

# MERIDIAN



A Journal of the  
MAP AND GEOGRAPHY ROUND TABLE of the AMERICAN LIBRARY ASSOCIATION  
No. 5 1990

## Table of Contents

### Article

<b>Cartographic Glasnost</b> .....	7
------------------------------------	---

*by Gary W. North*

### Special Report: Promoting the Use of Maps and Spatial Data

<b>Maps and Spatial Data in the Information Age</b> .....	35
---	----

*by George F. McCleary, Jr., and Richard L. Branham*

<b>County Mapping and Mass Markets in America: Early Lessons in the Success of Targeting?</b> .....	37
---	----

*by Michael P. Conzen*

<b>The Strange Case of F. W. Beers and <i>The Atlas of New York and Vicinity</i></b> .....	39
--	----

*by Barbara B. McCorkle*

<b>Mapping a Marketing Strategy</b> .....	45
---	----

*by Dennis Trombatore*

<b>Institutions, Agencies and Organizations</b> .....	49
---	----

<b>Promoting the Map Library: The Scottish View (National Library of Scotland)</b> <i>by Margaret Wilkes</i> .....	49
--	----

<b>The Map Library of The British Library</b> .....	50
---	----

<b>The Geography and Map Division of The Library of Congress</b> <i>by Ralph Ehrenberg</i> .....	51
--	----

<b>Marketing at the National Ocean Service</b> <i>by Peggy Harper</i> .....	53
---	----

<b>Marketing U. S. Geological Survey Maps and Other Earth Science Products</b> <i>by Michael P. McDermott</i> .....	55
---	----

<b>Improving Access to Spatial Data</b> <i>by Duane F. Marble and Der-Tzong Liaw</i> .....	56
--	----

<b>Louisiana Coastal Geographic Information System Network (LCGISN)</b> <i>by Randolph A. McBride, et al.</i> .....	57
---	----

<b>The Mercator Society of the New York Public Library</b> <i>by Alice C. Hudson</i> .....	59
--	----

<b>Birmingham Central Library</b> <i>by Phillip Allen</i> .....	60
---	----

<b>Cartography at the National Geographic Society</b> <i>by John B. Garver, Jr., and Oliver G.A.M. Payne</i> .....	61
--	----

<b>Promoting Map and Spatial Data Use at the Royal Geographical Society</b> <i>by Francis Herbert</i> .....	62
---	----

<b>Promoting the Map Collections of the Newberry Library</b> <i>by Robert W. Karrow, Jr.</i> .....	63
--	----

<b>Promotion in the Commercial Sphere</b> <i>by Erno R. Bonebakker</i> .....	65
--	----

<b>DeLorme Map Co.</b> <i>by Eric Riback</i> .....	65
--	----

<b>Eureka Cartography</b> <i>by John R. Parsons</i> .....	66
---	----

<b>GEOVISION, Inc.</b> <i>by Ken Shain</i> .....	67
--	----

<b>Rand McNally and Company</b> <i>by Con Erickson</i> .....	68
--	----

# Visiting Fellowships

YALE UNIVERSITY

The Beinecke Rare Book & Manuscript Library offers short-term fellowships to support visiting scholars pursuing post-doctoral or equivalent research in its collections. The Beinecke Library is Yale University's principal repository for literary papers and for early manuscripts and rare books in the fields of literature, theology, history, and the natural sciences. In addition to its distinguished general collections, the Library houses the Osborn Collection, noted for its British literary and historical manuscripts, as well as outstanding special collections devoted to American literature, German literature, and Western Americana.

The fellowships, which support travel to and from New Haven and pay a living allowance of \$1,500 per month, are designed to provide access to the Library for scholars who reside outside the greater New Haven area. The length of a grant, normally one month, will depend on the applicant's research proposal; fellowships must be taken up between September 1991 and May 1992. Recipients are expected to be in residence during the period of their award and are encouraged to participate in the activities of Yale University.

There is no special application form. Applicants are asked to submit a résumé and a brief research proposal (not to exceed three pages) to the Director, Beinecke Rare Book & Manuscript Library, Box 1603A Yale Station, New Haven, Connecticut 06520-1603. The proposal should emphasize the relationship of the Beinecke collections to the project and state the preferred dates of residence. The applicant should also arrange to have two confidential letters of recommendation sent to the Director.

The following named fellowships will be among those awarded; there is no special application process for these fellowships.

*The Frederick W. Beinecke Fellowship* in Western Americana

*The H.D. Fellowship* in English or American literature

*The A. Bartlett Giamatti Fellowship*

*The Donald C. Gallup Fellowship* in American literature

*The H. P. Kraus Fellowship* in early books and manuscripts

*The Alexander O. Viator Fellowship* in cartography and related fields

This announcement contains all of the information necessary to complete the application process.

*All application materials must be received by January 15, 1991.*

*Awards will be announced in March 1991*

*for the period September 1991 through May 1992.*

## CORRECTION

The following captions should replace those found in the article by Daniel O. Holmes which appeared in *Meridian 4*.  
Fig. 1. Screen display of search results for topographic maps of a region; textual citations are listed in a spreadsheet and corresponding rectangular geographical footprints are shown on the reference map. Original is in color.

Fig. 2. Screen display showing the linkage between (1) a spreadsheet citation, (2) full citation, (3) footprint using a camera icon at the photopoint, and (4) an image. Original is in color.

Fig. 3. Screen display of a high resolution Thematic Mapper Landsat image with image processing tools for zooming and color manipulation. Original is in color.

## REVIEWS

Publishers are invited to send review copies of their books, maps, and other items to the review editor: Brent Allison, Map Library, S76 O.M. Wilson Library, University of Minnesota, Minneapolis, Minnesota 55455. Manuscripts of reviews should be addressed to the review editor. Readers wishing to review materials for *Meridian* are invited to write the review editor indicating their special areas of interest and qualifications.

## PRODUCTION NOTES

*Meridian 5* was produced on a Macintosh IIfx and a Macintosh SE with 4 Mb RAM, using Aldus Pagemaker 4.0 desk-top publishing software. Articles were either scanned directly into Microsoft Word 4.0, using Omnipage optical character recognition software and a Microtek 300Z scanner, or typed into a Zenith 100 in Wordstar 5.0, and imported to the Macintosh across a TOPS network by Patrick Emerson at the Basic Studies Design Lab. The *Meridian* Globe icons were produced from a scanned template using Adobe Illustrator 1.9.3, and imported as Encapsulated Postscript Files (EPSF) or as a custom typeface created in Art Importer. Page layouts were proofed using a QMS-810 laserprinter and a Laserwriter NTX. The final layout was typeset on a Linotron 300 at the Printing Services of the University of Kansas.

Map Link <i>by Erno R. Bonebakker</i>	69
Marketing and Promoting Maps <i>by Tom Hedberg</i>	69
Promoting Maps: The Role of the Map Retailer <i>by Schera Chadwick and Edward W. Lollis</i>	70
Creative Adventures with Chrismar <i>by Mark Smith and Christine Kennedy</i>	71
Earth Observation Satellite Co. (EOSAT) <i>by Steven Cox</i>	73
Environmental Systems Research Institute <i>by Karen Hunter</i>	74
OSU Map-for-the-PC <i>by Duane Marble</i>	74
IDRISI <i>by Lee Thomson</i>	75
Historic Urban Plans <i>by John W. Reps</i>	76
Grace Galleries, Inc. <i>by Jacqueline Grace</i>	77
Marketing Antique Maps <i>by George Ritzlin</i>	78
The Philadelphia Print Shop <i>by Donald H. Cresswell</i>	80
Newspapers in Education <i>by Joan Henges</i>	80
Kansas City Chiefs Gridiron Geography Program <i>by Brenda Boatright and Robert W. McColl</i>	81
Improve Productivity and Never Get Lost Again! Telemap Personal Routing Service	82
Marketing Map Libraries in Academia <i>by Mary L. Larsgaard and Larry Carver</i>	83
Consider the Use: Oregon Episcopal School <i>by Kate Loggan</i>	84
Promoting the Map Library: Memorial University of Newfoundland <i>by Alberta Auringer Wood</i>	84
Yale University <i>by Barbara B. McCorkle</i>	85
University of Arizona Map Collection <i>by Christine Kollen</i>	87
Teaching Maps: A View from the North of England <i>by Chris Perkins</i>	88
Clark University <i>by Beverly J. Presley</i>	89
University of Minnesota <i>by Brent Allison</i>	90
The OPAC Highway: An On-Ramp for Map Collections <i>by Dennis Trombatore</i>	90
Too Many Map Users: Marketing Can Help <i>by Philip Hoehn</i>	92

## Reviews

Portugal-Brazil: The Age of Atlantic Discoveries <i>Michael Dulka</i>	95
Charting the Chesapeake 1590–1990 <i>Alberta Auringer Wood</i>	96
Atlas of Columbus and the Great Discoveries <i>Carol Urness</i>	97
China's Natural Conservation Atlas <i>Alan H. Moore and Fan Jian</i>	98
Envisioning Information <i>J. B. Post</i>	99
A Cartobibliography of Separately Published USGS Special Maps <i>Jim Coombs</i>	100
Helping Your Child Learn Geography <i>Carol Gersmehl</i>	101
Atlas of the World, 6th Edition <i>Charles A. Seavey</i>	102
World and Man: Geographical Atlas <i>Ruth Ann Rapp</i>	103
The National Gazetteer of the U. S. A. United States Concise 1990 <i>Bart Austhof</i>	104

