mould development.

(15) Rehabilitation of the Stacks

Stack areas which have undergone serious water damage shall be repaired and sterilized before any works are returned to them. Shelving units shall be repaired or replaced if necessary. All storage areas shall be inspected carefully to ensure that there are no pockets of dampness. The whole stack area shall then be sterilized, if possible, by work crews trained in providing the level of cleanliness required in a hospital operating room; particular care shall be taken to ensure that the undersides of shelves, the sides, backs, and corners of shelves, and the hollow supporting structures are sterile and completely dry. No works shall be returned to the stacks until the shelves are completely dry and environmental controls have been reinstituted and operational for several days.

(16) Post-disaster Site Inspection

The stacks and collections affected by water damage shall be closely monitored for a year after the situation has returned to normal to ensure that mould and mildew do not develop. If evidence of mould or mildew is found, then the stack area shall be "fogged" with a fungicide and, if necessary, the infected works shall be fumigated.

APPENDIX A-5

DAT Members and Alternates

Division	Name	Function	Office No.	Home No.
National Map Collection	Gilles Langelier	conservation co-ordinator	995-1077	
	Hugo Stibbe	control archivist	995-1077	
	Edward Dahl	representative archivist	995-1077	
	Alternates			
	M. McCauley	conservation co-ordinator	995-1077	
	Dorothy Ahlgren	control archivist	995-1077	
	Louis Cardinal	representative archivist	995-1077	
	Resource Persons			
	Jan Pidek	conservator		
	Mike Thompson	conservator		
	Richard Damphouse	conservator		

Note that additional resource persons could be available from the Canadian Conservation Institute.

APPENDIX B-5

Emergency Facilities and Suppliers

This appendix will list the facilities and supplies needed in an emergency. Written agreements shall be made with the suppliers. The list will include those requirements of all divisions in the Archives Branch with recommended quantities determined after all recovery operations plans have been submitted.

Included, as an example, will be:

book trucks
flatbed trucks
drying space
refrigerated trucks
deep freeze facilities
vacuum and freeze-drying facilities
plastic milk crates
bakers' bread trays
plain paper towels
blank newsprint
chemicals such as thymol and disinfectants
plastic bags and freezer wrap
portable fans
dehumidifiers
Aqua-boy moisture meter or its equivalent
hygroscopes or sling hygrometers
walkie-talkies
portable generators
portable electric pumps
heavy-duty extension cords (three-prong, grounded, 50' cords)
hand or compressed air sprayers
protective masks, gloves, and clothing including rubber boots and mittens for freezer duty
large cardboard boxes

APPENDIX C-5

Stockpiled Items

These materials will be stockpiled at designated locations in or near the stacks. The lists will include the requirements of all divisions in the Archives Branch and will contain such items as are given in the sample below. Final selection of items and quantities will be made after all divisions have submitted their recovery operations plans.

rolls of plastic sheeting and scissors
plain paper towels, rolls of blank newsprint
mops and buckets
portable electric sump pump
heavy-duty, three-prong extension cords, 50' - at least six
thymol crystals and methyl alcohol
waterproof coats with hoods and rubber boots

IV. Post-disaster Assessment

(1) Upon completion of the recovery operation, an official post-mortem shall be held by the complete Disaster Preparedness Committee (DPC) to determine what went right as well as what went wrong. A written report shall be submitted by the DAT to Senior Management through the Director-General; this report shall be circulated to all the Division Directors in the Archives Branch.

(2) The Recovery Director shall designate a staff member who was involved in the disaster to produce a written report on the emergency and the recovery operation. This report shall be widely circulated throughout the Public Archives and shall be submitted for publication to journals relating to archives, libraries, conservation, fire prevention technology if applicable, and security and emergency planning.

(3) The DPC shall review the contingency plan and make any necessary revisions.

(4) The DPC shall review the emergency supplies and facilities sources. If any of these have been found wanting, then new sources shall be identified and new agreements made.

(5) Timely letters of appreciation shall be sent out over the Dominion Archivist's signature to everyone who gave assistance during and after the emergency. These letters shall go to all staff involved, to fire and police personnel, to suppliers of emergency facilities and resources, to technical experts, etc. A notice over the Dominion Archivist's signature shall be posted to express appreciation for the understanding and tolerance shown by our public during the difficult times of the actual emergency and the recovery operation.

MICROFICHE RECORDS OF CANADIAN TOPOGRAPHICAL MAPS:

PART II

L.M. Sebert
Formerly with the Topographical Survey of Canada

In his thought-provoking article (with the same title as this one) in the June 1984 *Bulletin*, Serge Sauer points out some of the apparent inconsistencies in the microfilm copies of the "history cards" of Canadian topographic maps. This continuation of the subject will attempt to explain why these inconsistencies occurred, and how the users of these records can work around them.

To begin with, it must be remembered that these history cards were compiled as in-house records, and they were not intended for use by people outside of Topographical Survey. For this reason, many self-evident items of information (for example, the scale of the sheet) were not written on the cards. Also, it must be remembered that the maps of Canada's National Topographic System (NTS) were at various times the work of four completely independent agencies, each with its own policy on such items as map content, series numbering, map scales and map dating. These agencies were: the Surveys and Mapping Branch (S and MB), the Army Survey Establishment (ASE), Geological Survey of Canada (GS) and British Columbia Surveys and Mapping (BC). Note that S and MB includes both Topographical Survey Division and Map Compilation and Reproduction Division, both of which had slightly different policies on record-keeping.

The most serious difficulties reported by Mr. Sauer have to do with series numbering and sheet dating, so let us consider these items first.

Map Series Numbering

Most of the difficulties in the NTS series numbering were caused by the change in scales from inch-mile units to

the nearest convenient natural scales (i.e. 1:63,360 to 1:50,000, etc.) This was done mainly between 1949 and 1953, although a few sheets lingered on in the old scales for many years. Today most people would agree that, when you change scale, a new series is started. That was in fact the policy adopted by ASE, which was producing annually about one-third of the NTS sheets. Each map enlarged photographically by ASE was published as "Edition 1." in the new series.

S and MB saw things differently. This agency wanted to emphasize the continuity between the 1:63,360 and 1:50,000 scales, and therefore considered both scales as one series. If the inch-mile sheet had gone through three editions, the new 1:50,000 sheet was published as Edition 4. There would therefore be no "Editions 1., 2., and 3." in the 50,000 scale.

Before being too critical of S and MB, it must be remembered that their clientele was dispersed across the country and could not be advised of the scale change as easily as the military units. It was hoped to avoid confusion among civilian map users by emphasizing that the new scale was a continuation of the old, and in fact a replacement of the old, and hence the simple advancement of the edition number.

Dating of Sheets

As Mr. Sauer says, "Correct dating of maps is of crucial importance for a time-series collection". But what is the date of a topographic map? Certainly for time-series users the correct date is the date on which the topographical information is current. This would lead one to the conclusion that the date of the photography should be used. But on many topographic maps there is more than one set of photography used and, on 1:250,000 sheets, the newest and oldest photographs used may differ in age by up to ten years. Even if one flight of photographs has been used, there still may be important additions made to the map during the field completion stage, which generally occurs during the year following the photogrammetric compilation.

From the point of view of Topographical Survey, the date of the map is the latest date at which the information on the manuscript is correct in all essential aspects. This date was written on the history card when the manuscript was passed to the Map Compilation and Reproduction Division for fair drafting and printing. These operations may take up to a year, or even more, which would give a printing date (or as it is called today, a copyright date) later than that shown on the history card.

It can happen, as Mr. Sauer points out, that the printing date can be earlier than the history card date. This could occur if the sheet had been called back to Topographical Survey for some last minute additions after the type plate had been set. Also this could happen if the map had been compiled from larger-scale sheets with an earlier copyright date. It must be remembered that the date of the map on the history card was for internal use and was the date on which the revision cycle "clock" started to run for that sheet. If the time-series users want to make use of it, they are welcome to it.

Variants of the Standard NTS Maps

The most common variants of NTS sheets are the BC 1:50,000 sheets printed without green and with a special cadasteral overprint. In the 1950s the Surveys and Mapping Branch, Department of Lands and Forests of British Columbia, offered to do the field survey, compilation and fair drawing of about six sheets a year if S and MB would print a special run of 800 sheets without the forest cover but with forest leases and other land use information. The offer was accepted, and ran for about 15 years.

Odd Scales

Before 1935 the Geological Survey did their own topographic mapping using their own specifications for map content. The GS road classification was different from that used by Topographical Survey and GSGS (the ASE of that period). At times GS published sheets at 1:62,500. All such sheets have been converted to 1:50,000, but of course in a time-series the old sheets live on.

Maps out of Alpha-numeric Order

The fact that a few history cards were not in their correct place at the time of microfilming is really not surprising. There are over 20,000 cards in the file, and quite a few are used daily. Every effort is made to see that they are returned to their proper place, but on rare occasions mistakes are made. The users of the microfiche should look around the gap to see if the card has been misplaced.

Some General Considerations

The history cards give much information that should be of interest to historians and time-series users, and these

people should be patient with the inconsistencies they may come across. The dates of photography used on the original compilation and all revisions must be of historic interest. The types of plotting instruments used will indicate the accuracies of the various editions. Finally, the history card will refer to the map docket in which a much enlarged history of the sheet will be found. If some irregularity -- such as those listed by Mr. Sauer -- is found and can't be worked out from other data on the microfiche, Topographical Survey, 615 Booth Street, Ottawa, Ontario K2C 2H8, can be contacted for the answer.

REPORT ON THE ACTIVITIES OF THE INTERNATIONAL FEDERATION OF LIBRARY ASSOCIATIONS AND INSTITUTIONS (IFLA), SECTION OF GEOGRAPHY AND MAP LIBRARIES, FOR THE PERIOD AUGUST 1984 TO MARCH 1985

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Nairobi Meeting

The Section convened two professional paper sessions, two meetings of the Standing Committee, and one *ad hoc* meeting concerning the Section's membership drive. In addition, members, guests, and accompanying persons participated in a half-day tour especially arranged for the Section.

At the Section's professional paper sessions held Tuesday, 21 August 1984, in the Kenya National Archives, the four invited speakers expanded on the programme theme "Geography and Map Library Information Systems and Services" with particular reference to the needs of Third World nations. The following presentations were made:

1. "A Survey of Philippine Map Collection and Map Development" by Rosalina M. de Vera, Chief Librarian of NEDA-UNDP/IBRD Regional Planning Project, Manila. This paper was read by Gary North.

2. Using colour slides and overhead projections, Dr. Allan Falconer gave a presentation on the objectives, projects, and achievements of the Regional Remote Sensing Facility, which is a division of the Regional Centre for Services in Surveying and Mapping, both headquartered in Nairobi.

3. "Cartographic Materials as a Resource for National and Regional Planning and Development" by Dr. E.H. van de Waal, State University, Utrecht, the Netherlands.

4. "Geography and Map Library Equipment and Space Management as a Basis for Information Service" by Hermann Gűnzel, head of the coordinating department of the university library system at the University of Marburg, Federal Republic of Germany.

On Wednesday, 22 August, Section members, guests, and accompanying persons were treated to a very interesting and informative tour, led by Dr. Allan Falconer, of the Regional Remote Sensing Facility. Participants were briefed by Facility staff members as they visited each of the organizational units of the centre: the training unit with class-rooms; materials unit with a library of books, technical reports and periodicals as well as a good basic map collection and an extensive browsing file of Landsat imagery; the image analysis and interpretation laboratory; and finally, the photographic laboratory.

The Section's Standing Committee met twice. On Sunday, 19 August, the SC discussed reports of progress made during the year by the various working groups, assessed the Section's current financial position, and reviewed the most recent developments concerning the map curatorial workshop proposed for the Philippines in 1986.

At the second SC meeting, held Thursday, 23 August, members debated and approved the Section's 1986-1991 Medium Term Programme, agreed to form a new working group to investigate the impact of cartographic information in micro and digital form on map libraries, collections, services, and storage policies, reviewed the status of the Section's membership drive, and discussed budget requirements for Fiscal Year 1986. The Section adopted "Toward Improving the Availability of Geographic and Cartographic Information" as the theme around which the Section's professional program will be developed for the 1985 meetings in Chicago.

On-going Activities during the Year

A draft of the Section's membership drive brochure was completed by G. North and distributed to the Section's chairman and secretary in early March for comments. The brochure is expected to be ready for mailing before the annual Chicago meeting in August.

The chairman and secretary prepared the 1986 Section budget and put together the section's program for the 51st IFLA Council and General Conference in Chicago as well as for the Section's Pre-Conference Seminar (see below).

The papers of Hermann Günzel and E. Hans van de Waal, given at the Nairobi professional meetings of the Section, were published in *INSPEL*, Vol. 18, No. 4 (1984). A detailed report of the Nairobi meetings of the Section appeared in the Special Libraries Association, Geography and Map Division *Bulletin* No. 138, Dec. 1984, pp. 12-15.