## Et cetera

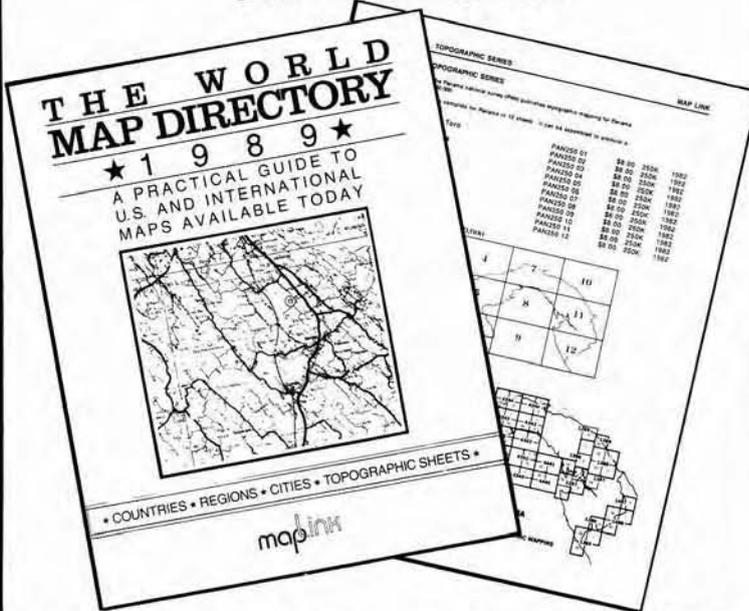
Index to Advertisers	4
Circular A-16 Revised	43
Marshall Islands Commemorative Stamp	48
New Color Satellite-Image Map Published	64
A Century of Service: The U. S. Board on Geographic Names <i>by Bart Austhof</i>	106
Carter, Tennessee and Seneca, Oregon	107
Contributors to <i>Meridian 5</i>	108
Tools of the Trade 1: A Reference Collection For Western Canada <i>by Frances Woodward et al.</i>	109
Tools of the Trade 2: The Natural Scale Indicator <i>by Frank Stern and Clifford Wood</i>	111
A Final Word <i>by Jenny Marie Johnson</i>	112

# maplink

Map Link Imports and distributes maps from around the world

- over 46,000 titles in stock
- topographic series for over 60 nations
- thousands of city plans
- thematic maps, atlases, globes and related products

## JUST PUBLISHED:



## THE WORLD MAP DIRECTORY

ISBN 0-929591-00-3

ISSN 1040-1687

**\$29.95**

This 278-page Directory lists over 10,000 maps currently in print and available in the United States. It identifies publishers, prices, dates and scales for each map. The Directory is a complete, up-to-date reference tool, updated annually. The Directory also serves as a catalog. Every map is in stock and available from Map Link.

**CLIP OR COPY THIS AD AND RECEIVE A 20% DISCOUNT ON YOUR ORDER.**

Map Link  
25 East Mason  
Santa Barbara, CA 93101  
(805) 965-4402

## ADVERTISING STATEMENT

*Meridian* accepts advertising of products or services as it improves communication between vendor and buyer. *Meridian* will adhere to all ethical and commonly accepted advertising practices and reserves the right to reject any advertisement deemed not relevant or consistent with the goals of the Map and Geography Round Table. Enquiries should be addressed to David A. Cobb, Advertising Manager, Map & Geography Library, University of Illinois, 1408 West Gregory Drive, Urbana, Illinois 61801. Phone (217) 333-0827.

## SUBSCRIPTIONS

*Meridian* is published twice yearly. To subscribe, or to change an address, please write to Christine E. Kollen, Subscription Manager, Map Collection, University of Arizona Library, Tucson, AZ 85721. Subscription rates are \$20.00 for individuals; \$25.00 for institutions. Add \$5.00 for foreign subscriptions. Individuals must prepay, institutions may be billed. All foreign subscriptions must be paid in U.S. dollars. Make your checks payable to ALA/MAGERT.

## PURCHASING BACK COPIES

We welcome your orders for back issues of *Meridian*. They may be obtained for \$10.00 each (\$12.00 foreign) by writing to Kathryn Womble, University of Washington, Suzzallo Library, FM-25, Map Collection, Seattle, WA 98195. (206) 543-9392.

## INDEX TO ADVERTISERS

American Library Assn.	Inside Back Cover
Richard B. Arkway, Inc.	Inside Cover
Art Source International	68
GeoScience Resources	6
Great West Books	44
Map Link	4
Martayan Lan	Back Cover
J. T. Monckton Ltd.	Inside Back Cover
George Ritzlin	38
U. S. Government Printing Office	38
Verlag Gesellschaft	94
Yale University	2

## MERIDIAN

A Semi-annual Journal of the Map and Geography Round Table  
© American Library Association ISSN: 1040-7421

## Welcome to *Meridian* 5.

On the pages that follow you will find the results of a wide variety of creative energies. While Gary North has crafted an elaborate report about the first American visit to Russian cartographic establishments, the balance of the issue draws upon the ideas of dozens of people. North reports on a venture which was inconceivable only a few years ago. The others address a continuing problem, one common to all of us: How to promote the use of maps and other spatial data.

How does someone gather together the many different approaches which entrepreneurs, archivists, cartographers, librarians and other information specialists employ to promote, advertise, and market their products and services? As an editor, you turn first to the editorial and advisory boards; from this collection of scholars and practitioners emerged not only a number of articles but also a whole list of suggestions for other potential contributors.

Thus, in the midst of summer vacations and while confronting the relentless demands of professional and personal responsibilities, the contributors set down their ideas about promotion and marketing. The variety of their situations is exciting; these range from small to large libraries, from general to specialized collections and include an array of commercial producers, map dealers, and government agencies as well. The principal contribution of this collection appears to lie in the inventory of ways in which the tasks of promotion are handled. Woven into this common motive are a range of ideas among which there should be at least one which, in one way or another, will be useful.

In the short time available, these authors have ventured into operational territory which will be explored further in other issues of *Meridian*. Not surprisingly, there was much discussion about computer-supported mapping, digital data bases, and geographical information systems. It appears likely that entire issues of *Meridian* will be devoted to these topics and the problems associated with them in the years to come. Even though they are having and will continue to have a major impact on all aspects of maps and map use, they are not the only significant issues which face the cartographic community as we approach the twenty-first century.

The new technology will share the pages of *Meridian* with a wide array of other topics. We hope to explore maps and mapping activities which mirror different times and places, to gain insight into the life and times of our predecessors as well as other cultures.

It is the goal of *Meridian* to continue the tradition of scholarship which has characterised not only this journal but also the other journals which support "the map business." I expect, however, that we shall do so in different and, hopefully, innovative ways. *Meridian* is a forum where any issue, idea, concept or problem involved and associated with maps and mapping will be explored. We are here to work with you — to help you gain the information that you need — to help you present your ideas to others.

As the editor, I do not want to be at some remote point in a publication chain, but rather in the midst of "the map business," interacting with the diverse population of *Meridian* readers. I see *Meridian* as an opportunity both to work with you and to serve your professional and avocational interests. If you have a suggestion, an idea, a complaint or whatever, let me know about it. We shall try to help you develop it in whatever way we can.

Start with *Meridian* 6, the June 1991 issue. It will focus heavily on Atlanta (site of the ALA meetings), Georgia, the South, and related environs, their maps and mappers, their collections and producers. Please convey any and all suggestions to me, a member of the editorial board, or one of the consulting editors. The sooner we know about your ideas, the more likely we shall be able to do something about them. Articles, reviews, and other contributions will be due 1 March 1991.

George F. McCleary, Jr.

# MERIDIAN

**George F. McCleary, Jr.**  
University of Kansas

## COPY EDITOR

**Jenny Marie Johnson**  
University of Washington

## REVIEW EDITOR

**Brent Allison**  
University of Minnesota

## PRODUCTION MANAGER

**Donna P. Koepp**  
University of Kansas

## PRODUCTION COORDINATORS

**A. Dwight Burnham**  
**Nikolas H. Huffman**  
University of Kansas

## SUBSCRIPTION MANAGER

**Christine Kollen**  
University of Arizona

## ADVERTISING MANAGER

**David A. Cobb**  
University of Illinois

## DISTRIBUTION MANAGER

**Kathryn Womble**  
University of Washington

## EDITORIAL BOARD

**Ralph E. Ehrenberg**  
Library of Congress

**Philip Hoehn**  
University of California, Berkeley

**Alice C. Hudson**  
New York Public Library

**Mary L. Larsgaard**  
University of California, Santa Barbara

**Robert S. Martin**  
Louisiana State University

**Charles A. Seavey**  
University of Arizona

**Stanley D. Stevens**  
University of California, Santa Cruz

## CONSULTING EDITORS

**Helen Jane Armstrong**  
University of Florida

**Tony Campbell**  
British Library

**Larry Carver**  
University of California, Santa Barbara

**Michael P. Conzen**  
University of Chicago

**Edward H. Dahl**  
National Archives of Canada

**Larry Cruse**  
University of California, San Diego

**John B. Garver, Jr.**  
National Geographic Society

**Francis Herbert**  
Royal Geographical Society

**Robert W. Karrow, Jr.**  
Newberry Library

**Barbara B. McCorkle**  
Yale University

**John T. Monckton**  
J.T. Monckton Ltd., Chicago

**Gary W. North**  
United States Geological Survey

**Nancy J. Pruet**  
Sandia National Laboratories, Albuquerque

**Norman J.W. Thrower**  
University of California, Los Angeles

**Alberta Auringer Wood**  
Memorial University of Newfoundland

**Frances Woodward**  
University of British Columbia

# Geoscience Resources

For all of your map needs

## New Arrivals: Topographic Maps

<b>Brazil</b>	<b>Czechoslovakia</b>	<b>Morocco</b>
1:50,000	1:25,000	1:50,000
1:100,000	1:50,000	1:100,000
1:250,000	1:100,000	1:250,000
1:1,000,000	1:250,000	
<b>Hungary</b>	<b>East Germany</b>	<b>Poland</b>
1:10,000	1:10,000	1:50,000
1:25,000	1:25,000	1:100,000
1:100,000	1:50,000	
1:200,000	1:100,000	
	1:200,000	