The IFLA-ICA interassociational working group's terms of reference were approved by the ICA Council in Perth, Australia. The official title of this working group in ICA is the ICA/IFLA Joint Working Group on Documentation in Cartography. The terms of reference appear in the *ICA Newsletter* of November 1984, (No. 4), p. 5. The *ICA Newsletter* has been reproduced in its entirety in the *Newsletter* of the Canadian Cartographic Association, Vol. 10, No. 4, December 1984.

Chicago 51st IFLA Council and General Conference

The "Final Announcement" and registration forms have already been sent out by the Organizing Committee. If you wish to receive these, please contact Robert P. Doyle, IFLA '85 Coordinator, 50 East Huron Street, Chicago, Illinois 60611, U.S.A. (Telephone: (312) 944-6780). The registration fee for the Conference is $175.00 (US).

The Section of Geography and Map Libraries has organized an interesting professional program to be conducted in two consecutive sessions, from 8:00-9:15 and from 9:30-11:00 on Tuesday, 20 August 1985. From 13:00-15:30 on the same day, the Section will have a general discussion session dealing with the Section's activities and the direction the Section is planning to take in the next five years (in accordance with the Medium Term Programme 1986-1991). The results of the Pre-Conference Seminar will also be on the agenda. This session is announced in the official IFLA program as a "Poster Session". The Poster Session did not, however, materialize. The discussion session has been substituted in the hope and expectation that many map librarians and other persons interested in the activities of the Section will attend and participate in the discussions.

A Pre-Conference Seminar has been organized and sponsored by the Section. It will take place on Friday, 16 August 1985, in the Palmer House Hotel in Chicago. The topic of this seminar is "Non-traditional Access to Bibliographic Records for Cartographic Materials". It will focus on non-traditional (in the sense of non-conventional) methods of accessing cartobibliographic records. Invited speakers and panelists will discuss existing machine search techniques and capabilities, and will examine potential non-textual alternatives for accessing both geographic coverage and

thematic content. Participants will also explore the feasibility of developing a search methodology incorporating internationally accepted standardized data elements. The seminar will be open to observers.

In addition to these activities, the Section will have its own all-day tour, organized and sponsored by a group of enthusiastic and able local map librarians and their institutions. The tour is scheduled for the 21st of August and promises to become one of the highlights of the Section's activities in Chicago. It will take delegates to visits of the American Geographical Society's collections (both books and maps) at the University of Wisconsin in Milwaukee and to the cartographic laboratories of the University of Wisconsin at Madison.

REVIEWS

Kavanagh, Barry F., and Bird, S.J. Glenn. *Surveying: Principles and Applications*. Reston, VA: Reston Publishing Co., 1984. xi, 900 p., bibliog. $32.50, text ed. (ISBN 0-8359-7405-7).

This is the latest in what is a lamentably short list of textbooks in surveying by Canadian authors. The first was probably Dr. Deville's book on "Photographic Surveying," published in 1895 in Ottawa but perhaps it is a measure of the times that this text by two instructors from Seneca College is actually printed and published in the United States.

It is, however, refreshing to see a text with Canadian examples and descriptions. Unfortunately, the authors show considerable bias towards Ontario examples; and nowhere is this more evident than in Chapter 13 on public land surveys, where the techniques used in Quebec and the Maritimes are virtually excluded.

As a text this is a well presented book, with all the almost mandatory chapters on levelling, transits, and EDM. Adjustments by least squares are to be found in appendix form, leading us to conclude that the intended market for this book is as an introductory text, and not one for advanced study at university. Junior level courses and those in technical colleges would appear to benefit the most.

The second part of the book, Chapters 10 to 16, come under the heading of applications. The subjects treated here range from curves and control surveys, through legal and hydrographic surveys, to photogrammetry and computerized surveying data systems.

Most chapters have worked examples and problems at the end. The diagrammatical linework is good, the illustrations are clear, and the text is clear and pleasing to read.

Of direct interest to mapmakers and cartographers is the fact that there is little in this text about mapping and the cartographic process. A passing reference is made in Chapter 9, entitled "Survey Drafting and Procedures," to map scales and symbolization, but the compilation and printing process is unaddressed.

In summary, then, this text is a standard surveying text. It is comprehensive, well presented, and certainly worth considering for introductory surveying courses. Certainly, a copy should be in each technical library.

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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).

This manual is an invaluable reference tool for virtually all aspects of remote sensing. As a manual it fulfills the requirements for the principles of, and directions needed, for the understanding and practice of the science and art of remote sensing. During the almost five years required to produce the second edition, advances in remote sensing systems development, digital image processing, and geographic information systems were ongoing. It is difficult to be current in the rapidly changing world of remote sensing, yet the authors and editors have done a tremendous job, as many of the references are recent.

The *Manual* is divided into two volumes, separating theory, instruments, and technique from interpretation and application. In the first volume, a very thorough treatment is given to the principles of remote sensing, including the complexities of the atmosphere, different sensor types, image acquisition problems, and image analysis techniques. Remote sensing includes the use of aerial photography, radar and microwave sensors, and satellite sensors. Both manual and

computer-assisted image analysis techniques are explored and the subtleties of image correction, enhancement, interpretation, and classification are highlighted. In Chapter 24, for example, a discussion comparing image analysis techniques is presented in a comprehensive and descriptive manner, and the application of those techniques is revealed in the appropriate chapters in Volume Two.

Volume Two covers interpretation and applications for the following subject areas: archaeology, anthropology, and cultural resources management; weather and climate; marine environment; water resources; urban/surburban land use; geology; engineering; agriculture; forest resources; rangeland; and space. The second volume does not stand alone. Much of the information found in Volume One is necessary for an analyst to achieve an understanding of the complexities involved in applying and interpreting remotely sensed data.

The second edition is largely a new work, not simply a revised first edition. New chapters on remote sensing software, digital hardware, and orbital mechanics enhance the extensively revised chapters on various orbital platforms, data processing, pattern classification, and geographic information systems. Archaeology and anthropology are now treated in a separate chapter. But the first edition is not entirely superseded for, in at least two instances (p. 105; p. 2326), this new work refers to material previously published there.

Although the focus of each chapter is specific, the integration of various data sources is shown. It is pointed out that maps and aerial photographs are useful to Landsat image interpretation. And it is shown that image analysis benefits from combining radar and Landsat multispectral scanner data.

As a depository of remotely sensed data, a map library's use of this *Manual*, may largely be for its comprehensive nature, addressing all aspects of remote sensing. Various map projections are discussed, and a chapter on photographic systems is included. Beyond that, the *Manual* is an excellent introduction to the remote sensing literature, although, as always in a work of this nature, a number of the references refer to reports and government publications that suffer from limited distribution, making them difficult to acquire.

The *Manual* suffers marginally from typographical errors that have crept in, and, at least in one instance, a couple of nonsensical sentences occur (p. 1042). Each chapter ends with a large number of references. Some of these references have been cited inconsistently (e.g., the Proceedings of the International Symposium on Remote Sensing of Environment) or

incompletely (e.g., A.M. Hay, p. 985). The colour plates are extensive and excellently reproduced, adding greatly to the value of this work. However, some errors occur in the colour figures as well, where at least one set is duplicated (Fig. 30-34 = Fig. 31-78), and in one instance a couple of described plates are missing (Fig. 34-45a, b). Furthermore, there are only twenty-three and a half pages of index compiled for the 2450 pages of text. One page of index per 100 pages of text is inadequate; it should be much more extensive, as an index is an integral part of a manual.

In summary, the second edition of the *Manual of Remote Sensing* is a substantial piece of excellent work. The many authors and editors are to be commended for the successful completion of such a mammoth undertaking. The few errors and omissions that are noted do not substantially harm the high quality of the work. It should be included in any library dealing with aerial photography and other more exotic forms of remote sensing, as well as those involved with geographic information systems.

Tim Toth and Bob Batchelder
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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).

This is a remarkably detailed study of the history and present status of the topographic mapping of the mainland countries of North and South America, Australia, New Zealand and Greenland. The book opens with a review of the various definitions of topographic mapping, a description of the common methods of relief depiction, and a discussion of the typical methods that have been used in topographic mapping from the fifteenth century to the present. This introduction sets the stage for a country by country exposition of the progress (or lack of same) of each nation's topographic mapping.

For each country the author has attempted to trace the history of its topographic work from the earliest efforts (usually by a small military unit) to the achievements of its present government mapping agency (still military in most

Latin American countries). Ms. Larsgaard has read widely in the existing literature on the subject. In fact, her bibliography runs to sixty-eight pages and includes most, if not all, the relevant texts and journals in English, and many in Spanish.

The information presented in this text is the dry bones of mapping statistics. However, by combining certain facts, dates, and figures, some fascinating conclusions rise from the pages. For example, one of the proud boasts of topographical surveyors is that their maps are essential for railway route planning. This text shows clearly that all the major railways of the Americas were built and operating long before the topographic maps were drawn.

This text has resolved some conundrums in Canadian mapping history that I have wondered about. Why, for instance, did James White choose the strangely metric (for 1903) scales of 1:250,000 and 1:500,000 when he launched his Chief Geographers Series? The probable answer is on page 97, in the statement that in 1902 the US Geological Survey initiated a program for the mapping of Alaska using the same scales. White must have been influenced by the US initiative in mapping frontier territory. It also appears that at least on one occasion the US followed Canada's lead. On page 95 we read that in 1892 the US decided to map mountainous regions at 1:40,000. This was just six years after Deville had started his mountain mapping program at the same scale, and no doubt news of its success had reached Washington.

In compiling figures on the present status of a country's mapping, one is forced in the end to rely on data provided by the country concerned. This has its hazards, because (as anyone who has had to use United Nations statistics well knows) some nations tend to exaggerate their achievements. You can call this "native exuberance" if you want, but the result leads to cloudy progress statements and misleading information on map availability. I have personally come to the conclusion that any nation that does not publish periodic indexes showing the maps they have for sale to the public has something to hide. Either their topographic maps are not available to the public (as they are not, in many Latin American countries) or they do not want to disclose the limited extent, low quality, or lack of up-to-dateness of their mapping. Ms. Larsgaard of course knows all this, and has struggled "manfully" with the gaps in her data on present status. She has done remarkably well in searching out facts and figures, but I wish she had published a short appendix listing the names (and mailing addresses) of those countries that offer to the public reasonably up-to-date catalogues or index sheets of their mapping.

All map libraries need this text. This must be evident from the foregoing description, but it is best to say it.

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Grim, Ronald E. *Historical Geography of the United States: A Guide to Information Sources.* Detroit: Gale Research Co., 1982. xx, 291 p. Annotations; author, title, and subject indexes. Geography and Travel Information Guide Series, Vol. 5, part of the Gale Information Guide Library.) $44.00. (ISBN 0-8103-1471-1; LC 82-15674).

This volume is an annotated bibliographic guide to the historical geography of the United States. Spatial coverage is limited almost exclusively to the United States. Temporal coverage is from the beginning of the sixteenth century to the early twentieth century, a time span selected because it "represents the Europeanization of the American landscape -- its exploration, settlement, and transformation through a variety of economic and cultural processes" (p. xiii).

The sources presented in this book cover a wide range of subject matter and are of many different kinds. To present these diverse materials in a more or less systematic fashion Ronald E. Grim has arranged his guide in three parts: "Cartographic Sources," "Archival and Other Historical Sources," and "Selected Literature in Historical Geography."

The first part, "Cartographic Sources," is probably of the most value to map librarians and represents about one-quarter of the volume. It includes guides to map repositories, histories of cartography, historical atlases, city maps and plans, and a number of secondary sources of special value to those interested in cartographic sources.

The second part, "Archival and Other Historical Sources," also represents about one-quarter of the volume. As Grim admits, the term "archival" is used loosely, and the section embraces materials as different as bibliographies of travel accounts, studies of artists, and histories of architecture. Grim's own attempt to define what he means by "archival" is bafflingly broad. He asserts that in using the term:

"I am not only referring to the official written records of a government or institution, but also to other historical manuscripts and published material, as well as to other graphic sources. I have not attempted to list guides and descriptions for all the potential sources, only those that are most frequently used by historical geographers." (p. xv)

In a section on guides to archival sources one is entitled to expect that guides to manuscript collections would occupy a prominent place, but few such guides are listed here.

The third section, "Selected Literature in Historical Geography," is the most comprehensive and accounts for about one-half of the whole volume. It is explicitly designed to up-date and complement Douglas R. McMannis' compilation, *Historical Geography of the United States: A Bibliography* (Ypsilanti, Mich., 1965). Although some works by historians are included, Grim does not draw as heavily on studies by historians as did McMannis.

The provision of three indexes (amounting to about fifty pages) enhances the value of the guide. The annotations are informative and succinct. The price of the volume is high, but it will be a useful addition to the reference collection in most map libraries.

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Rand McNally, *Atlas of the United States*. Chicago: Rand McNally and Company, 1983. 192 p. US $40.00 (ISBN 528-83099-6).

One has come to expect a superior product from the map-producing firm of Rand McNally, and this atlas is no exception. Covering the people, land and economy of the USA, the material begins with a discussion of the place of the country in the world community including a global map showing the major political alliances. This is followed by an overview of North America with maps of population, landforms, energy, and water resources, all matters of vital importance to Canada and Mexico, as well as their giant neighbour. Then come maps of the regions of the United States, although these might more properly have been described as sections as they follow state boundaries. For the purposes of this work five

are identified -- Pacific, Mountain and Southwestern, Midwest, Southeast, and Northeast.

The remainder, and the bulk of the volume (103 of the 127 map pages), is taken up with the individual states. Each is allotted a double page. The left half provides a "reference map" of the state itself which shows roads, railways, and populated places against a brownish background of shaded relief. In the margins of each map there is an index of the major cities and towns. The right half includes a "fact block" (giving data on such topics as population, area, ethnic groups, and climate), special maps, and photographs all interlaced with explanatory text.

These state maps all use the Lambert conformal conic projection, but the scale obviously has to vary as the same amount of space is available for each state. This principle of devoting exactly the same amount of space to each major political unit regardless of size or importance has its obvious disadvantages and idiosyncracies. It means for example, that the Texas map is on a scale of 1:4,118,000 while the Rhode Island map is on a scale of 1:304,000, and that the most detailed map of the eastern edge of Pennsylvania is on the map of New Jersey (on a scale of 1:849,000), whereas the same area on the Pennsylvania map is on the smaller scale of 1:1,593,000. There is a detailed Map Index embracing all of the places on all of the maps, which occupies the last 60 pages of the book. Had the atlas stopped at these maps and the index, it would simply have been a gazetteer atlas, useful in its way, especially for the general reader.

But, it is the right hand page for each state which adds the special dimension to the work. Each of these pages include a land use map and a bar graph showing employment and value of production for each of seven major economic sectors. The special maps and diagrams deal with a major feature which is important in defining the character or "personality" of the state. Thus, for Arizona there is a map of archaeological regions and sites and Indian reservations; for Maryland a large scale map of transportation in the Washington -- Baltimore corridor; for Wisconsin a map showing the distribution of population by ethnic origin; and for Vermont a map showing the location of art centres. In addition, a superb colour photograph provides visual aspects of a special feature of each state. These pages will have great appeal for the geographer, as will the earlier one dealing with the five sections, and the three pages toward the end of the book which conveniently summarize in tabular form many facts about the people, the land and the economy, state by state with totals for the USA as a whole.

This is a work which departs from the classical definition of an atlas as simply a collection of maps. But, it does so with a minimum of text and pictures, and the use of these materials is so skillfully interwoven with the geography of the area that the departure is amply justified. Thus, the whole work will be invaluable to those teaching and learning about the geography of the USA, especially in view of the paucity of textbooks on the subject.

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Tyacke, Sarah, editor. *English Map-Making 1500-1650; Historical Essays*. London: The British Library, 1983. 125 p., index, maps. £20.00. (ISBN 0-7123-0010-4)

The eight essays in this volume, originally presented at the British Library Seminar held in London in March 1981, represent some of the contemporary research into the history of map-making for the period 1500-1650. Three interrelated themes are considered here: the meaning and function of maps in that period; the developments in survey methods and in drawing maps; and the emergence of surveyors who began to draw maps as part of their normal duties.

J.B. Harley addresses the first of these themes with a paper on "Meaning and Ambiguity in Tudor Cartography," perhaps the most substantive of the papers both in terms of length and content. Victor Morgan examines references to globes and maps in the literature of the same era and is thereby able to identify changes that reflect growing familiarity with and use of these fundamental geographic tools.

The second theme is represented by Marcus Merriman's paper on Italian military engineers in Britain in the 1540's, which illustrates in particular the ways in which maps were drawn to precise scale in planning new fortifications. G.L.E. Turner's general survey of London instrument makers in the sixteenth century, and John Roche's discussion of the different types of cross-staff in use during the period, also fall within this thematic category. A fourth paper in the group is William Ravenhill's interesting argument suggesting

that Christopher Saxton probably based his maps on a method of triangulation, using the available system of warning beacons as the instrument stations.

In the third category Peter Eden provides a detailed account of the lives and activities of three Elizabethan estate surveyors, and John Schofield discusses the property plans made by Ralph Treswell in 1612-1613 for Christ's Hospital and the Clothworkers company.

The essays presented are by experts in the field and reflect rather specialized interests. The authors' range of backgrounds allows the cross-disciplinary approach that is both necessary and appropriate to the study of the history of cartography. Yet at the same time this specialization and diversity serves to emphasise the disparate and even fragmented nature of the volume. Sarah Tyacke's introduction doesn't quite pull it all together.

My first reaction to the book was that here was a extremely handsome and well-designed volume. Dust-jacket, binding, paper, type-style are visually appealing, but closer examination reveals some disappointing, if not annoying features. In particular, the single, wide column of text and the sense of wasted space resulting from the large blank inner margins could have been avoided by use of double columns of text. Many of the photographic illustrations, particularly the manuscript maps, might well have benefited from colour reproduction and others, in black and white, from less contrast. More annoying, however, was the decision to group illustrations at a few points in the text rather than integrating them with their relevant papers, because they then do not illustrate the text as they ought. This fragmentation, an occupational hazard of a collection of essays is not offset by the introductory essay, the themes explored in the various essays, or by the format and layout. In short, the sum of the parts does not make a very satisfactory whole.

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Bond, Barbara A. *A Directory of U.K. Map Collections.* London: The British Cartographic Society, 1983. 28 p. (Map

Curator's Group Publication No. 1). £1.00 plus postage and packing. (ISBN 0-904482-06-7; ISSN 0265-2315).

This short booklet marks the first attempt by British map curators to follow in the footsteps of ACML, SLA and the National Library of Australia in producing a national directory of map collections.

The preface of the book emphasizes its two-fold purpose -- "to serve as a simple reference source on the many map collections in this country by providing information on where they are" and "to encourage closer contacts between map curators perhaps with a view to arranging map disposal/exchange programmes for the benefit of the mapping community as a whole." The preliminary nature of this first edition is emphasised, as is the hope for fuller treatment some time in the future.

The booklet, in 8 1/2" x 5 3/4" format, is neatly and competently produced in reduced typescript. The headings and entries are clear and the work aligned in two column format. The compiler, Barbara Bond, is to be congratulated on a well produced work.

And the information provided? The first objective indicates how limited an objective was deemed possible and the information provided is indeed spare. The entries are arranged alphabetically by library/area name. In each case the name of the curator, if known, the address and telephone number are given. For approximately two thirds of the entries a brief description of the specialization of the collection has been included. The entries seem to have been compiled largely from the knowledge of a few individuals and without the benefit of a formal questionnaire. There is no alphabetical index to curators -- one of the most useful aspects of the Canadian directory.

One must conclude that the compiler faced a somewhat difficult task and that the very listing of the collections is, in itself, an achievement. But knowing the quality of the treasures that abound in many of these collections one is left feeling more than a little frustrated at British diffidence. If the second objective of the booklet is to be achieved it is hoped that British map curators will be encouraged by the experience of using this preliminary edition and respond positively to the suggestions for a full questionnaire circulated as an insert with the book. We can reassure them that our experience in Canada has indicated that a more detailed account of their collections, facilities and services -- including a straight -- forward statement of exclusions and limitations -- would indeed be valuable in their daily work.

I hope that Canadian map librarians will purchase the book. For the names and addresses alone it is worth the small cost. The book is available at a cost of £1.00 plus postage and packing from: Mr. A.G. Williams, 39 North Street, Winterborne Stickland, Blandford, Dorset. DT11 ONJ. U.K.

Barbara Farrell
Map Library
Carleton University

Grand Atlas du Canada et du Monde. Préparé sous la direction de Harold Fullard et de B.M. Willet avec la collaboration de Maurice Saint-Yves. 2è éd. Boucherville, Quebec: Les Editions françaises, 1983; London: George Philip, 1983. 48, 136 p. of maps, 98 p., illus., col. maps, index. $32.95. (Les Editions francaises Inc., 1411 rue Ampère, Boucherville, Québec, J4B 5B0.)

Le *Grand atlas du Canada et du Monde* comprend 136 pages de cartes précedées de 48 pages consacrées à des thèmes de la géographie mondiale. Sur les 136 pages de cartes, 46 sont consacrées a l'ensemble canadien, 15 aux Etats-Unis et 10 à l'Amèrique latine.

L'atlas comporte un index de 35 000 entrées, une liste de pays avec leur superficie et leur population, une liste des principales agglomérations du monde, et enfin, une liste de termes geographiques en diverses langues: on y apprend, par exemple, que "ain" signifie "source" en arabe, que "gobi" signifie "désert" en mongol, et que "ness" signifie "promontoire, cap", en gaélique.

L'atlas a été imprime par George Philip, une firme reconnue de Londres, sur du papier de qualité; il est bien relié et de format pratique.

Commentaires

Le *Grand atlas du Canada et du Monde*, version 1983, nous est présénte comme une "deuxième" édition. En réalité, il s'agit bien du même ouvrage publié en 1979 par les Editions françaises, qui s'identifiait alors sous le nom d'Editions Franson. On a bien changé quelques photographies de villes canadiennes, mais à y regarder de plus près, on a le

sentiment que pour la deuxième édition, on a simplement substitué aux excellentes photos de la première édition, les photographies qui n'avaient pas été retenues à ce moment-là. Il ne semble pas y avoir eu d'autres modifications, ni dans la cartographie, ni dans la section thématique.

Pourtant, depuis la publication, en 1979, de la première édition, deux autres atlas du Canada ont été publiés, et il s'agit de deux atlas de grande valeur qui ont été publiés simultanément en français et en anglais. D'abord, en 1980, il y a eu la publication de *Canada Atlas toponymique*, publié conjointement par Guérin et Energie, Mines et Ressources Canada; cet excellent atlas a d'ailleurs été recensé, dans sa version anglaise, par Geoffrey Matthews (Cf. *Bulletin* de l'ACC,, no 39, juin 1981, p. 53). Ensuite, en 1981, c'est Sélection du Reader's Digest qui publiait son *Atlas du Canada*; ce dernier atlas comporte une section thématique (54 pages) ainsi qu'une section de Renseignements généraux (17 pages) qui sont vraiment exceptionnels. Contrairement à l'atlas des Editions françaises, où l'on se demande si quelques planches de la section thématique ne datent pas de quelques décennies déjà, l'atlas de Sélection comporte de nombreuses planches originales et adaptées au contexte canadien.

Appreciation

Les deux atlas mentionnés ci-haut, celui de Guérin et celui de Sélection du Reader's Digest, ne sont pas des atlas du monde, mais uniquement des atlas du Canada; c'est pourquoi ils ne font pas vraiment concurrence au *Grand atlas du Canada et du Monde* publié par les Editions françaises. Etant donné cependant la qualité exceptionnelle de ces deux premiers atlas, ceux qui désirent acheter un bon atlas du Canada devront choisir entre l'un d'eux.

Le *Grand atlas du Canada et du Monde* n'en demeure pas moins, en tant qu'atlas du monde publié en français, un bon atlas de qualité; on regrette que le but visé par la publication d'une "deuxième" édition n'ait pas été de rafraîchir la "première"; pourtant, c'est ce que la concurrence dictera dorénavant.

Pierre Lépine
Service des Collections spéciales
Bibliothèque nationale du Québec

RECENT ACQUISITIONS

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

Contributors:

CU -- Carleton University Map Library
GSC -- Geological Survey of Canada Map Library
MU -- Memorial University Map Library
OOU -- University of Ottawa Map Library
UA -- University of Alberta Map Collection
UBC -- University of British Columbia Map Library
UT -- University of Toronto Map Library

MAPS

NORTH AMERICA -- Maps

GSC OOU Quaternary geologic map of the Lake Suprior 4° x 6° quadrangle, United States and Canada. - Scale / 1:1,000,000 - Reston, Va. : United States Geological Survey, 1984.
(Miscellaneous Investigations Series ; I- 1420).

GSC OOU Decade of North American geology: geologic time scale / Geological Society of America. - Boulder : The Geological Society of America, Inc., 1984.
(Map and Chart Series ; MC-50).

GSC Recent plate motions = Mouvements récents des plaques / Canada. Earth Physics Branch. - Scale 1:2,000,000. - [Ottawa : Earth Physics Branch, 1983.]
(Juan de Fuca Plate Map ; JFP-9 / Open File 83-6).

CANADA

OOU Carte climatologique du Saint-Laurent (fleuve et golfe) / Gérard Vigenat. - Echelle 1:1,000,000. - Ottawa : Service de l'environnement atmosphérque, 1984.
Cing cartes et un rapport.
$8.00

UT Major Canadian process plants. - Scale [ca. 1:6,400,000]. - Calgary : Stearns Catalytic Ltd., 1984.
Supplement to *Oilweek*, April 16, 1984.

UA Oil and gas frontier exploration areas of Canada. - 1985 ed. - Scale varies - Calgary : Bank of Montreal, Oil and Gas Dept., 1984.