## New Arrivals: Atlases

64-2644	<b>Canada--National Atlas</b>	\$149.95
64-4048	<b>China--Atlas of P.R. China</b>	\$29.95
64-5348	<b>Ethiopia--National Atlas</b>	\$199.95
64-7447	<b>Hungary--National Atlas</b>	\$159.95
64-74475	<b>Hungary From Space Atlas</b>	\$49.95
65-0145	<b>Mexico--Physical Atlas</b>	\$295.00
65-0146	<b>Mexico--Historical Map Atlas</b>	\$245.00
65-0149	<b>Mexico--Topographic Atlas</b>	\$295.00
65-1448	<b>Panama--National Atlas</b>	\$159.95
65-1745	<b>Peru--National Atlas</b>	\$299.95
65-3190	<b>USSR--Atlas</b>	\$44.95
65-3342	<b>Sri Lanka--Hydrogeochemical Atlas</b>	\$59.95

## New Arrivals: Geologic Maps

<b>Argentina</b>	<b>Brazil</b>	<b>Bulgaria</b>
<b>China</b>	<b>Iran</b>	<b>Kenya</b>
<b>Peru</b>	<b>Romania</b>	<b>USSR</b>

---

**Geoscience Resources**  
P.O. Box 2096  
Burlington, NC 27216-2096  
Telephone: 800-742-2677  
Fax: 919-227-3748

## INFORMATION FOR CONTRIBUTORS

*Meridian* is published semi-annually by the American Library Association's Map and Geography Round Table. It contains articles which advance the organization and dissemination of cartographic, geographic, and remote sensing information collections; and describe and document the trends and issues in cartographic and geographic librarianship. Persons interested in the objectives of the Map and Geography Round Table are invited to submit manuscripts to the Editorial Board for consideration. Full-length manuscripts as well as shorter commentaries, research notes and letters should be addressed to:

George F. McCleary, Jr.,  
Department of Geography,  
University of Kansas,  
Lawrence, Kansas 66045-2121.  
Telephone 913-864-5540.  
Fax 913-864-5376.  
Bitnet MCCLEARY @ UKANVM.

*Format.* Manuscripts should be submitted on 3.5- or 5.25-inch floppy disks with one paper printout. Papers should be double-spaced on white 28 x 22 cm paper with 2.50 cm margins on all sides.

*Cover letter.* Accompany each manuscript with a letter which includes names, titles, institutional affiliations, telephone and fax numbers of the author(s), and a statement that the material has not been published and is not under consideration for publication elsewhere. Include copies of papers in press or under consideration elsewhere if they include information helpful in the evaluation process.

*Review of Manuscripts.* Manuscripts will be reviewed by the editor. Selected manuscripts are then submitted to at least two readers for further review. Reviewers consider the style and content of the manuscript, giving weight to organization, writing style, originality, importance to the literature, methodology employed, and the author's investigative thoroughness.

*Publication.* Manuscripts accepted for publication may be edited to conform to the style of the journal. The editor may recommend changes to the author.

A complete copy of these guidelines is available from the editor.

# Cartographic Glasnost

Gary W. North  
U.S. Geological Survey

## INTRODUCTION

During the first two weeks of August 1989, a delegation from the U.S. Geological Survey (USGS) and the National Oceanic and Atmospheric Administration (NOAA) visited the Soviet Union as guests of the Main Administration of Geodesy and Cartography (GUGK) of the U.S.S.R. Council of Ministers. The delegation consisted of:

Lowell E. Starr, Chief of the USGS National Mapping Division

Roy R. Mullen, Associate Chief of the USGS National Mapping Division

Joel L. Morrison, Assistant Division Chief for Research in the USGS National Mapping Division

Gary W. North, Assistant Division Chief for Information and Data Services in the USGS National Mapping Division

Allen H. Watkins, Chief of the USGS National Mapping Division's EROS Data Center

Wesley V. Hull, Director of the Office of Charting and Geodetic Services of the National Oceanic and Atmospheric Administration

This article is both a report about the cartographic facilities and operations that the delegation saw during their visit and a set of personal observations, stories, commentaries on tourist attractions, and reflections on Soviet society and life-style. These observations and commentaries are printed in italics.

## PURPOSE

The GUGK is responsible for a wide range of activities in mapping, cartography, remote sensing, and geodesy. The specific objectives of this first visit by U.S. mapping and geodesy personnel to Soviet mapping and cartographic facilities were to:

1. Meet with our mapping and geodesy counterparts for the first time.

2. Establish contacts and discuss our respective mapping operations.

3. Learn about mapping in the Soviet Union.

4. Visit Soviet map production and remote sensing facilities.

5. Assess the Soviet capabilities in cartography, geodesy, photogrammetry, remote sensing, geographic information systems, printing, distribution, and advanced cartographic systems.

6. Discuss the availability of cartographic and geographic information.

## BACKGROUND

In July 1988, at the meeting of the International Society of Photogrammetry and Remote Sensing, in Kyoto, Japan, Roy Mullen of the USGS was approached by Soviet delegates about an exchange of visits between USGS and GUGK mapping officials.

After discussions with State Department officials, it was agreed that such an exchange could take place upon receipt of an official invitation from the GUGK and under the conditions that each country would be responsible for their own transportation to and from the host country and that the host country would cover all other costs of the respective delegation.

In November 1988, Dr. Dallas Peck, Director of the USGS, received an invitation from Dr. Victor Yashenko, Chief of the GUGK, for a delegation of the USGS mapping officials to visit the Soviet Union to discuss experiences in mapping.

In January 1989, while attending the Fourth United Nations Regional Cartographic Conference for the Americas, Lowell Starr and Gary North of the USGS met with Soviet delegates Alexander Drazjuk and Valery Moskalenko of the GUGK to discuss the details of the first exchange.

This article is both a report about the cartographic facilities and operations...and a set of personal observations, stories, commentaries...

...it was agreed that such an exchange could take place upon receipt of an official invitation from the GUGK...

As a result of these discussions it was decided that:

1. The U.S. delegation would travel to the U.S.S.R. in either late July or early August 1989.
2. The delegation would visit a selection of facilities in Moscow, Leningrad, Minsk, and Kiev.
3. If time allowed, a visit to provincial production facilities might also be possible.
4. A wide range of topics would be covered.
5. The United States delegation would include an expert in geodesy from NOAA because USGS does not have the primary U.S. Government responsibility in geodesy.
6. There would be six people in the delegation.

In July 1989, Dr. Yashenko confirmed the Soviet invitation for the U.S. delegation to visit during the first two weeks of August

and proposed an agenda which included trips to GUGK operations in Leningrad and Minsk as well as Moscow.

**MOSCOW, July 30–August 1, 1989**  
**Sunday July 30, 1989**

On July 30, 1989, the six-man delegation arrived at Sheremetyevo Airport in Moscow and was met by:

Alexander Drazhnik, First Deputy Chief of the GUGK

Yuri Loginov, Deputy Chief of the GUGK

Rudolf Kazakov, Deputy Director General of the Foreign Trade Association, Sojuzkarta

Victor Semyonov, Chief of the GUGK's Foreign Relations Department and Interpreter

After spending a couple of hours at the airport looking for lost luggage we

On July 30, 1989, the six-man delegation arrived at Sheremetyevo Airport in Moscow...



Figure 1. St. Basil's Cathedral.



Figure 2. 1:30,000-scale city plan of Moscow.

proceeded to the Hotel Leningradskaya and registered. The delegation met our Russian hosts in the hotel dining room for lunch where we reviewed the program planned for the next two weeks. Following this discussion we were taken on a tour of the Kremlin grounds and Red Square and returned to the hotel.

### **The Kremlin**

*The Kremlin remains today the fortress that it has been for centuries. Sitting on Borovitsky Hill overlooking the Moscow River, it is the heart of the city. The red brick walls and towers stand in sharp contrast to the bright yellow buildings that are located inside. When you enter one of the many gates or tower entrances you realize that the Kremlin is a complex of many buildings. There are buildings for the Council of Ministers, the Supreme Soviet, and their Congress. The Kremlin's Cathedral Square is a plaza surrounded by five churches. Their beautiful gold domes and unique architecture make them tourist attractions by themselves. The Kremlin is the home for many of the country's most beautiful and treasured art objects. Throughout the complex you see a cross section of the Soviet people, moving with their tour guides from place to place. Two popular stops are at the world's largest cannon and the largest bell.*

### **Red Square**

*At the foot of Arsenal Tower on the west side of the Kremlin is the Tomb of the Unknown Soldier, consisting of a simple bronze regimental banner and helmet lying on a marble pedestal behind an eternal flame. A black granite tombstone bears the inscription, "Thy name is unknown, thy feat immortal."*

*After passing the tomb you climb a hill to reach Red Square. As you walk up the cobblestone street, St. Basil's Cathedral seems to rise up out of the pavement and grow in size. The square is dominated by the GUM department store on one side and the Kremlin wall on the other. Standing in front of the wall is Lenin's Tomb, an edifice of highly polished red marble. At the slightly opened door to the tomb stand two guards who remain motionless for their 1-hour tour. At 5 minutes before the hour two replacements and a sergeant of the guard march out of the Kremlin clock tower, reaching the door to begin their shift at the striking of the hour.*

*The dominant feature of Red Square is the Cathedral of the Intercession (the Church of St. Basil the Blessed). With its multicolored domes, gold crosses, and hand-painted wooden entrances, it dominates the eastern end of the square. History tells us that once it was completed, the designer was called before the czar and*

**The red brick walls and towers stand in sharp contrast to the bright yellow buildings that are located inside.**

**St. Basil's Cathedral seems to rise up out of the pavement and grow in size...**



Figure 3. The Kremlin.