OOU Structural map of the Appalachian Region in Canada / J. Duncan Keppie. - Scale 1:2,000,000. - St. John's : Memorial University of Newfoundland, 1982.
(Memorial University of Newfoundland Map N. 4).
$10.00

Atlantic Provinces

UBC Northwest Atlantic Fisheries Organization Convention Area. - No scale given. - Dartmouth : The Northwest Atlantic Fisheries Organization, 1984.

Western Canada

UBC Explore Canada's Yellowhead, Canada's new interprovincial highway. - Scale 1:2,840,000. - Edmonton : Yellowhead Highway Association, 1983.

UA Oil and gas activities in Western Canada. - 1985 ed. - Scale 1:3,000,000. - Calgary : Bank of Montreal, Oil and Gas Dept., 1984.

UT Provinces des Prairies. - Ed. spéciale. - Scale 1:2,000,000 ; Lambert conformal conic proj. (W122°-W89°/N61°-N49°). -Ottawa : Canada Surveys and Mapping Branch, 1982.

Alberta

UA Alberta electric system, January 1984. - Scale 1:1,500,000 and 1:250,000. - Calgary : Energy Resources Conservation Board, 1984.
Two sheets.

UA [Alberta] irrigation districts. - Scale ca. 1:1,150,000. [Edmonton] : Alberta Agriculture, 1983.

UA [Alberta] ranger district map, forest fire control zones. - Scale 1:1,000,000. Edmonton : Alberta Energy and Natural Resources, 1984.

GSC Designated oil and gas fields and oil sand deposits,
UA main pipelines, refineries and gas processing plants as at 31 December 1983, Alberta, Canada. - Scale ca. 1:1,320,000. - Calgary : Energy Resources Conservation Board, 1984.

UA Hydrogeological map, Peace River, Alberta. - Scale 1:250,000. - [Edmonton] : Alberta Research Council, 1983.

UA Land irrigability potential in Southern Alberta. - Scale 1:500,000. - [Edmonton] : Alberta Agriculture, Resource Planning Division, Land Classification Branch, 1983.

British Columbia

UBC City of Vancouver, British Columbia, 1981 Census of Canada. - Scale 1:15,000. - Vancouver : City of Vancouver Planning Dept., 1983.

UBC Glacier National Park. -Scale 1:190,080. - Ottawa : Ministry of the Environment, 1984.

UT Greater Vancouver, street guide. - Scale [1:45,000]. - Coquitlam : Canadian Cartographics Ltd., 1983.

UBC Producing mines and significant mineral and coal deposits of British Columbia. - Scale 1:2,000,000. - Victoria : Ministry of Energy, Mines and Resources, Mineral Resources Division, 1983.

UBC Productive gold placer creeks and rivers of British Columbia. - Scale 1:1,800,000. - Vancouver : Geo-Drafting Sources, [1984].

UBC Zoning district plan, City of Vancouver, B.C. - Scale ca. 1:22,500. - Vancouver : City of Vancouver Planning Dept., 1983.

New Brunswick

UBC Kouchibouguac National Park. - Scale 1:25,000. - Ottawa : Ministry of the Environment, 1983.

GSC New Brunswick: [index showing geological zones]. - Scale ca. 1:1,000,000. - Fredericton : New Brunswick, Geological Surveys Branch, 1984.
(New Brunswick. Geological Surveys Branch. Map Plates ; Plate 84-21).

UA New Brunswick, Canada, travel map, 1984-85. - Scale ca. 1:1,600,000. - Fredericton : Tourism New Brunswick, 1984.

Newfoundland

OOU Geology of the Central Mineral Belt (central part). - Scale 1:100,000. - St. John's : Department of Mines and Energy, Government of Newfoundland and Labrador, 1982.
(Maps ; 82-3, 82-4).
$16.00

OOU Geology of the South-Central Labrador Trough / R.J. Wardle. - Scale 1:100,000. - St. John's : Department of Mines and Energy, Government of Newfoundland and Labrador, 1982.
(Maps ; 82-5, 82-6).
$20.00

MU Gravity map of the Avalon Peninsula. - Scale 1:250,000. - Ottawa : Dept. of Energy, Mines and Resouces, 1983.
(Open File ; 83-2).
$10.00

Northwest Territories

GSC Proposed mineral exploration activity, Keewatin, 1984. Scale ca. 1:1,000,000. - Ottawa : Dept. of Indian and Northern Affairs, 1984.
(Economic Geology Series ; EGS-1984-1).

Ontario

CU Atikokan administrative area designation. - Scale
UT 1:260,000. - [Toronto] : Ontario Ministry of Natural Resources, 1983. Accompanied by text: Atikokan District: land use guidelines.

CU [Bicentennial map of Ontario]= 1784 Canada, including
OOU that part later named Ontario exhibiting the adjacent
UA countries and Indian Nations / Ontario Ministry of Natural Resources. - Scale 1:3,100,000. - Toronto : Ministry of Natural Resources, 1984.
$3.00

UT Geographic nomenclature of Ontario / Ontario Basic Mapping Section, Surveys and Mapping Branch, Ministry of Natural Resources. - Scale 1:50,000 ; Transverse Mercator proj. - Toronto : Ontario Basic Mapping Section, 1983-.
Ozalid prints; indexed by coordinates; NTS sheet numbering.

GSC Interdisciplinary research for an environmental component (acid rain) in regional geochemical surveys (Wawa area), Algoma District. - [Toronto] : Ontario Geological Survey, 1984.
(Geophysical/geochemical series ; 80713).

CU Niagara Escarpment Commission final proposed plan. -
UT Scale 1:50,000 and 1:250,000. - Georgetown, Ont. : Niagara Escarpment Commission, 1983. Eleven maps.
Accompanied by text: Final proposed plan for the Niagara Escarpment.

UT Postal code map of the Toronto area / Mapart. - Scale 1:100,000. - Scarborough, Ont. : ArtScan, 1984.

OOU Ontario intercity guide to public transportation 1983. - Downsview : Ministry of Transportation and Communication, 1983.
Schematic map not to scale.

Québec

OOU Carte des gîtes minéraux du Québec: région de la Côte Nord / Luben Avramtchev. - Echelle 1:250,000. - Québec : Ministère de l'énergie et des ressources, Direction générale de l'exploration géologique et minérale, Direction de l'exploration minérale, Service de la géoinformation, 1983.
(Québec ; DV 83-14).
$45.41

MU Evaluation du potentiel minéral des cantons de Power et de Joncas-Gaspésie. - Echelle 1:20,000. - Québec : Centre de diffusion de la géoinformation, 1983.
(DP 83-36).
$3.00

OOU [Géologie des formations en surface de] la mer de Goldthwait sur la côte nord du Saint-Laurent / J.M.M. Dubois et al. - Echelle 1:250,000. - Ottawa : Commission géologique du Canada, 1984.
(Open File ; 1045).
Cinq cartes.
$10.00

OOU Québec 1534-1984: accès et transports. - Echelle 1:25,000. - Québec : Ministère des transports du Québec et Communauté urbaine de Québec, 1984.

MU Ministère de l'énergie et des ressources métallogénie du dôme de Limieux-Gaspésie. - Echelle 1:20,000. - Québec : Centre de diffusion de la géoinformation, 1984.
(DP 83-28).
$2.50

MU Région du Bas Saguenay. - Echelle 1:50,000. - Québec : Centre de diffusion de la géoinformation, 1983.
(DP 83-16).
$5.00

MU Secteur est de L'Archipel de Mingan Golfe du Saint-Laurent. - Québec : Centre de diffusion de la géoinformation, 1983.
(DP 83-23).
$2.00

Saskatchewan

UA Southern Saskatchewan urban and rural municipalities. - Scale 1:1,000,000. - Regina : Saskatchewan Urban Affairs, 1982.
Ozalid print.

Yukon Territory

OOU Terrain inventory, Sheldon Lake, Yukon Territory / L.E. Jackson, S.E. Morison. - Scale 1:250,000. - Ottawa : Energy, Mines and Resources, 1984.
(Open File ; 1033).
$5.00

UNITED STATES

UT America's federal lands / produced by the Cartographic Divison, National Geographic Society ; map compilation: Timothy J. Carter [et al.]. - Scale 1:5,889,000. - Washington : National Geographic Society, 1982.
Supplement to the *National Geographic*, September 1982.

GSC Climate appraisal maps of the rehabilitation potential of strippable coal lands in the Williston Basin, Montana, North Dakota, and South Dakota. - Scale 1:1,000,000. - Reston, Va. : United States Geological

Survey, 1984.
(Miscellaneous Field Studies Maps ; MF-1675).
Three sheets.

GSC Central Rockies. - Scale 1:2,000,000. - Washington : National Geographic Society, Cartographic Division, 1984.

GSC Geologic map of the Rio Grande Rift and southeastern Colorado Plateau, New Mexico and Arizona / W.S. Boldridge, Y. Bartov and A. Kron. - Scale 1:500,000. - Washington : American Geophysical Union, 1983.

Alaska

UBC Geothermal resources of Alaska. - Scale 1:2,500,000. - Fairbanks : Alaska Dept. of Natural Resources, Division of Geological and Geophysical Surveys, 1983.

California

UBC Geology and active faults in the San Francisco Bay area. - Scale ca. 1:270,000. - Point Reyes, Ca, : Coastal Parks Association, [1982].

UBC Technical map of the geothermal resources of California. - Scale 1:750,000. - Sacramento : Division of Mines and Geology, 1983.
(California Geologic Data Map Series ; 5).

Florida

UT 1983 Kiplinger forecast of Florida's growth during the next ten years by localities. - Scale [ca. 1:2,425,000]. - Washington : Kiplinger Washington Editors, 1983.
Map is adjunct to the Kiplinger Florida Letter.

Massachusetts

GSC Bedrock geologic map of Massachusetts / Richard
OOU Goldsmith [et al.]. - Scale 1:250,000. - Reston, Va. : United States Geological Survey, 1983.
Three sheets.
$11.00 U.S.

Utah

GSC Utah mining district areas and principal metal occurrences. - Scale 1:750,000. - Salt Lake City : Utah Geological and Mineral Survey, 1983.
(Map 70).

GSC Non-metallic mineral resources of Utah. - Scale 1:750,000. - Salt Lake City : Utah Geological and Mineral Survey, 1983.
(Map 71).

Wyoming

MU Geothermal resources of Wyoming / produced by the
UT National Geophysical Data Center for the Geothermal and Hydropower Technologies Division, United States Department of Energy. - Scale 1:500,000 ; Lambert conformal conic proj. (W111 -W104°/N45°-N41°). - [Washington] : U.S. Geothermal and Hydropower Technologies Division, 1983.
$4.00 U.S.

WEST INDIES -- Maps

JAMAICA

UBC Jamaica. - Scale 1:356,000. - Convent Station, N.J. : General Drafting Co. Inc. for Esso Standard Oil, S.A. Limited, 1983.

CENTRAL AMERICA -- Maps

MEXICO

MU Mexico [map] / Produced by the Cartographic Division, National Geographic Society ; John B. Garver, Jr., chief cartographer. - Washington : National Geographic Society, 1982.

PANAMA

MU Republica de Panama, mapa fisico / perparado por el Instituto Geografico Nacional "Tommy Guardia" IGNTG del Ministerio de Obras Publicas. - Ed. 12 IGNTG. - [Panama] : El Instituto, 1982.
(Serie E / Instituto Geografico Nacional "Tommy Guardia" ; 462P).

SOUTH AMERICA -- Maps

GSC Mapa metalogenico de America del Sur = Metallogenic map of South America / Comision del Mapa Geologico del Mundo. Sub-comision Mapa Metalogenico del Mundo. - Scale 1:5,000,000. - Caracas : Ministerio de Energia

y Minas, 1983.
Three sheets and explanatory text.

PERU

MU Arequipa y aledanos turisticos - [Lima] : Touring y Automovil Club del Peru, [1982].

MU Carta de turismo, Junin map. - [Lima] : Touring y Automovil Club del Peru [1982].

MU Circuitos turisticos, Trujillo-Cajamarca [map] / Dpto. de Cartografia; dib. G. Paucarcaja B.-C. Rincon P. - [Lima] : Touring y Automovil Club del Peru, [1982].

MU Zonas turisticas de Lima [map] / Dpto. de Cartografia; dib. G.P.B.- C.R.P. - [Lima] : Touring Automovil Club del Peru, 1982.

EUROPE -- Maps

MU AA map of Western Europe, including Yugoslavia and Greece / Produced by the Cartographic Services Unit, Publications Division of the Automobile Association. - Basingstoke : Hants., 1982.

MU Italie, [Suisse map] = Italy, [Switzerland] = Italia, [Svizzera] = Italien, [Schweiz] / dressée par la Manufacture française des pneumatiques Michelin. - 6 ed. - Paris : Michelin, 1983.
(Carte ; 988).

GSC A Traveler's map of Spain and Portugal / Produced by the Cartographic Division, National Geographic Society. - Scale 1:1,850,000. - Washington : National Geographic Society, 1984.

AUSTRIA

GSC Landsat-bildlineamente von Osterreich. - Scale 1:500,000. - Vienna : Geologische Bundesanstalt, 1984.

GSC Geologische karte von Wien und Umgebung. - Scale 1:200,000. - Vienna : Geologische Bundesanstalt, 1984.

FRANCE

OOU Carte des mutations de l'espace rural français 1950-1980 / P. Brunet. - Echelle 1:1,000,000. - Caen : Centre de recherches sur la vie rurale de

l'Université de Caen, 1984.
Une carte et un rapport.
$21.84

MU France, sentiers de grande randonnée = [Map] Weitwanderwege = Long distance footpaths / Institut géographique national - Ed. 4. - Paris : Institut géographique national, 1983.

GERMANY (DEMOCRATIC REPUBLIC)

UBC Deutsches Demokratische Republik Strassenkarte. - Scale 1:500,000. - Bern : Kümmerley and Frey, 1983.

UT Dresden. - Scale 1:20,000. - Leipzig : VEB Tourist Verlag, 1983.
Accompanied by 24 page text with street index.

GERMANY (FEDERAL REPUBLIC)

UT Hamburg. - 68 aufl. - Scale 1:20,000 and 1:30,000 ; Hyperboloid proj. - Hamburg : Falkverlag, 1983.
Accompanied by 72 page text.

GREAT BRITAIN

OOU Central Scotland / Michael Wood. - Livingston, West Lothian : Panorama Central Regional Council, Clyde Surveys, 1983.
Artist's impression; not to scale.

HUNGARY

UT Sopron térkép = plan = map = karta / Domokos György. - Scale indeterminable. - Sopron : Ciklamen Tourist, 1983. ISBN: 9633506352

SCANDINAVIA

GSC Aeromagnetic map of Scandinavia. - Scale 1:2,500,000. - Uppsala : Sveriges Geologiska Undersökning, 1983. (Serie Cb nr 22).

SOVIET UNION -- Maps

GSC Metallogenicheskaia karta Karpato-Balkanskoy oblasti = Metallogenic map of the Carpathian-Balkan area. - Scale 1:10,000,000. - Sofia : Bolgarskaia Akademiia Nauk, 1983.
Eighteen sheets accompanied by a list of mineral deposits and an explanatory text.

ASIA -- Maps

CHINA

UBC China's human resources. - Scale ca. 1:21,150,000. - Hong Kong : Asian Research Service, 1984.

MU The Marine and continental tectonic map of China and its environs / Zhang Wen-You. - Scale 1:5,000,000. - Beijing : International Distributing Section, Science Press, 137 Chaoyangmennei St., 1983.
$66.70 U.S.

INDONESIA

OOU Carte internationale du tapis végétal-Sumatra sud / Y. Laumonier - Echelle 1:1,000,000. - Toulouse, France : Institut de la carte internationale du tapis vegetal/SEAMEOBIOTROP, 1983.
$15.65

UBC Indonesia. - Scale 1:5,300,000. - Jakarta : P.T. Pembina, 1984.

ISRAEL

OOU [Israel] Petroleum rights 15 November 1983 / Ministry of Energy and Infrastructure. The National Energy Authority. - Scale 1:500,000. - [Tel Aviv] : Survey of Israel, 1983.
$16.00 U.S.

KOREA

GSC Metallogenic map of Korea. - Scale 1:1,000,000. - [Seoul] : Korea Institute of Energy and Resources, 1983.
Accompanied by explanatory text.

AFRICA -- Maps

MOROCCO

MU Marokko Strassenkarte [map]: mit Sehenswürdigkeiten = Morocco road map: with places of interest / Kümmerly and Frey - Ausg. 1983. - Bern : Kümmerly and Frey, 1983.

OCEANIA -- Maps

AUSTRALIA

GSC Geological map, South Australia. - Scale 1:2,000,000. - [Adelaide] : Geological Survey of South Australia, 1982.

PACIFIC ISLANDS

UBC Map of Suva City, Lami Town and environs. - Scale 1:15,000. - Suva : Dept. of Lands and Surveys, 1982. (FLSMS 2-4).

OCEANS -- Maps

UBC Preliminary tectonostratigraphic terrane map of the Circum-Pacific Region. - Scale 1:20,000,000. - Reston, Va. : United States Geological Survey, 1983. (U.S.G.S. Open File ; 83-716).
Accompanied by 23 page text.

WORLD -- Maps

OOU Afrique et Moyen Orient. - Echelle 1:10,000,000. - Paris : Editions Jeune Afrique, 1983.
$8.00

UT Figure representant les 4 parties du Monde; rose de tous les rumbs de vent / Jean Guerrard. - Scale indeterminable. - [Chicago] : Rand McNally and Company, 1983.
Two maps on one sheet : facsim.
Illustrations from the anonymous manuscript: Les commencemens de l'hidrographie, Dieppe, ca. 1630.

OOU Internationale Guterverkehrskarte 1:3,500,000. - Scale 1:3,500,000. - Frankfurt : Herausgegeben von der Hauptverwaltung der Deutschen Bundesbahn, 1982.
$7.15

OOU New World of understanding [the Americas] / Jesse Levine. - no scale. - San Jose : Laguna Sales, 1982.
$7.50 U.S.

CU Political map of the World, 1 June 1983. - Scale
UA 1:4,000,000. - [Washington : Central Intelligence
UBC Agency], 1983.

UT Spaceship earth: edition of the Fuller dymaxion sky-ocean world / R. Buckminster Fuller and Shoji Sadao. - Scale 1:47,500,000 and 1:57,000,000 ; Fuller proj. - Philadelphia : Buckminster Fuller Institute, 1982. Accompanied by explanatory text.

EXTRA-TERRESTRIAL -- Maps

GSC Controlled photomosaic of the Casium southwest quadrangle of Mars. - Scale 1:2,000,000. - Reston, Va. : United States Geological Survey, 1983. (Miscellaneous Investigation Series ; I-1525).

GSC Controlled photomosaic of the Cebrenia northwest quadrangle of Mars. - Scale 1:2,000,000. - Reston, Va. : United States Geological Survey, 1983. (Miscellaneous Investigation Series ; I-1521).

MU The Heavens [map] / compiled and drawn in the Cartographic Division of the National Geographic Society; Richard J. Darley, chief cartographer. - Washington : National Geographic Society, 1982.

ATLASES

NORTH AMERICA - Atlases

UBC Gousha North American road atlas / H.M. Gousha Company. - San Jose : Gousha/Chek-Chart, 1983.

UT Sales planning atlas / Hammond Incorporated. - Maplewood, N.J. : Hammond Incorporated, 1983. ISBN: 0843712635

CANADA

CU Climatic atlas Canada: a series of maps portraying
UBC Canada's climate = Atlas climatique Canada: série de
UT cartes illustrant le climat du Canada. - Ottawa : Canadian Climate Program, 1984-.
Map series 1 - Temperature and degree days.
ISBN: 0660526832

Alberta

CU The Atlas of Alberta / Ted Byfield. - Edmonton :
UA Interwest Publications, 1984.
ISBN: 0969185219
$39.50

British Columbia

CU
UT
British Columbia ghost town atlas / Garnet Basque. - Langley, B.C. : Sunfire Publications, 1982.
ISBN: 0919531032
$6.95

Québec

OOU
Agrométéorologie: atlas agroclimatique de Québec méridional, données dérivées de la température / rédigé par Pierre-André Dubé, Joseph-Edgar Chevrette, Paul Lamg. - [Québec] : Ministère de l'agriculture, des pêcheries étude l'alimentation, 1982.
ISBN: 255104572X
$5.00

MU
Atlas du code géographique de Québec / Bureau de la statistique du Québec. - Québec : Le Bureau de la statistique de Québec, 1982.
ISBN: 2551056128

UNITED STATES

MU
OOU
UBC
Historical U.S. county outline maps 1840-1980 / Thomas D. Rabenhorst et al. - Baltimore : University of Maryland - Baltimore County, Department of Geography, 1984.
$45.00 U.S.

CU
Rand McNally interstate road atlas. - Rev. ed. - Chicago : Rand McNally and Co., 1984.
ISBN: 0528894706
$2.95 U.S.

CU
West and Southwest wind atlas / Dean DeHarpporte. - New York : Van Nostrand Reinhold, 1984.
ISBN: 0442218230
$19.95 U.S.

California

MU
UA
California patterns: a geographical and historical atlas / David Hornbeck, Phillip Kane, David L. Fuller. - Palo Alto, Calif. : Mayfield Pub., 1983.
ISBN: 0874845831
$15.95 U.S

Idaho

GSC The Compact atlas of Idaho / by cartography students, Department of Geography, College of Mines and Earth Resources, University of Idaho; under the direction of Alan A. Delucia. - Moscow, Idaho : Cart-O-Graphics, University of Idaho, 1983.
ISBN: 0940982021

Oregon

UBC Northern Oregon Cascades: topographic atlas / Madelynne, Diness. - Portland, Ore. : Flying Pencil Publications, 1983.

New Hampshire

CU The New Hampshire atlas and gazetteer. - Freeport,
MU Me. : DeLorme Publishing Co., 1983.
ISBN: 0899330045
$8.95 U.S.

New York

MU New York State atlas / New York (State). Dept. of Transportation. - Albany, N.Y. : New York State, Dept. of Transportation, 1983.

North Dakota

UA Prairie mosaic: an ethnic atlas of rural North Dakota. - Fargo, N.D. : North Dakota Institute for Regional Studies, 1983.

Vermont

CU The Vermont atlas and gazetteer. - Freeport, Me. :
MU DeLorme Publishing Co., 1983.
ISBN: 0899330053
$8.95 U.S.

CENTRAL AND SOUTH AMERICA -- Atlases

UT Atlas de los territorios de la Jewish Colonization Association en Argentina y Brazil, 1913-1941 / Alberto Kleiner. - [Buenos Aires] : Libreros y Editores del Poligono SRL, [1983].
Reprint (2nd work). Originally published: Buenos Aires : Jewish Colonization Association, 1942.

CU Latin American history: a teaching atlas / Cathryn L.
UT Lombardi, John V. Lombardi, K. Lynn Stoner. - Madison, Wis. : Published for the Conference on Latin American History by the University of Wisconsin Press, 1983.
ISBN: 0299097102

EUROPE -- Atlases

CU Atlas of EEC affairs / Raymond Hudson, David Rhind,
UA Helen Mounsey. - London : Methuen, 1984.
ISBN: 0416309100
$23.62

GSC An atlas of past and present pollen maps for Europe, 0-
MU 13,000 years ago / B. Huntley and H.J.B.Birks. -
UT Cambridge : Cambridge University Press, 1983.
ISBN: 0521237351

UT Europa Eisenbahn-Atlas: das unentbehrliche Handbuch für alle Eisenbabnreisenden in Europa. - Bern : Kümmerly and Frey, 1983.
ISBN: 3259032363

UT Road atlas Europe. - New ed. - Edinburgh : Bartholomew, 1984.
ISBN: 0702805920

GERMANY

UT Stuttgart Stadtatlas: Grossraumstadtplan / Reise- und Verkehrsverlag. - 1. Aufl. - Stuttgart : RV Reise- und Verkehrsverlag, 1984.
ISBN: 3575114072

GREAT BRITAIN

MU AA Greater London street atlas. - 4th. rev. ed. - London : Geographia, 1983.

UT Lancaster District: a computer-drawn census atlas (1981) / D.J. Maguire [et al.]. - Lancaster : Dept. of Geography, University of Lancaster, 1983.
University of Lancaster Dept. of Geography, Bailrigg, Lancaster, England.
ISBN: 0901699985

MU
UT Ordnance Survey motoring atlas of Great Britain. - Southampton : Ordnance Survey, 1983.
ISBN: 0600350665

NETHERLANDS

CU Zeeland in oude kaarten / Franz Gittenberger, Helmut Weiss. - Tielt, Belgium : Lannoo, [1983].
ISBN: 902091121X
$53.88

SOVIET UNION -- Atlases

OOU Atlas SSSR / Redaktsionnaia Killegiia, V.V. Tochenov [et al.]. - Moskva : Glavnoe upravlenie geodezii i kartografii pri Sovete Ministrov SSSR : Distributed by Telberg Corp., 1983.

UT Istoriia Kommunisticheskoi partii Sovetskogo Soiuza: atlas / starskyi redaktor Sukenik, I. IA. - Izd. 3., dop. - Moskva : In-t marksizma-leninizma pri TSK KPSS GUGK, 1982.

ASIA -- Atlases

CHINA

MU Atlas of China / Caroline Blunden. - New York : Facts on File Inc., 1983.
ISBN: 0871961326

AFRICA -- Atlases

CU UA An Atlas of African affairs / Ieuan Ll. Griffiths. - London : Methuen, 1984.
ISBN: 0416309402
$8.27

MU UBC Le Climat de l'Afrique tropicale = The Climate of tropical Africa / Marcel Leroux. - Paris : Champion, 1983.
ISBN: 2852031140

CAMEROON

OOU Atlas aérien du Cameroun: campagnes et villes / Alain Beauvilain [et al.]. - Yaoundé : Université de Yaoundé. Département de Géographie, 1983.