Crowds of colorfully dressed parents, children, and tourists press into the square to watch the changing of the guard...



Figure 4. Young Soviet enjoys a special vantage point.

*asked whether he could build another one just like it. When the architect said he could, the czar ordered that both his eyes be removed. It stands today, unmatched, for all to see and marvel at its beauty.*

*Crowds of colorfully dressed parents, children, and tourists press into the square to watch the changing of the guard, which takes place 24 times a day. As you wait to see the ceremony you may be approached by someone selling Russian Army watches or Perestroika t-shirts. Looking around, your gaze may be drawn to the letters and numbers painted on the cobblestones. These are the guides and position markers for the troops and vehicles that parade through the square on May Day.*

*A visit to Red Square at night is also very beautiful. The red flags, gold crosses, and red bricks and marble all appear different after the sun goes down.*

**Monday, July 31, 1989**

On Monday morning we met in Dr. Yashenko's office for a briefing on the

GUGK. Dr. Yashenko had planned to be on vacation but returned to Moscow to meet with us. Also present were Drazjnik, Loginov, Semyonov, and Evgeny Gromov, the Director of the Moscow Aerogeodetic Enterprise. We were given a general introduction on how the GUGK is organized and how they operate.

**Main Administration of Geodesy and Cartography (GUGK)**

The Main Administration of Geodesy and Cartography is under the supervision of the U.S.S.R. Council of Ministers. In addition to Yashenko there are three deputies, with Drazjnik being the First Deputy. They characterized the Administration as small in terms of Soviet ministries, but it has 60,000 employees. The 170 people that comprise the headquarters group and manage the Administration are located in Moscow.

We were each presented with a notebook commemorating the 70th anniversary of the Russian Revolution. The book contains a decree written in March 1919 by Lenin that authorized the government to produce geodetic and surveying equipment and to map the country. Some geodetic and surveying equipment is also made by other ministries but most rely on instruments produced by the GUGK.

**Enterprises**

The U.S.S.R. has a population of approximately 286,000,000 people who live in an area of 22.4 million square kilometers. To map this vast area there are 25 enterprises located throughout the country. Each of the enterprises employs approximately 2,000 people, although some newer ones are smaller. Field offices attached to these enterprises are called Expeditions.

The Moscow Aerogeodetic Enterprise, for example, employs 3,000 people and conducts field work and coordinates all stages of the basic surveying operations. While the Moscow Enterprise prepares products and undertakes special projects in the northern areas of the country, the Northwest Geodetic Enterprise in Leningrad is responsible for the work in the Arctic and Antarctica. It is also responsible for work done in support of mining



Figure 5. Waiting for the changing of the guard at Lenin's Tomb in Red Square.

surveying, and it performs echo sounding surveys on the continental shelf.

There are eleven cartographic or map factories throughout the country. These facilities all have the capability to print maps and atlases at scales ranging from 1:2,000 to 1:1,000,000. These map factories are also responsible for all other geographic and small-scale maps and print tourist and educational products. Most of their printing equipment is imported from East Germany.

### **Central Scientific Institute for Geodesy and Cartography - Moscow**

The Central Scientific Institute for Geodesy and Cartography in Moscow works closely with the Enterprise in Leningrad that makes instruments, aerial and space cameras, and stereoplotters. The cameras for the Mir spacecraft are made there. In the fall of 1989, these space camera systems were replaced with new cameras with higher resolution and image motion compensation capabilities. Professor Rossina, of the Leningrad Enterprise, designs the lenses and has received a State award for his efforts.

### **State Center - Priroda**

The Priroda Center which is responsible for processing, storing, and reproducing all of the space images from the Cosmos and Mir spacecraft is also located in Moscow. The Russian word *priroda* means nature.

The Center handles six Cosmos satellite launches per year. These unmanned vehicles operate at an orbital altitude of 270 kilometers for 20–22 days. The cameras and the film are then returned in landing modules. The KFA-1000 camera used in the Cosmos series has a 1,000-millimeter focal length lens and produces images with 5-meter resolution. The scale of the photographs is 1:270,000. The frame size is 300-by-300 millimeters, which covers an area on the ground of 80-by-80 kilometers with a longitudinal overlap of 60 percent. The spectrozonal film ranges are 570–680 nano-meters and 680–810 nanometers. The Cosmos missions use two KFA-1000 cameras to record images of areas left and right of the axial line of movement. These images are 8 degrees off vertical and can be used in stereoscopic

instruments. This camera is also reported to be capable of producing 1-meter data.

The two other cameras used in these spacecraft are the MKF-4 and the KATE-200. The MKF-4 has four lenses, each of which covers the same area on the ground. The images include three black-and-white pictures in three spectral ranges and one photograph on a two-layer color spectrozonal film. The possible spectral ranges are 635–690, 810–900, 515–565, 460–505, 580–800, and 400–700 nanometers. The frame size is 180-by-180 millimeters, which covers an area on the ground of 117-by-117 kilometers or 216-by-216 kilometers. The longitudinal overlap is 60 percent and the scale of these photographs is 1:650,000 to 1:1,200,000 at a resolution of 6–8 meters.

The KATE-200 camera takes photographs in three spectral ranges, at 500–600, 600–700 and 700–850 nanometers. The frame size is 180-by-180 millimeters, which covers an area on the ground of 243-by-243 kilometers. The longitudinal overlap is 60 percent and the scale is 1:1,350,000 at a resolution of 15–30 meters.

The Soviets explained that the quality of the photographs was not always good because of the weather and the fact that they do not have motion compensation on the cameras. The main purpose for collecting these data is for mapping the U.S.S.R., and wide use of the data is made by other ministries and agencies, particularly for geologic mapping and land reclamation work.

### **1:25,000-Scale Mapping**

The largest scale map series completely covering the U.S.S.R. is the 1:25,000-scale series. These maps are made from photographs taken from space or an AN-30 aircraft that has an operational altitude of 7 kilometers. High mountainous areas are impossible to photograph using this aircraft. Consequently, space photos are used for mapping some islands, peninsulas, and the higher terrain areas. All of the flying is done by the Ministry of Civil Aviation. The optics and cameras were developed by the 150 people at the Institute in Leningrad.

The 1:25,000-scale maps are line maps, not image-based products. We asked about the total number of sheets and were told

The KFA-1000 camera used in the Cosmos series has a 1,000-millimeter focal length lens and produces images with 5-meter resolution.

The largest scale map series completely covering the U.S.S.R. is the 1:25,000-scale series.

that the numbers vary because there are double and quadruple quadrangles in the northern latitudes because of the convergence.

#### **Other GUGK Facilities**

Several other facilities were described during this introduction to the Main Administration, two of which were a Scientific Research Institute specializing in applied geography in Novosibirsk and a photogrammetric instrument plant in the Ukraine. The Ukrainian facility is only 2–3 years old and has about 1,000 employees. Known for their high-precision theodolites and leveling devices, they manufacture stereoscopes and underground surveying equipment and are now starting to make stereoplotters as well.

Two Production Institutes in Kiev and Armenia were also mentioned. They do large-scale surveys and applied geodetic surveys for construction and road building.

Dr. Yashenko also discussed the 50 seismic testing sites that have been set up throughout the country and are repeatedly remeasured. This work is carried out in conjunction with the Soviet Academy of Sciences and the Ministry of Geology. The Soviets conduct work in cooperation with Central and Eastern European countries on crustal movement, earthquakes, and earthquake prediction. They spoke proudly of producing a map showing over one foot of crustal movement in the area of the most recent Armenian earthquake. Apparently this product did not receive much attention until after the earthquake.

#### **Technical Schools and Institute**

To provide the work force for their cartographic and geodetic enterprises, the Ministry of Education, in conjunction with the GUGK, operates nine technical schools with over 7,000 students and faculty. These technical schools provide medium level training for surveyors, geodesists, and photogrammetrists. This training follows ten years of general education, although they sometimes accept students with only eight years of general education. In this instance, the students attend the institutes for four years rather than three.

The schools are located in large cities. The Moscow Institute of Geodesy, Aerial

Surveying and Cartography, however, is the only one that trains students for aerial surveying. This Institute is headed by Cosmonaut Victor Savinykh who flew on Soyuz Missions 6 and 13. He has been honored twice as a Hero of the Soviet Union and also is an elected member of the Supreme Soviet representing his hometown of Kirov. He graduated from the Institute prior to becoming a cosmonaut and is presently the Rector.

During the summers between their first two years of schooling, the students do field work. This past year there were over 4,000 students working in the field. Between the second and third years the students are sent to work in one of the many Enterprises so that upon graduation they will have experience both in the field and in office production procedures.