SENEGAL

CU MU Atlas du Sénégal / Paul Pélissier, Georges Laclavère, Cheikh Bâ. - 2e éd. - Paris : Editions Jeune Afrique,

1983.
ISBN: 2852582880

OCEANS -- Atlases

MU
UBC Climatological atlas of the world ocean / Sydney Levitus. - Rockville, Md. : U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, 1982.
(NOAA Professional Paper ; 13)

WORLD -- Atlases

CU An Atlas of renewable energy resources: in the United Kingdom and North America / Julian E.H. Mustoe. - Chichester, West Sussex : Wiley, 1984.
ISBN: 0471102938
$61.85

UBC Atlas stratégique: géopolitique des rapports de forces dans le monde / Gerard Chaliand. - Paris : Fayard, 1983.
ISBN: 2213012040

CU
UA An Atlas of world affairs / Andrew Boyd. - 7th ed. - London : Methuen, 1983.
UT ISBN: 0416323707
$12.60

UT Der Grosse Welt atlas. - Berlin : RV Reise- und Verkehrsverlag 1983.
$42.00

CU
UBC Historical maps on file / Martin Greenwald Associates. - New York : Facts on File, 1984.
ISBN: 0871967081
$142.25

UT Nelson atlas of the World / Geoffrey J. Matthews. - Scarborough, Ont. : Nelson Canada, 1983.
ISBN: 0176017496

EXTRA- TERRESTRIAL -- Atlases

MU Atlas of deep-sky splendors / Hans Vehrenberg and U. Güntzel-Lingner. - 4th ed. - Cambridge : Cambridge University Press, 1983.
ISBN: 0521258340

BOOKS

GENERAL BOOKS

CU Basic cartography for students and technicians. - [S.l.] : International Cartographic Association, 1984.
Two volumes.
ISBN: 9070310058

MU A Cartographic history of spruce budworm defoliation from 1967 to 1981 in eastern North America = Historique en cartes de la défoliation causée par la tordeuse des bourgeons de l'épinette dans l'est de L'Amerique du Nord de 1967 à 1981 / E.G. Kettela. - Ottawa : Environment Canada, Canadian Forestry Service, 1983.
(Information Report / Canadian Forestry Service, Forest Insect and Disease Survey ; DPC-X-14).
ISBN: 0662526201

CU The Chartmakers: a history of nautical surveying in Canada / Stanley Fillmore, R.W. Sandilands. - Toronto : NC Press Ltd., 1983.
ISBN: 0919601928
$34.95

UT Ecological mapping from ground, air and space: proceedings of a symposium held at Monks Wood Experimental Station 25-27 November 1981 / R.M. Fuller. - Cambridge : Institute of Terrestrial Ecology, 1983.
(ITE Symposium ISSN 0263-8614 ; N.10).
ISBN: 0904282716

CU Energy graphics: graphs, charts, tables, maps on U.S. and world production, consumption, and reserves / Duncan L. Gibson. - Englewood Cliffs, N.J. : Prentice-Hall, 1983.
ISBN: 0132776243
$19.95 U.S.

CU Introductory cartography / John Campbell. - Englewood
OOU Cliffs, N.J. : Prentice-Hall, 1984.
ISBN: 0135013046
$31.95 U.S.

REFERENCE BOOKS

UT Directory of New Zealand soil survey maps / compiled by J.E. Fenwick and C.A. Tangelder. - [Christchurch, N.Z.] : Lincoln College Press, 1983.
(Distance Education Service Publication ; N.3)

UBC Directory of U.K. Map Collections / Barbara A. Bond. - London : Map Curator's Group of the British Cartographic Society, 1983.

UBC Index to published reports and maps, Mineral Resources Group, 1981-1983. - Toronto, Ont. : Publications Services Section, Ministry of Government Services, 1984.

UT An inventory of topographic maps and aerial photography of Ontario, 1900-1950 / Paul Campbell. - Toronto, Ont. : Land Use and Environmental Planning Dept., Route and Site Selection Division, 1982. (Report ; N.83124).

UBC Proposed air photography and survey control programs 1984-1986 / British Columbia. Survey and Resource Mapping Branch. - Victoria, B.C. : Ministry of Environment Survey and Mapping, 1984.

CU Topographic mapping of the Americas, Australia, and New Zealand / Mary Lynette Larsgaard. - Littleton, Colo. : Libraries Unlimited, 1984.
ISBN: 0872872769
$96.00

BIBLIOGRAPHIES

CU MU Alaskan maps: a cartobibliography of Alaska to 1900 / Marvin W. Falk. - New York : Garland Pub., 1983. (Garland Reference Library of the Humanities ; V.409).
ISBN: 0824091329
$62.00 U.S.

UBC Bibliographie zur Geschichte der deutschen Kartographie / Lothar Zogner. - Munchen : Bibliographia Cartographica Sonderheft, 1984.

CU The Mapping of Bermuda: a bibliography of printed maps and charts, 1548-1970 / Margaret Palmer. - 3d rev. ed. - London : Holland Press, 1983.
ISBN: 0946323011
$31.75

CU Maps of Africa: an illustrated and annotated cartobibliography / Oscar I. Norwich and Pam Kolbe. - Johannesburg : Donker, 1983.
ISBN: 0868520284
$120.00 U.S.

CU Panoramic maps of cities in the United States and Canada: a checklist of maps in the collections of the

Library of Congress, Geography and Map Division / John R. Hebert and Patrick E. Dempsey. - 2nd ed. - Washington : Library of Congress, 1983.
ISBN: 0844404136

GAZETTEERS

UA Gazetteer of Greenland: names approved by the United States Board on Geographic Names. - Washington : Defense Mapping Agency, 1983.

UA Gazetteer of Syria: names approved by the United States Board on Geographic Names. - Washington : Defense Mapping Agency, 1983.

NEW PUBLICATIONS

STANDING ORDERS FOR CIA MAPS

Standing orders for "Maps Only (all areas)" from the Central Intelligence Agency (CIA) can be arranged through the Subscription Branch, National Technical Information Service, United States Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. A minimum payment of U.S. $50.00 is needed to establish a NTIS deposit account before an order can be entered on the next available mail list. A charge is then made to this deposit account each time a document is shipped.

Standing Orders remain in effect until notice of change or cancellation is received by the NTIS Subscription Branch. Six to eight weeks should be allowed for any revision or cancellation of your order to become effective.

THE METROPOLITAN ATLAS SERIES

Census Thematic Maps from Statistics Canada

Maps, graphs and text are used to illustrate more than thirty themes from the 1981 Census for each of twelve major metropolitan areas: Calgary, Edmonton, Halifax, Hamilton, Montreal, Ottawa-Hull, Quebec, Regina, St. John's, Toronto, Vancouver and Winnipeg. Data on key demographic, housing, social and economic characteristics are portrayed at the census tract level, an area roughly equivalent to a city neighbourhood. Comparative data are provided for the metropolitan area as a whole, the province in which it stands, and Canada. For each theme there is a dot distribution map to show absolute values and a shaded map to show relative values; these are supplemented by graphs, histograms and explanatory text.

The tabular statistics on which the maps and graphs are based are available in a supplementary series of bulletins. The Metropolitan Atlas Series (catalogue nos. 99-919 to 99-930) -- a set of 12 publications, each priced at $8.50 in Canada and $10.20 elsewhere -- can be ordered from Publication Sales and Services, Statistics Canada, Ottawa K1A 0T6, or from the Bureau's nearest regional reference centre. For further information on how these atlases were produced, contact Rick Mitchell, Geography Division, Statistics Canada, (613) 990-9707.

FACSIMILE EDITION OF JEFFERYS' *THE AMERICAN ATLAS*

Nottingham Court Press, 44 Great Russell Street, London WC1B 3PA has published a limited edition (150 numbered, hand-coloured copies) of *The American Atlas* (1776) by Thomas Jefferys. The price is £520.

THE SOUTHLAND EXPLORED

The chart and coastal profiles, resulting from the 1696-97 voyage of Willem Hesselsz de Vlamingh to Western Australia are reproduced in facsimile in this volume, with text by Dr. Günter Schilder of the State University of Utrecht. The book is available in a limited edition (500) from Rudolf Muller International Booksellers, P.O. Box 9016-1006 AA Amsterdam, The Netherlands for f215,-.

ATLAS OF CALIFORNIA AVAILABLE

The *Atlas of California* by Michael W. Donley *et al.*, published in 1979, is available from the Academic Book Center, 2424 N.E. 52nd, Portland, Oregon 97213, for U.S. $20.00 This Atlas was reviewed in *ACML Bulletin* 50 (March 1984), p. 42-43.

COLLECTOR'S EDITION OF ATLAS OF UTAH AVAILABLE

The *Atlas of Utah* reviewed in *ACML Bulletin* 47 (June 1983), is available in a special limited Collector's Edition for U.S. $137.50 (including sales tax). Regularly priced at $250.00, this leather-bound volume comes with a matching slip case. It has won the "Best of Show" award which was presented by the Binding Industries of America. The Collector's Edition and the regular hard-cover edition at $35.00 plus $2.00 sales tax are available from the Business Affairs Office, Miller Administration Building, Weber State College, Ogden, Utah 84408.

NEWS AND COMMENTS

CCA PRESIDENT'S PRIZE COMPETITION 1984-85 ANNOUNCED

The Canadian Cartographic Association has announced the 1984-85 President's Prize competition open to students of post-secondary institutions, and to persons occupying junior positions in places of employment where maps are made or used. The competition this year will be for awards in four categories, each with a small monetary component, (i.e. in the order of $50.00 each), and certificates which will be presented at the Fredericton Annual meeting.

Categories of award are (a) Monochromatic map; (b) Printed map in colour (or taken to the proof stage); (c) Formal written paper; and (d) Computer algorithm specific to a cartographic problem.

Submissions must reach the President of the Canadian Cartographic Association, Department of Geography, University of Ottawa, Ont., K1N 6N5, on or before 15 May 1985. Membership in the CCA is not required.

SYMPOSIUM ON DISASTER PREPAREDNESS

The Toronto Area Achivists Group in association with the Archives of Ontario is sponsoring "An Ounce of Prevention: A Symposium on Disaster Preparedness for Information Managers" at the Royal York Hotel, Toronto, March 7-8, 1985. Registration fee is $225.00 ($200.00 prior to February 1), which includes a copy of the planning handbook, the symposium proceedings, luncheons and reception. The address is: Toronto Area Archivists Group, P.O. Box 97, Station F, Toronto, Ontario M4Y 2L4.

U.S. GEOLOGICAL SURVEY COURSE IN BASE MAPPING

The U.S. Geological Survey (USGS) is designing a training course for foreign participants in the preparation, publication, and use of base maps. The course is to be presented by the National Mapping Division and is intended for professionals in agencies responsible for map presentation of natural resources, agriculture, forestry, land use, hydrology, renewable and non-renewable resources, and information from related disciplines. Professionals of these disciplines will, to various degrees, benefit from a foundation in base mapping concepts, including modern digital cartographic techniques and publication principles. The proposed scheduling is early fall, 1985, and the duration is approximately 4 - 6 weeks. Information regarding course outline, cost for attendance, and application procedures will be available from Office of International Geology, Attn: Training Section, U.S. Geological Survey, MS #917, Reston, Virginia 22092.

INTERNATIONAL REMOTE SENSING WORKSHOP

The U.S. Geological Survey is holding the 24th International Workshop in Remote Sensing: Fundamentals of Applications and Analysis Techniques from September 3 to October 4, 1985 in Sioux Falls, South Dakota. The workshop is designed to familiarize the participant with the data characteristics, advantages and limitations, and applications of a variety of remote sensing systems, as well as to provide experience in analyzing and interpreting remotely sensed data to produce information useful in resource management and planning. Emphasis is placed on the analysis of Landsat data, although attention is also given to the interpretation of aerial photographs. The total workshop fee is $2,500 which includes the cost of instruction, training materials, and workshop bus travel. For further information, contact the:

Training Section, Office of International Geology
U.S. Geological Survey
National Center (917)
Reston, Virginia 22092

FIG CONGRESS '86

The International Federation of Surveyors/Fédération Internationale des Géomètres (FIG) will hold their XVIII Congress in Toronto June 1-11, 1986 at the Sheraton Centre Hotel. Mailing address is:

FIG Congress '86,
P.O. Box 186, Station Q
Toronto, Ontario M4T 1M2

* * *

ELEVENTH INTERNATIONAL CONFERENCE ON THE HISTORY OF CARTOGRAPHY TO BE HELD IN CANADA

The Eleventh International Conference on the History of Cartography will take place in Ottawa, 8 to 12 July 1985. The National Map Collection, Public Archives of Canada, will host the conference, which is being held in association with *Imago Mundi* and the International Society for the History of Cartography.