#### **Closing Remarks**

Following the briefing on the GUGK, Dr. Yashenko discussed what was happening in the U.S.S.R. under Perestroika, which means restructuring, and Glasnost, which means openness. He stated that up until 1989 our visit would not have been possible. He also mentioned that in January 1989 they were allowed to begin the declassification and internal release of their 1:500,000– and 1:200,000–scale maps. Under Perestroika, new organizations such as Sojuzkarta have been established.

Sojuzkarta is a foreign trade association that has been established to market and sell Soviet cartographic products worldwide. The association is located jointly with the Moscow Aerogeodetic Enterprise and the Priroda Center in Moscow. It has a staff of 35 people and concentrates on selling space photographs. Sojuzkarta will also contract for services, make maps from space images, sell Soviet produced instruments, and, more recently, will handle and sell the Soviet maps that can be released. They also handle world atlases and children's atlases in several languages. French and English language product catalogs are available.

#### **Visit to the Moscow Aerogeodetic Enterprise**

Dr. Gromov escorted us from GUGK

Known for their high-precision theodolites and leveling devices, they manufacture stereoscopes and underground surveying equipment...

They spoke proudly of producing a map showing over one foot of crustal movement in the area of the most recent Armenian earthquake.

Sojuzkarta is a foreign trade association that has been established to market and sell Soviet cartographic products worldwide.

headquarters to his enterprise, which is also called State Enterprise No. 7. We were joined by both his deputy and Genovard Terekhova, Manager of the Research Division.

### **Offices**

*Almost all of the offices we were in were furnished in a similar way. The wooden furniture, bookcases, and paneling were all light-colored. The layout always included a desk with two telephones, a conference table, and several extra chairs. The bookcases often had glass doors and usually included trophies, art objects, or surveying instruments. On the wall there was always a map of the U.S.S.R. and pictures of various sections of the country. There were usually two secretaries in an outer office adjacent to the main office. The wood-tiled floors were generally covered with a beautiful floral patterned rug.*

The main mission of the Moscow Enterprise is to conduct geodetic surveys and support local administrations. There are eight Expeditions, two of which are in the Central Region of the country. Each Expedition has 200–220 people with an annual budget of 1 million rubles (\$1,623,000).

Two of these Expeditions are in cold weather areas. One deals with special geodetic engineering and the other with gravimetry for the country and abroad. Their absolute gravimeters have an internal precision of about 10 microgals. The Moscow Enterprise also carries out special programs in cooperation with the International Geophysical Union.

Most of their equipment, pendulum levels and some spirit levels, as well as stereoplotters, and theodolites is produced in the U.S.S.R. They also import German equipment from companies such as Zeiss Jena.

Other organizational components of the Moscow Enterprise include: Administration, Transportation, Repair, Meteorological Lab, Technical Lab, Research Lab, and a section that handles social problems and activities. The Director's responsibilities include running the cafeteria, providing personal amenities such as a sauna, and

managing the Black Sea vacation facilities operated by the Enterprise. There is also a quality control and inspection component in the Enterprise.

### **Geodetic Network**

The geodetic network of the Soviet Union consists of 200,000 first- and second-order control points and 300,000 third- and fourth-order points, with the base of the network located near Leningrad. From Brest to the Kamchakta Peninsula there are only 8 meters of error over the 8,000 kilometers.

During the course of a year about 80–100 marks are destroyed in the Central Region alone. They have the same problems with benchmark maintenance that we do.

### **Canal Life and Soccer**

*Following the opening day meetings we went for a boat trip on the Moskvya Canal. It was a hot sunny day without a cloud in the sky. All along the canal there were children and adults swimming and enjoying the sunshine. Some were fishing, others were sailing, rowing, or wind surfing. Children and dogs were jumping off the banks. At one bridge the children swung out over our boat on a rope. There were sunbathers everywhere, including some who seemed to have forgotten their bathing suits. Walkways and bicycle paths approached the canal from all directions, and cows, goats, and dogs were mixed in with the rest. Life seemed very peaceful and the people very content as we sailed along enjoying our caviar, smoked salmon, and other delicacies.*



Figure 6. Young swimmers along Moskva Canal.

The Director's responsibilities include running the cafeteria, providing personal amenities such as a sauna, and managing the Black Sea vacation facilities...

Life seemed very peaceful and the people very content as we sailed along enjoying our caviar, smoked salmon, and other delicacies.

With Yevgeny Gromov as the referee, the first USA/ USSR cartographic soccer match was underway.



Figure 7. The statue of Yuri Gagarin at Star City.

*At the turnaround point on the canal the boat docked and we took a walk in the dense forest. We strolled down a dirt path noting the firs, birches, and black and grey crows. Soon we came upon a clearing that included chinning bars, picnic tables, and a soccer field. One of the party found a soccer ball in the bushes, and the next thing we knew, Starr and Yyassenko were choosing up sides for a match. With Yevgeny Gromov as the referee, the first USA/ USSR cartographic soccer match was underway. The sides were evenly matched, with Americans and Russians on each team. When the game was over, Starr's team had won by a score of 2 to 0, and everyone collapsed in the heat. Starr jammed his knee (and recently had orthoscopic surgery), Gromov nursed a black eye from being hit at close range by the ball, and ripped clothing and broken shoe straps were common. For some, a quick plunge into the river was the best way to cool off.*

*This event was truly an icebreaker for the two groups.*

#### **Tuesday August 1, 1989**

On Tuesday morning the group traveled to Zviozdney (Star City) where the active cosmonauts live and train. The area is adjacent to an airfield and includes the living quarters, stores, medical laboratories, training facilities, a centrifuge, an observatory, a large water tank, and a visitor center.

#### **Roads**

*This was our first trip outside the city and two of the things we first noticed were the roads and dachas. Soviet roads are heavily traveled and, because of the stresses of winter, they can be very rough. At intersections several sets of electric trolley tracks are set in the cobblestones. These grey and well-worn stones are about four times as large as our bricks and can create interesting obstacles when they heave and move out of position. Outside the city there were three or four lanes of traffic competing for the two paved center lanes. Most of the competition was from large trucks.*

#### **Dachas**

*Beyond the ring road around the city the landscape changes and hundreds of small, brightly colored wooden houses are visible.*

*They are close to the road and have flower gardens and vegetable patches rather than lawns. The windows and roofs have beautifully sculptured woodwork, and the shutters have scrollwork painted in contrasting colors. Everywhere there are pathways with people walking and many pushing baby carriages.*

The tour began with a visit to Yuri Gagarin's statue where cosmonauts come before and after each flight. It is said that they spend several hours there, after a mission, reporting on their flight.

#### **Gagarin's Statue**

*The statue is very impressive in its simplicity and has open space around it. His apartment, where his widow still lives, stands behind it, and flowers are always present at its base. During a visit, Neil Armstrong is quoted as saying, "Yuri led the way for all men to follow on the road to space."*

At the training facility we were briefed on the history of Soviet space efforts and shown several space suits, their waste management system, and the couches that are used in the landing vehicle. In a large training room we saw mock-ups of the Mir and Salyut spacecraft, a new earth-resources module that was launched in early 1990, and the landing module.

Next we visited the building that contains the centrifuge. The unit was made in Sweden and is used for applications other than cosmonaut training. The numerous nicks in the floor were caused by the ceiling tiles being ripped off the first time the arm was brought up to full speed. The inside of the building had to be remodeled before they could operate the centrifuge.

Our trip to the visitor center included a guided tour of the museum and a visit to the restored office of Cosmonaut Yuri Gagarin, which has been kept as part of the museum. We were also shown mementos provided by American astronauts. After lunch at the center, we returned to Moscow, stopping to visit a small church on the outskirts of the city.

#### **Star City**

*The complex is very complete with its*

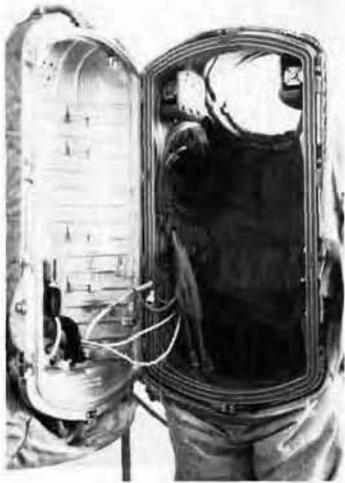


Figure 8. New Soviet Space Suit.

The new space suit for extravehicular activities will fit a cosmonaut of any size.

shops, apartments, schools, and recreation facilities. At the time of our visit there were approximately 100 cosmonauts in training including many from other countries.

The first building we visited was the training facility where we were taken to an elevated room with large glass windows that looked down on the Mir training module and return capsule. The new space suit for extravehicular activities will fit a cosmonaut of any size. This is accomplished by having flexible joints at the shoulders and hips. Consequently the only unique equipment for each person is gloves, which they are allowed to keep after their mission.

We noted one big difference in the hardware between our two countries, and that is in the area of computerization and miniaturization. The control panels, for example, were far less complex than U.S. versions.

The Soviet Space Museum does not include hardware, with the exception of a Sputnik model and a return capsule. The cases include many personal items from each cosmonaut, such as their medals, awards, and newspaper publicity items.

### Moscow Institute of Geodesy, Aerial Surveying and Cartography (MIIGAİK)

After returning to Moscow we went directly to the Moscow Institute of Geodesy, Aerial Surveying and Cartography. We were briefed by the Director of International Relations, Sergei Marfenko, the Director of Scientific Work, Yambajev Kajumovich, and Budna Krasnopertseva, who had worked on the 1988 Phoebus project. The Rector of the Institute, Cosmonaut Victor Savinykh, was in Italy at the time of our visit.

The Institute has 3–4,000 full-time students and approximately 1,000 part-time students. The male-female ratio is 1 to 1. In addition there are 350 foreign students and 50 postgraduates, with approximately 1,000 faculty and staff.

The curriculum includes traditional geodesy, applied geodesy, aerial surveying, cartography, and the newer disciplines of natural resource remote sensing and space geodesy, as well as optical specialties. Students are trained for either full-time or part-time work.

The program maintains a balance of theory and practical studies. The three-year

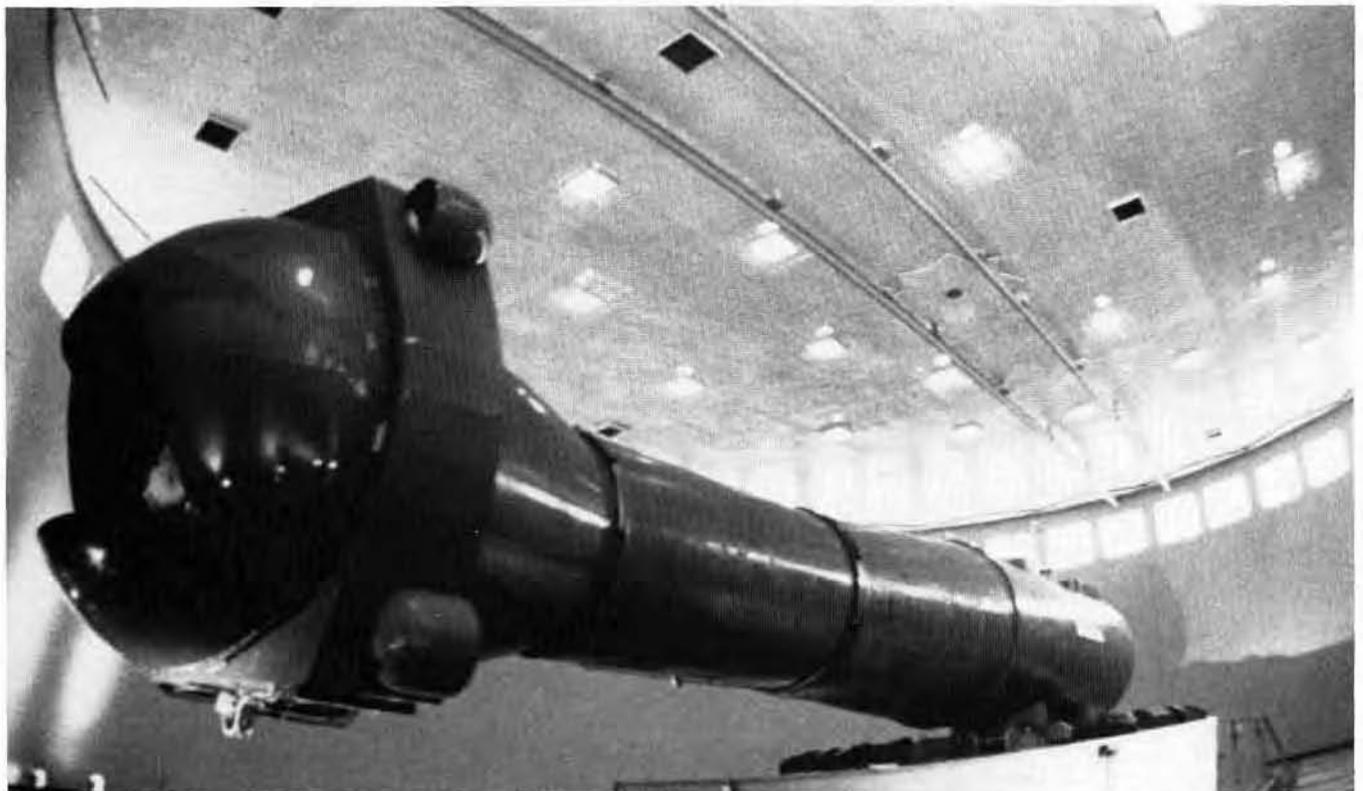


Figure 9. The centrifuge.



Figure 10. Soyuz spacecraft docked with Mir Spacestation.

Instructors do not have the capability to cover geographic information systems in any depth, but the topic is discussed in both the aerospace interpretation and the natural resource remote sensing courses.



Figure 11. MIIGAIK classroom surveying station.

programs include laboratory, field and practical work, as well as production experience. Forty percent of the students go on to work with the GUGK; the balance are employed by other geodetic surveying organizations and building construction groups.

There are two major problems: not being able to keep up with progress in science, and managing the leisure time of the students. They also stated that they do not have adequate computers. We did see one AT-class personal computer in the Institute; it had been purchased from Singapore.

A visit to the computer room showed us where they stand in terms of this technology. The computer was 10-12 years old (vintage pdp-11). The room had no air conditioning; it was over 90 degrees. The terminals were set in carrels, like a language lab, and the instructor monitors each student from his console.

During the discussion period they indicated that all classes are taught in Russian and that there are special language classes for the foreign students. Instructors do not have the capability to cover geographic information systems in any depth, but the topic is discussed in both the aerospace interpretation and the natural resource remote sensing courses.

They proposed a joint U.S./U.S.S.R. project to produce an *Atlas of the Planets of the Earth Group*. This is the working title they have for an ecological atlas of global effects.

### MIIGAIK

*The Institute is over 200 years old. Originally an all male school, with a girls' school nearby, the large lecture hall used to serve as a dance hall. The desks and chairs are original and show the wear of 200 years. Today, instead of dances, there are platforms mounted in front of each window to hold surveying instruments for hands-on training before the students go into the field. At the front of the room are huge floor-to-ceiling cases full of modern and old surveying instruments, some dating back to the early 1800s. Adjacent to the cases is a large pictorial map of the U.S.S.R., created as a class project. This oblique view of the country includes renderings of dams, oil wells,*

*bridges, churches and the skylines of towns and cities.*

*As we moved through the building, with its thick walls, double windows, and well-worn marble stair treads, we learned that most of our hosts had graduated from this institution.*

*A trip through the training rooms full of stereo and analytical plotters led us to the optical laboratory in the basement. This is where they calibrate all of their measuring devices and maintain the standard meter measures. The optical benches are set on pilings that go through the floor to the bedrock below the building.*

*The facility includes a fine museum depicting the history of geodesy in the country as well as two recently restored ceremonial rooms. These rooms have beautiful crystal chandeliers, gold leafed columns, and wooden parquet floors made of woods from across the country.*

### LENINGRAD August 2-4, 1989

#### Wednesday August 2, 1989

At 1 a.m. we checked out of the Leningradskaya Hotel and walked to the nearby train station for the overnight trip to Leningrad. After a comfortable, but short, sleep we arrived in Leningrad around 10:30 a.m. and went straight to our hotel. After a shower and late breakfast we were taken to the Northwest Aero-geodetic Enterprise where we met with Dr. Georgi Muradov, the Director, Oleg Ivanov, and Alexander Yuskevich.

### Train

*For what the Soviets lack in their road system, they make up for in excellent rail transportation. The trains are comfortable, and run on time. The trains we traveled on were about 25 cars long, and each car had an attendant, a huge built-in samovar, and piped-in music. In first class there are two people to a cabin and in second class there are four. The extra two people use the upper bunks. The attendant puts rugs down for entry and exit and serves you tea and biscuits in bed each morning. There is adequate storage under each bed and a pull-down table between the lower beds. The compartments run down one side of the train and the hall runs down the other. Consequently, there was adequate room to stand and talk in the hall, or*

*you could open the windows and just stand and watch the scenery go by.*

### **Countryside**

*The landscape between Moscow and Leningrad is flat and marshy. Picturesque villages dot the countryside. The small wooden houses usually are accompanied by several outbuildings for storage, chickens, or horses. Horse-drawn wagons and bicycles are a common sight, as are the piles of hay surrounding the telephone poles along the tracks.*

*The marshes add a geographic footnote to history. Even though the Russian winters are brutal, invading armies, like those of Napoleon, actually found it easier to travel when everything was frozen.*

### **Northwest Aerogeodetic Enterprise**

The Northwest Enterprise is responsible for surveying and mapping the area of the Soviet Union from Murmansk, on the Kola Peninsula in the north, southwest to Estonia, and then east to the city of Izevsk, staying north of Moscow on a line passing through the large lake just east of Kalinin.

The enterprise employs 3,000 people, and has eight Expeditions that do photogrammetry and geodetic work. Their office is also responsible for surveying the continental shelf and making 1:25,000-scale maps for oil and gas exploration. On these maps, the contours are continuous from the land onto the shelf.

The topographic maps produced for their towns and cities include some at a scale of 1:500 which show underground utilities. They produce others at scales of 1:25,000, 1:200,000, 1:500,000, and 1:1,000,000. Those at scales of 1:1,000, 1:2,000, and 1:10,000 include cadastral data. Space photographs are used wherever possible.

The Photo/Mechanical Optical Enterprise in Leningrad produces aerial and space cameras. They are in the process of designing a new camera for use in space. The designation of this camera is AT (or AF) A-TK 10/18. Their current camera has a 60-millimeter lens and produces photographs with a resolution of 25-line pairs at the center. This new camera will have a 160-millimeter lens and a resolution of 60-line pairs. The Soviets do not use Landsat or SPOT data and the use of the two-layer

spectrozonial film is based on economics. Film is purchased commercially from abroad, including some from Eastman Kodak.