Several areas of interest selected for emphasis at this conference are:

1. Teaching the history of cartography
2. The history of twentieth-century cartography
3. The history of Canadian cartography
4. Computers (including microcomputers) and the study of the history of cartography
5. The physical analysis of maps
6. Curatorship of collections of historical maps
7. Carto-bibliography

Some of these themes will be explored through formal papers, while others will be treated in seminars, workshops, and laboratory demonstrations.

A call for papers has been made through the first circular, which all ACML members have received. Abstracts are requested by 1 December 1984, and full papers by 1 March 1985. Further information can be obtained by writing to:

History of Cartography Conference 1985
National Map Collection
Public Archives of Canada
Ottawa, CANADA K1A ON3

Attn: Edward H. Dahl, Chairman

Telephone (613) 995-1077

DOUGHTY'S RECORD AS A MAP REFERENCE OFFICER

An impressive if somewhat chilling display of early reference service at the Public Archives of Canada by none other than the Dominion Archivist himself is recounted by Charles P. Everitt in his *The Adventures of a Treasure Hunter: A Rare Bookman in Search of American History* (Boston, 1952, pp. 100-101).

Percentages considered, Everitt reckoned, he had been "incredibly lucky" in some of the librarians [*sic*] he had come to know, and proceeds to reminisce about his dealings with Arthur G. Doughty:

> Around 1900, in my second or third catalogue, I listed some obscure Canadian pamphlet, eight pages long, for $12.50.
>
> The Canadian National Archives, which had just been put under the care of Dr. Arthur G. Doughty, asked to see the pamphlet on approval, and I sent it.
>
> Soon afterward I heard from Dr. Doughty: "Dear Everitt: I'll be a great many years older before I start paying $12.50 for eight page pamphlets."
>
> I wrote back: "Dear Dr. Doughty, I'll be a great deal older before I start selling pamphlets by weight."
>
> This was the beginning of a beautiful lifelong friendship. After Dr. Doughty got to know me, he stopped worrying about the bulk of what he bought. His purchases eventually totaled many thousands of dollars.
>
> One morning about ten o'clock I stopped in to call on Dr. Doughty in Ottawa.
>
> He said, "Everitt, I'm delighted to see you, but this is a busy day, and I'm afraid all I can give you is fifteen minutes."
>
> "Oh, I haven't got anything particular on my mind anyway," I said. "I hear Sir Lester Harmsworth has given you a swell collection of Canadiana."
>
> By the time we had finished discussing Sir Lester's gift, it was 4 p.m.; we looked over Harmsworth's pictures, and at long last I started to leave. "Wait a minute," said Dr. Doughty. "I just want to show you that this is the only library in the world where you can really find a map when you want it. You name any American map of any date and any size, and I'll undertake to have it in front of you, held down by

> thumbtacks so that you can really study it, within five minutes of the time you say go."
>
> I called for the first map made by the Samuel Champlain expedition, and it was before me in just over three minutes.

The map in question is presumably the second state of Champlain's 1632 metre-wide engraved map, *Carte de la nouvelle france...*, since the Archives at that time did not own originals of Champlain's 1612-13 maps. I have checked to see whether thumbtack holes actually appear on that original -- it's possible, but the edges of the map are too badly abraded.

We have since acquired virtually pristine originals of both known states of this map by Champlain. Were Doughty here today, even fewer than three minutes would be required to produce 105-mm microfilm reference negatives of these particular maps, although up to a day might be required for materials stored in satellite facilities miles away, something Doughty did not have to contend with when he set out to impress his friend.

Edward H. Dahl
National Map Collection
Public Archives of Canada

NEW MAP LIBRARIAN AT YORK

Kathleen Wyman has been appointed the new map librarian at York University following the resignation of Janet Allin as Map Library Supervisor last August.

NATIONAL MAP COLLECTION

New Telephone Listing, effective November 14, 1984

Administration

Betty Kidd (Director) (613) 996-7605

Early Canadian Cartography

Ed Dahl (Chief)	995-1452

Modern Cartography

Louis Cardinal (Chief)	996-7619
Francine Cadieux	996-7640
Heather Stevens	996-7639

Government Cartographical and Architectural Records

Dorothy Franklin (Chief)	996-7620
Brian Hallett	996-7613
Nadia Kazymyra-Dzioba	996-7650
Bruce Weedmark	996-7607

Documentation

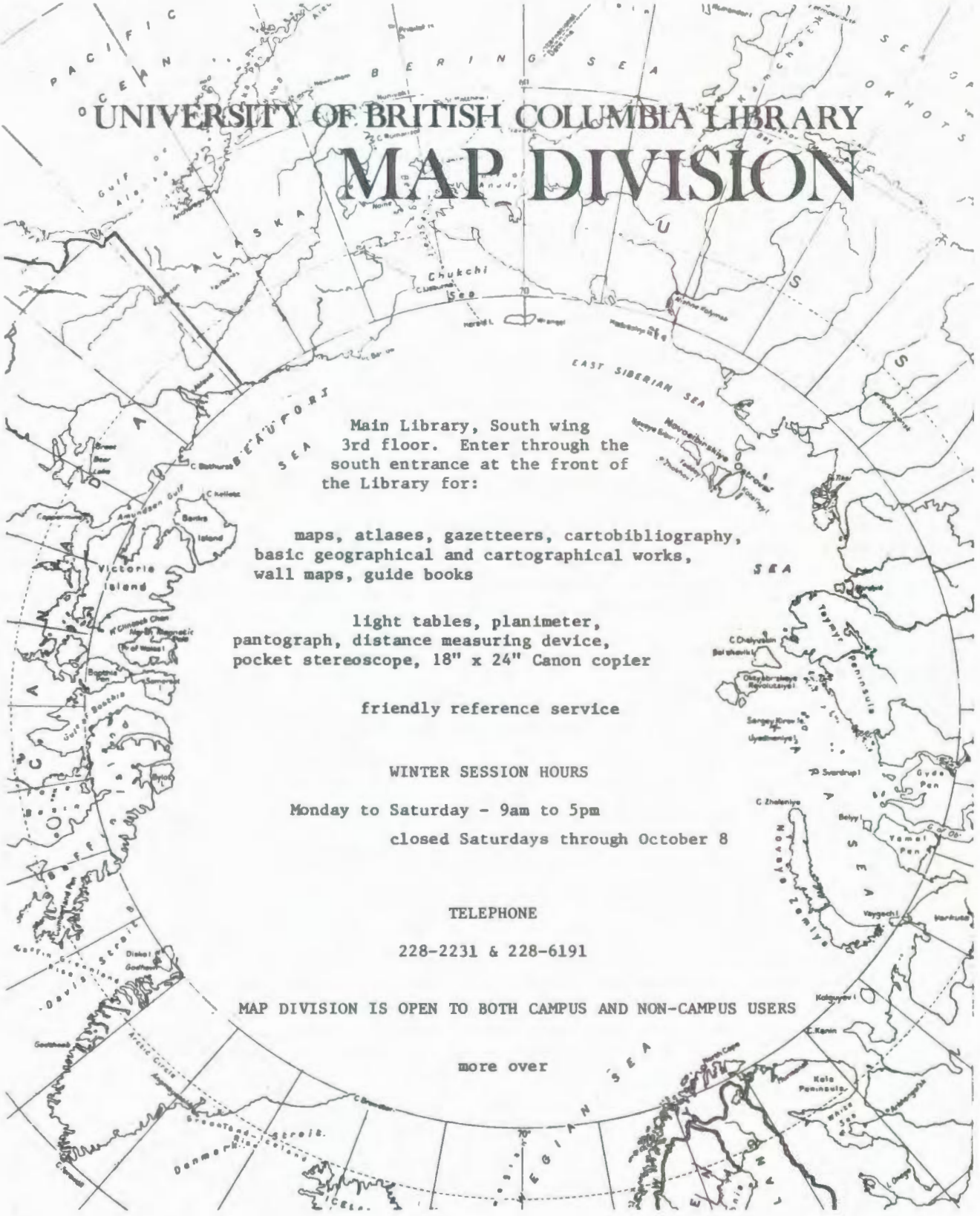
Hugo Stibbe (Chief)	996-7606
Velma Parker	996-7611
Donna Porter	996-7611

Services

Gilles Langelier (Chief)	996-7628
Patrick McIntyre (Reference)	995-1079
Thomas Nagy	996-7615
Carol White (Reference and ACML Publications)	995-1078

REPRINTS OF INTEREST

The following items are reprinted here through the courtesy of the University of British Columbia and University of Calgary Libraries.



The Map Division has 126,000 modern maps (mostly post 1900), 3,400 atlases, and a reference collection of 4,000 gazetteers, guide books, cartobibliographies, and basic geographical and cartographical works. Maps, atlases, and reference books are generally for use in the library. Specially backed wall maps may be borrowed, however, for use in seminars or for teaching on campus, and exceptions are made occasionally for other maps, provided they are not among those which are heavily used. There is also a newspaper clipping file of current events, geographical and cartographical changes and developments, and a file of tourist literature. We also collect early Baedecker Guide Books and have an Ogg collection of British town guides from the 1960's and 1970's.

For historical maps, see Special Collections Division.

CATALOGUES

The maps in the collection are listed in two separate catalogues located in the Map Division. One file is arranged by geographical name; the other is a subject file. Subject cards referring the user to the Map Division are filed in the Main Catalogue. Atlases and other books are listed in the Main Library catalogues, although the Map Division has a catalogue for them as well.

MAP COLLECTIONS

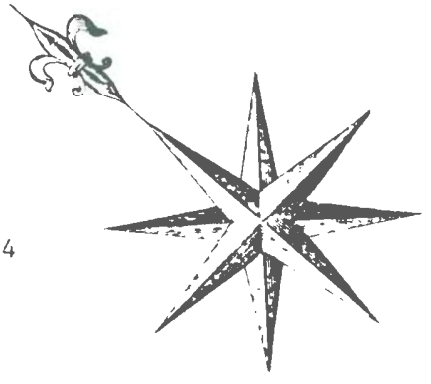
The collection is divided into three sections: hydrographic charts, topographic series, and thematic maps. UBC is a depository for Canadian *hydrographic* charts and has most current charts of the U.S. Pacific and Alaska coast, plus a growing collection of charts of other parts of the world under the Defense Mapping Agency depository scheme. *Topographic* maps at many scales include complete depository coverage for Canada, most of the western United States (again on deposit), Australia (on deposit), the 1:1,000,000 International Map of the World, and many map series for Latin America, the Pacific, Europe, Australia, Africa, and Asia. Because of UBC's interest in the Pacific area, we have attempted to cover this as thoroughly as availability and funds allow. *Thematic* maps on many subjects include depository copies of Canadian Geological Survey maps and of U.S. Geological Survey maps from 1967 on. An attempt is made to collect all maps published for British Columbia, with particular attention to the Greater Vancouver area, and as many as possible published maps of Canada as a whole. Types of maps include road maps, maps of urban areas, land use, ethnic groups, soils, minerals, etc. It is impossible to list all areas and subjects included in the collection.

REFERENCE SERVICE

If you need help with maps, please don't hesitate to ask for it at the information desk in the Map Division. The staff are trained to help people find maps and atlases, and will gladly show you how to use the catalogues and the map indexes and give assistance in interpreting maps if necessary. There are also reference books available on map interpretation and gazetteers to help locate places, as well as guide books, bibliographies, and dictionaries of map terms. Please ask and we will show you.

OTHER SERVICES AND SPECIAL EQUIPMENT

A study area with large tables is provided on the Mezzanine floor and there are two light tables, a planimeter, a pantograph, a distance measuring device and a pocket stereoscope available for use. A staff-operated Canon copier for making photocopies up to 18 x 24 inches is also located in the Map Division.



revised 7/83

THE UNIVERSITY OF CALGARY

MAPS AND AIR PHOTOS

WHAT? This division has materials helpful to any discipline concerned with the landscape - both cultural and physical. Maps are available displaying many types of thematic information of interest to students in archaeology, environmental studies, geography, geology, history, civil and survey engineering.

WHERE? The division is located on the 2nd floor of the Library Block, and is part of the Environment-Science-Technology Library.

Smaller collections of atlases and gazetteers can also be found in the Social Sciences reference area (4th floor, Library Tower) and in Reserve Services (basement, Library Tower) and in the Information Centre (2nd floor, Library Tower.) Reserve Services has world atlases available for 3 day loan.

WHEN? Atlases and gazetteers are part of the reference collection of the Environment-Science-Technology reference collection and are accessible at all times. Maps and airphotos are accessible during staffed times. Please inquire at the Maps and Airphotos Division office Monday-Friday 8:30-4:30 or at the Environment-Science-Technology Reference Desk from 4:30-8:00 p.m. during Fall and Winter Sessions. For intersession hours, holidays, etc., please inquire at the Information Centre Desk (2nd floor, Library Tower) or pick up one of the handouts available at any reference desk throughout the Library.

Telephone Numbers: 284-5969; 284-5966; 284-6828;

ACCESS? Access to the collection of atlases and gazetteers in a book format is available through the main card catalogue or through the card catalogue in the division itself. Access to the non book collection of maps and airphotos is available ONLY through the Maps and Airphotos Division card catalogues.