### **Antarctica Programs**

Lengthy discussions were held on the subject of Antarctica programs and activities. The Soviets are mapping the continent at a scale of 1:100,000, and copies of these maps are being sent to the Scientific Committee on Antarctic Research (SCAR). We were also shown copies of the 1:2,000-scale maps that they are making of their stations. Their newest station is called Progress and is located between 75 and 80 degrees latitude. We also saw Antarctic maps at scales of 1:5,000,000 and 1:1,000,000. They have a geodetic network for Antarctica that was developed from Global Positioning System data.

Mr. Starr discussed the most recent meeting of the SCAR nations in Hobart, Tasmania. He proposed that the Soviets cooperate on the building of a PC-based indexing program for various maps of Antarctica. The Soviets replied that they would be happy to participate and that they have already prepared a comprehensive list of their products.

### **1:25,000-Scale Mapping**

Displayed on the wall in the Director's office at the Enterprise was a mosaic of topographic map coverage at 1:25,000-scale of Leningrad. The maps have a 5-meter contour interval and show the principal buildings in black, water in pastel blue, forests in green, residential areas in yellow, the urban core in magenta, and the major highways in red.

### **General Discussion**

The first topic covered during the discussion was land use/land cover programs. Although they did not have a scheduled program, some Ministry standards exist for this type of mapping and some thematic maps have been made.

While most of their mapping work is carried out as part of standard programs, the GUGK also negotiates contracts with other Ministries for large-scale work. They can set prices on their products with the

Horse-drawn wagons and bicycles are a common sight, as are the piles of hay surrounding the telephone poles along the tracks.

The Soviets do not use Landsat or SPOT data and the use of the two-layer spectrozonial film is based on economics.

They have a geodetic network for Antarctica that was developed from Global Positioning System data.

One of their current production problems is the shortage of high-quality paper for map printing.

approval of the Ministry and the State Committee on Pricing. For example, the 1:38,000-scale plans of Moscow and Leningrad that we were given sell for \$2.40. New topographic maps of these cities currently being made will sell for between \$8 and \$16. We were asked what prices we charged for our products and what they should do to make their maps more marketable. These new topographic maps of Moscow and Leningrad, in both Russian and English, are scheduled for release.

One of their current production problems is the shortage of high-quality paper for map printing. Approximately 70 percent of their paper is purchased from Finland with hard currency.

### Building Tour

The building tour began at the Enterprise museum established by the employees. It houses a display covering the history of the operation, some of the early instruments, and gifts that were presented by visitors. We were the first Americans to visit the building and signed the book to mark the occasion. Group photographs were taken, and we then we saw their stereoplotters and camera laboratory. The machines we saw included their stereo and analytical plotters.

Most of our time was spent in the camera laboratory. The lab was a typical working facility with four people and several workbenches in the room. We were able to examine their latest camera, with its new motion compensation system. The housing, control system and shutter system had been disassembled so we could see all the parts.

### Thursday August 3, 1989

Thursday was a cultural day in Leningrad. Our local Intourist interpreter took us on a tour of the city and then to the Hermitage Museum and the Winter Palace. Following lunch and a visit to the Leningrad Monument to the heroic defenders of the city on Victory Square, we traveled west of the city to the Summer Palace of Peter the Great. Following dinner we were taken to the ballet to see *Swan Lake*.

### Friday August 4, 1989

The final day in Leningrad began with further discussion on Antarctica at the

Enterprise headquarters. They discussed their gazetteer, which contains over 6,000 names. They believe that a combined U.S./U.S.S.R. gazetteer would be useful.

In regard to Argentina's claims for Antarctica, the Soviets stated that their position was the same as that of the United States, that no territorial claims are acknowledged.

Mr. Starr asked them if it would be possible to get a catalog of all of their imagery of Antarctica. They said that they could produce such a list and that we could receive a copy. We suggested that their photographs could be used in a proposed international geographic information system project. The idea is to select an area of the continent, prepare a digital base map of the area, and then develop several thematic layers of data for the area. It will probably take a few years to prepare but the SCAR Committee thought it would be worthwhile. The Soviets said that they would be willing to participate. They also mentioned that an image map of Antarctica will be produced early in 1990.

The Leningrad Enterprise is also producing a two-sheet, 1:5,000,000-scale map of the continent. We were shown the draft base materials for the two sheets. They would like to have our shoreline data to help delineate the continental edges. We agreed to send them a 1:5,000,000-scale overlay of the defined coastline as shown on our maps. The Soviets are also producing 1:2,500,000-scale coverage of the continent that will consist of 17 sheets.

In discussing the value of line or photo maps our hosts stated that the line map was a tool for scientists and that Soviet citizens do not understand the value of maps. They said that the Soviet people's knowledge of cartography is limited and that the importance of a good cartographic education needs to be stressed.

Our discussions of global change issues were limited because this Soviet group does not have the data and the models necessary to do this type of analysis. There is a growing concern in the country about the environment and they believe that their satellite data, now available for purchase, will be useful.

The discussions closed with an interesting anecdote about the building of the

We were the first Americans to visit the building and signed the book to mark the occasion.

There is a growing concern in the country about the environment and they believe that their satellite data, now available for purchase, will be useful.

The vertical network is based on the average of 198 years of tidal observations in the Gulf of Finland. These observations were started by Peter the Great.

The Soviets stated that they routinely perform hydrographic surveys at 1:250,000-scale with navigational positions provided by satellite.

Their computing center consisted of several ES-1022's, but these will be replaced in 1991 when their new automated system is installed...

railroad between Moscow and Leningrad. When you look at the map, it appears that the railroad runs as a straight line between the two cities, with the exception of a small bulge near the town of Berebje. It is said that Peter the Great planned the railway by simply drawing a straight line with a ruler on a map, and that the bump was made when he drew around the end of his finger. The people, of course, built the railway exactly as he had specified and not because of any geographic or geologic reason.

### **Pulkovo Observatory**

Following our discussions at the Enterprise, the group was taken to the Pulkovo Observatory near Leningrad. We toured the grounds but none of the observatory buildings because they were all being renovated.

We were taken to triangulation station 001, the reference for their geodetic horizontal network. The station is approximately a 45-by-45 centimeter square, 1-meter high. It is constructed of concrete with the surface covered by ceramic tiles. The mark is a brass plug recessed into the top of the concrete base. The mark is stamped "001."

The vertical network is based on the average of 198 years of tidal observations in the Gulf of Finland. These observations were started by Peter the Great. The Pacific side is based on the average of 125 years of observations. When the two points were connected across the entire country by levels, there was only a 58-centimeter difference. This was adjusted throughout the network.

### **U.S.S.R. Ministry of Defense**

After our observatory visit Wesley Hull and Lowell Starr visited the Head Department of Navigation and Oceanography, U.S.S.R. Ministry of Defense, in Leningrad. The Chief, Rear Admiral Y.I. Zheglov, was on holiday and they were hosted by the Captain 1st Rank Vyacheslav, the Deputy Chief, G. Romanov, and Captain 1st Rank Igor M. Miroshnikov.

After the traditional signing of the guest book we were given a tour of the museum that chronicles the history of Soviet hydrographic and navigation work. The displays showed ships at sea being posi-

tioned by satellite. The Soviets stated that they routinely perform hydrographic surveys at 1:250,000-scale with navigational positions provided by satellite. In the display of aids to navigation, a nuclear power cell that will operate for 10 years without maintenance is displayed and described.

After the museum tour our delegates were asked what part of the nautical chart-making operations they would prefer to see—their Soviet hosts seemed willing to show them anything requested. Hull and Starr asked to see their automated operations. The Hydrographic and Oceanographic Division was about a 10-minute drive from the Headquarters building.

At this location, the Soviets described the digitizing of the bathymetric maps of the Mediterranean. These maps were on display at the International Geologic Congress in Washington, D.C., in July 1989. The Soviets use digitizing tables and small scanners but will be getting raster scanners in 1990. Their computing center consisted of several ES-1022's, but these will be replaced in 1991 when their new automated system is installed with a minimum of 20 workstations for chart compilation. Mr. Starr and Mr. Hull also visited a room containing eight word processors where sailing directions were being put on disk for automated printing.



Figure 12. Geodetic Control Station 001 at the Pulkovo Observatory.

### Peter's Statue

In a beautiful park along the Neva River is a statue of Czar Peter the Great sitting on his horse atop a huge piece of stone. It was erected in 1763 and survived the German siege during World War II. The people of the city carried dirt to the site and buried the stone on which the statue sits. A steel cage was then built around the statue and then it, too, was buried. After the war, when uncovered, the statue was found intact. This event was preserved on film, which we saw at a war memorial.



Figure 13. Peter the Great.

### Hermitage

The winter palace of the czars along the Neva River in Leningrad is now known as the Hermitage Museum. The entire complex consists of five connected buildings that house one of the world's most spectacular collections of art. It is said that if you stood for just 1 minute in front of each object of art, it would take you 16 years to see everything, and that if you walked every corridor in the complex, you would cover almost 25 kilometers.

The golden rooms house one of the most spectacular collections of gold and jewels in the world. The items range from those brought back from archeological expeditions to a complete gold bathroom set owned by Katherine the Great. In that one case there were over 37 kilograms of solid gold. In another room there were huge bouquets of flowers all made from diamonds, rubies, garnets, and other precious stones. Given the extent and variety of minerals, we decided the visit qualified as a geology field trip.