OTHER? Measuring devices, light tables, stereoscopes, a stereozoom transferscope, and a Map-O-Graph (an enlarging reducing device for maps, airphotos, microfilm, or any other graphic material) are on hand to assist in the use of the collection.

LOANS? The Maps and Airphotos Division is primarily a reference area. All materials should be used within the area. Arrangements for one day loans of certain types of materials may be made with the division.

A Brief Guide to the Collection

ATLASES

The division has an extensive collection of national and regional atlases containing thematic maps (e.g., history, geology, geography, economic, climate, vegetation, and population). A large collection of historical atlases and atlases in facsimile reprint, covering the mapping of the 14th to 19th centuries is available.

GAZETTEERS

Gazetteers locate specific physical and cultural features (i.e., rivers, towns, etc.) using a grid system such as longitude and latitude. In addition to the set of gazetteers covering Canada, the division's collection provides detailed coverage of the rest of the world.

MAPS

As a depository of both the Canadian and United States topographic mapping agencies, the map collection has intensive coverage of the northwest portion of North America. Topographic maps, which provide information on relief, vegetation, roads, buildings and other features in the physical and cultural landscape, are available for all areas of the world at various scales. In addition to other thematic maps, there is a strong collection of geological maps provided by the Canadian and United States Geological Surveys.

AIRPHOTOS

Airphotos are exact records of the physical and cultural landscape and are useful in the study of geology, geography, archaeology, civil engineering and biology. Donations from local companies have assisted us in providing coverage of most of western and northern Canada. The collection specializes in coverage of the Calgary region from 1922 to the present. Other features of the air photo collection include:

- a large number of interpretation aids to assist in the use of air photos
- sets of current indexes and index maps for provincial photography
- a small collection of remote sensing images and mosaics

MICROCARTOGRAPHY

The division holds some of its material in a microfilm or microfiche format. There is a large collection of Fire Insurance Plans covering western cities and towns in the early 1900's. These plans show both the location and type of buildings. Readers are available to handle 16, 35 or 105 mm. format.

REMOTE SENSING

A GUIDE TO THE LITERATURE AT THE UNIVERSITY OF CALGARY LIBRARY

This guide will assist you in locating remote sensing literature and images in the University of Calgary Libraries. It will indicate the basic materials and show you how you can locate materials more specific to your needs.

STANDARD TEXTS

Fundamentals of remote sensing / Purdue University Laboratory for Applications of Remote Sensing, 1976-82 (a multipart collection of cassettes and slides with texts explaining the basics of remote sensing, both theory and applications) Reserve Services G 70.4 F84 1976
Interpretation of aerial photographs / Thomas Avery TA 593 A8 1977
Landforms and surface materials of Canada : a stereoscopic airphoto atlas and glossary / J. D. Mollard. Map Room G 1116 C227M6 1977
Manual of remote sensing second edition / Robert N. Colwell TA 593 A55 1983 2 volumes
Remote sensing and image interpretation / Thomas M Lillesand G 70.4 L54 1979
Remote sensing : principles and interpretation / Floyd F. Sabins G 70.4 S32 1978
Remote sensing, the quantitative approach / Philip H. Swain and Shirley M. Davis. G 70.4 R424 1978
Terrain analysis, a guide to site selection using aerial photographic interpretation / Douglas Way GB 406 W38 1978

Many of the materials held by the University Libraries are indexed by the Main Card Catalogue on the second floor of the Library Tower. The following subject headings would be useful in your search of the Subject Card Catalogue to locate other materials on remote sensing:

Aerial photographs
Aerial reconnaissance
Earth Resources Technology Satellite
Landsat satellites
Multispectral photography
Photogrammetry
Photographic interpretation
Remote sensing
Space optics
Synthetic aperature radar
Technology satellite
Thermography

Government publications are not included in the main card catalogue and they are indexed separately through the Government Publications section on the fourth floor of the Library Tower. The terms listed above would be useful in the keyword file available through the computer terminal - NOMADS.

PERIODICAL LITERATURE

Periodicals contain specialized and current reports on both remote sensing technology and applications. This is a list of the major English language periodicals. Other titles are available to you by using the terms listed above in the main card catalogue followed by - Periodicals.

Canadian journal of remote sensing G 70.4 A1C35
Canadian symposium on remote sensing. Proceedings QE 33.2 R4A13
I.E.E.E. transactions on geoscience and remote sensing QC 801 I2
International journal of remote sensing G 70.4 A1156
International symposium on remote sensing of the environment QC 808.5 S94
Photo Interpretation Map Room G 142 A1P48
Photogrammetric engineering and remote sensing TA 593 A2P5
Photogrammetria TA 593 A2P55

BIBLIOGRAPHIES AND INDEXING TOOLS//THE WAY TO MORE SPECIALIZED INFORMATION

BIBLIOGRAPHIES

Remote sensing of earth resources : a guide to information sources / Leonard M. Bryan Geology Library G 70.4 B78 1979g
"Doctoral dissertations pertaining to remote sensing and photogrammetry, a selected bibliography 1945 - 19 ', in Photogrammetric engineering and remote sensing. v. 47 (5) 1981 pp. 617-629

INDEXING TOOLS

These items index remote sensing literature on an ongoing basis. They index books, reports, government publications, and periodical literature. They also usually provide an abstract of the item being indexed. Pathfinders are available to assist you in using many of these items. Some of these indexing tools have also been made available as a computer database which can be searched online by the appropriate area libraries.

SPECIALIZED INDEXES

Remote sensing of natural resources 1980- Sci Ref QH 54 H5 R4A175
Selectively indexes from Engineering index, Bibliography and index of geology, U.S. Government reports announcements, International aerospace abstracts, and Scientific and technical aerospace reports

Subjects covered are: geology / environmental quality / hydrology / vegetation / Oceanography / regional planning and land use / data manipulation / instrumentation and technology

Earth resources 1974- Sci Ref QE 33.2 A7E27
Selectively indexes from International aerospace abstracts, and Scientific and technical aerospace reports

Subjects covered are: agriculture and forestry / environmental changes / geodesy and cartography / geology and marine resources / hydrology and water management / data processing and distribution systems / instrumentation and sensors

Geo abstracts, section G: remote sensing, photogrammetry and cartography 1966-
Social Sciences Ref G 1 G362

Subjects covered are: remote sensing(general) / data acquisition and collection / interpretation of data / photogrammetry / cartography

RESORS (Remote sensing on-line retrieval system)
This database is managed by the Canada Centre for Remote Sensing (CCRS) and contains references to technical papers, reports, and documents in the CCRS Library. This database is accessible to you at no cost through the Alberta Remote Sensing Center in Edmonton (9820 - 106 Street, Edmonton T5K 2J6, phone 427-2381 - you can use the RITE Government operator 297-6161 to connect you with a Alberta Government Office)

GENERAL INDEXES

Engineering index 1916- Sci Ref ZTA 1 E62
Provides coverage of the technological aspects of remote sensing with subjects such as new equipment and techniques, and specific field applications of engineering methods and devices. Main subject heading is remote sensing (concepts covered are general / computer applications / computer engineering / environmental applications / imaging techniques / multispectral scanners

Bibliography and index of geology 1933- Sci Ref ZQE 1 G44
Covers the earth science literature of the entire world and includes theses in North America

International aerospace abstracts 1961- Sci Ref TL 501 I56
Covers the world's published literature in the field of aeronautics, space science and technology. Periodicals, books, meeting papers, conference proceedings, translations of foreign journal articles, and aerospace reports are indexed.

Science citation index 1961- Sci Ref ZQ 1 S33
Provides multidisciplinary coverage of remote sensing

Scientific and technical aerospace reports 1963- Sci Ref TL 796 A1S25
Covers worldwide report literature on the science and technology of space and aeronautics. Indexes scientific and technical reports issued by NASA and its contractors, other U.S. Government Agencies, corporations, universities, and research organizations throughout the world

U.S. Government reports announcements 1961 Sci Ref Q 1 U53
Provides coverage of the applications of remote sensing in the fields of environment surveys, energy source prospecting, oceanography, hydrology, climate, agriculture, and geology

COMPUTER DATABASE SEARCHING

Some of the above indexing tools are also available in machine readable formats and can be seached on-line. They are Engineering index (COMPENDIX covers from 1970), Bibliography and index of geology (GEOREF covers from 1961), Science citation index (SCISEARCH covers from 1965), and U.S. Government reports announcements (NTIS covers from 1964) For further information, please check with the Environment-Science-Technology Information Desk on the third floor Library Block.

REMOTE SENSING IMAGES AND INTERPRETATION AIDS

A large collection of images is available for your use in the Map and Air Photo Division. For your assistance, they have available mirror stereoscopes, a stereozoom transferscope, light tables, and an image enlarger /reducer (a Map-O-Graph). They also have catalogues of imagery available. The Map and Air Photo Division is located on the second floor of the Library Block, phone 284-5969.

SPECIAL LIBRARIES ASSOCIATION
GEOGRAPHY AND MAP DIVISION
1985 ANNUAL CONFERENCE, WINNIPEG

Sunday, June 9, 1985	
	Division Executive Board Meeting
1:00 - 2:30 pm	Open session
2:30 - 4:00 pm	Executive session
Monday, June 10, 1985	
9:00 - 11:30 pm	Division committee reports and discussion
Noon - 2:00 pm	Luncheon and Program Chair: Tim Ross, Cartographic Archivist, Provincial Archives Winnipeg Speaker: Randy R. Rostecki, Architectural Historian, Manitoba Dept. of Culture, Heritage and Recreation, Winnipeg. "The Growth of the Canadian Chicago: The Winnipeg Business District, 1870-1920"
2:00 pm	See Picture Division
Tuesday, June 11, 1985	
	Division meetings
9:00 - 10:00 am	Representative reports
10:00 - 11:30 am	Business meeting
Noon - 2:00 pm	Luncheon and Programme Speaker: Judith J. Field, Head, General Reference Dept., Flint Public Library, Flint, MI. "Widening Your Geographical Horizons: A Personal Approach"
5:00 - 7:00 pm	Reception, tour of exhibits at Provincial Archives, Tim Ross, Cartographic Archivist, Provincial Archives, Winnipeg.

Wednesday, June 12, 1985

1:00 - 3:00 pm — Programme: Geologic and Cartographic Information of Canada.

Chair: Hugh Larimer, Maps & Atlas Librarian, Elizabeth Dafoe Library, University of Manitoba, Winnipeg

Speakers:

Dr. T.R. Weir, Professor Emeritus, Dept. of Geography, University of Manitoba, Winnipeg. "Atlas of Manitoba -- An Experience in Problem Solving"

Sid Hansen, Senior Cartographer, Surveys & Mapping Branch, Winnipeg. "Surveys and Mapping: Manitoba"

3:00 - 5:00 pm — Division contributed papers/research in progress

Chair: Marsha L. Selmer, Map Librarian, University Library, University of Illinois at Chicago, Chicago, Il.

Speakers:

Muriel Strickland, Map Curator, University Library, San Diego State University, San Diego, Ca. "Mapped Information: An Historical Overview of Map Content"

Patrick E. Dempsey, Senior Reference Librarian, Geography & Map Division, Library of Congress, Washington, D.C. "Maps of Ireland in the Collections of the Geography & Map Division of the Library of Congress, Washington, D.C."

Marsha L. Selmer, Map Librarian, University of Illinois at Chicago, "Rufus Blanchard" and "Directory of 19th Century Chicago Map Makers"

Barbara Shupe, Map Librarian, and Jyoti Pandit, Documents Librarian, Main Library, State University of Stony Brook, Stony Brook, New York. "New York State Population -- 1790-1980"

Jean M. Ray, Map Librarian, Morris Library, Southern Illinois University at Carbondale,

Carbondale, Il. "Pay Equity in Academic Libraries, and How Do Map Librarians Come out?

Thursday, June 13, 1985

Full day all conference field trip: Combination bus/boat trip down to Lower Fort Garry.

CARTES HISTORIQUES

ASSOCIATION OF CANADIAN MAP LIBRARIES
ASSOCIATION DES CARTOTHEQUES CANADIENNES

HISTORICAL MAPS
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51 - 100

1982

The Association of Canadian Map Libraries has published 100 reproductions of historical maps of Canada. Individual copies may be obtained by writing to the ACML Publications Officer at the Business Address indicated on the inside of the front cover.

First fifty facsimile maps were assembled in a folio. These sets are now sold out. Maps ##51-100 have also been assembled in a set, consisting of a title page, introduction, indexes, placed in a gold-embossed hard cover. The price of the set is $100. The cover and the introductory pages may be purchased separately for $30; and the four introductory pages - for $6 ($5 + $1 postage). Please place the folio orders with -

PUBLICATIONS COMMITTEE (ACML)
c/o National Map Collection
Public Archives of Canada
395 Wellington Street
Ottawa, Ontario K1A 0N3

HISTORICAL MAPS