In many rooms there were beautiful blue azurite and green malachite columns, tables, and display cases. Several azurite vases stood almost 2 meters high and had ornate gold handles.

As we passed through the magnificent grand halls filled with paintings, sculptures, and tapestries we saw that the windows were all open, as they no doubt have been for centuries. Exiting down the grand staircase and through the throne room, we realized that the building itself made the trip worthwhile.



Figure 14. Hermitage Museum Gallery.

### Food

We were very well fed. There were tomatoes and cucumbers at every meal and platters of meats as the first course. The vegetable soups were delicious, and the entrees were usually chicken or beef. At the special dinners there were platters of caviar in hard boiled eggs and smoked fish. The well-known black bread was always present along with bottles of Pepsi. Bottled water, Armenian cognac, Czechoslovakian beer, and vodka also helped to wash it all down. In Leningrad we were introduced to "white bears," which turned out to be shots of vodka in Soviet champagne. We also ate a buffet in that city that included among the multitude of selections a Soviet hamburger. McDonalds had not opened yet. The all-you-could-eat buffet was 2 rubles or about \$3.20.

Breakfast consisted of tomato and mushroom salads covered with yogurt, baked eggs, and sausage. Black bread and tea or coffee finished off the meal.

### Heros of Leningrad

Standing in a circle on Moskovski Prospekt in Leningrad is the monument to the heroes of the World War II German siege of Leningrad. The centerpiece of the monument is a tall obelisk standing over a huge marble circle that is broken in one place. On one side of the break are the words, "900 days," and on the other side, "900 nights." This represents the total number of days and nights that the people were trapped in the city.

In the circle there is an altar with bronze figures of the suffering citizens who were held captive in 1942 and 1943. It is here that all brides place their floral bouquets after they have been married. It is reminiscent of the Vietnam Memorial because flowers and other tokens are placed there to honor the one million people killed in Leningrad during this siege. Off the circle is an underground visitor center. On one end is a mosaic

tile mural of the horrors of war and on the other end is a mural of the jubilation that came with the lifting of the siege. A lighted

map, regimental banners, and war artifacts fill the room. In the center is a white marble wall with the names of the heroes etched in gold. On the other side are two large brass plates that tell the daily events that occurred in 1942 and 1943. Each day the plates are changed to indicate what happened on that particular day. Adjacent to the plates is a small theater where actual films of the siege are shown. The films show the destruction and the killings, women digging fortifications, and people so weak that it was said, if one fell down, you didn't dare bend over to help because you were so weak yourself that you might never get up. It is no surprise that you see former soldiers throughout the city with their ribbons and medals still pinned to their chests.



Figure 15. Memorial to the Defenders of Leningrad.

### Summer Palace

The major attractions at the summer palace of the czars are the famous gold fountains of the grand cascade. Life-sized gold figures of Greek and Roman

gods and goddesses descend a hill side between the palace and a canal that leads into the Baltic Sea. Water piped in from springs 6 kilometers away provides a constant spray from each figure.

At the bottom of the hill is a round pool surrounding a statue of Hercules pulling open the jaws of a lion. The purpose of this statue is to commemorate the war with Sweden. The lion is from the Swedish Royal Coat of Arms and Hercules represents the Russians defeating the lion.

Surrounding the figures of Hercules and the lion is a beautiful park with a large number of other fountains, house-sized bird houses, and the small palace next to the water where Peter the Great preferred to stay. Here, it is reputed, he held wild drinking parties and soaked his guests with pressured water from fountains with secret triggers.

Today the children stomp around on the rocks in these fountains trying to find the right combinations to turn them on.



Figure 16. Summer Palace Fountains.

**MINSK August 5-7, 1989**

**Saturday & Sunday August 5-6, 1989**

On Friday evening the group departed Leningrad by train for Minsk and arrived at the hotel, the Gostinitsa Belaruss, around noon. On Saturday the group toured the city and on Sunday we visited Khatyn, a World War II memorial on the site of the destroyed village of Khatyn. In the evening we attended a gypsy concert at one of the workers' auditoriums.

### ***On-time Trains***

*The Russians pride themselves on their trains and how they are always on schedule. We discovered that this is accomplished by slowing down or stopping outside each town and waiting to enter until just the right time. After a quick exchange of people getting on and off, the train departs on schedule.*

### ***Fables and Folk Tales***

*Standing in the Minsk City Park is a monument to one of their famous poets who wrote about the Legend of the Flowering Ferns. It is said that just before midnight on the 25th of June, ferns bloom. On that night the people go to the forests hoping to witness this event because it is said that if you do, you will possess all the knowledge of the world. Have you ever seen a fern bloom?*

*Nearby is a huge fountain that includes two bronze sculptures of teenage girls placing garlands of flowers on the water.*

**In the evening we attended a gypsy concert at one of the workers' auditoriums.**

**... in Minsk, an Intourist bus full of Americans pulled up and filed out with their Perestroika t-shirts and fur hats on.**

*Legend says that on a certain night of the year, all young girls are to go into the forest and gather flowers, which are strung together into wreaths. They then place them in the rivers and lakes to determine how successful their lives will be. If the wreath floats and stays visible for a long time they will be successful in finding a husband, but if the wreath sinks quickly or can't be seen, they will have a short life and no husband. To ensure that the wreaths can be seen for a long time, the girls place candles on them and then set them afloat.*

### ***Fur Hats***

*While we were standing outside Lenin's meeting house in Minsk, an Intourist bus full of Americans pulled up and filed out with their Perestroika t-shirts and fur hats on. Several of the "fur bearing" men asked why the Russians always laughed at them. The guide replied that Russians don't wear fur hats in the summer when they are not needed and that only silly Americans would do something like that.*

### ***Housing***

*The Soviets have a unique system of housing. Complexes that can house 15-20,000 people are developed at one time, and people apply years in advance for the privilege of moving in or upgrading from smaller flats. When the complex opens it includes day care facilities, shops and markets, and recreational facilities.*

### ***Khatyn***

*North-east of Minsk is the World War II memorial to the village of Khatyn. The story of the village is told everyday to thousands of visitors.*

*As the German troops stormed through Byelorussia they came upon the small farming village of Khatyn. The town consisted of approximately 125 people living in 25-30 small houses. On a quiet Sunday morning the soldiers rounded up all the citizens and put them in the one common barn that stood in the center of the town. They then piled hay around the base of the barn and set it on fire. As it burned, the troops sat outside with machine guns and shot anyone who tried to escape.*

*Today a bronze replica of the roof sits on*



Figure 17. Minsk maidens.

An eternal flame sits next to three trees representing the three of every four people who lived.

the ground over the site of the barn. A white marble walkway leads from an opening in the roof to a common grave about 20 meters away. Here the ashes of the dead are buried together.

On that day however, three people did survive. A small child survived under his mother as she was killed by the bullets and fell on top of him. A 6-year old boy and one adult man also lived. The man and his 14-year old son ran from the barn and both were shot. The boy died but the father lay still and went unnoticed until people from a nearby village arrived to investigate the smoke and were able to treat and save him. In later years he posed for the only sculpture at the site. The statue of him holding the body of his son is visible from the pathway from the parking area.

Beyond the statue, cut in stone, are the numbers 186, and it is here that you learn that this is a monument not to people, but to the 186 towns and villages that were destroyed and never rebuilt. Each town has a 4-by 4-meter plot that contains the name of the town and a container that holds the ashes from the dead. All in all, one of every four people in Byelorussia were killed and the entire city of Minsk was leveled during the war.

In the area where the houses once stood is the Wall of Death, which pays tribute to the 2,400,000 people killed in this region, and then there is the Wall of Life, which names the towns and villages that have been rebuilt since the war. An eternal flame sits next to three trees representing



Figure 18. Khatyn statue.



Figure 19. Town and Village gravestones.



Figure 20. Wall of Life.

the three of every four people who lived.

The most moving part of this monument, which was designed by three students from the architectural school in Minsk, involves the symbolic restoration of the foundations of the houses of the town. A solitary chimney stands in the center of the foundation and a cement gate stands open at the entrance which indicates that one is free to come and go at will. On the chimney is a plaque with the names of the family members who lived there, and at the top of the chimney is an electronic bell. In the hushed silence, the wind carries the sound of each bell ringing in sequence across the fields down the hillside. It is indeed a place and experience never forgotten.

### Farm Friends

Leaving the main part of Khatyn I spotted a group of people clustered around a wishing well. The well, which is one of four, covers the springs that were used by the villagers. I dropped an American quarter into one well and was taking a picture of it laying amidst the rubles and kopecks when a mother, father, and their 25-year-old son approached and asked me to take a picture of them dropping their coins into the well. After I took their picture, they asked me who I was. When I told them I was from the United States, they could hardly believe it. They had never met an American face-to-face and here I was in their own region paying tribute to their war dead. When I gave each of them a quarter you would have thought I had given them

gold. The son hugged me and kissed me while his father crushed my hand. My last picture of them shows them standing in front of the statue with the father saluting me. Somewhere, in the heartland of the U.S.S.R., I know that there are three quarters hanging on a wall and stories being told of the day they met an American at Khatyn.

### **Minsk Food**

On the way back from Khatyn we stopped at a roadhouse for a meal. After the cucumber, tomato, and yogurt salad, we were served beef and pork meat platters. In the center of the table were platters of salted ham. As we finished this course they told us about their potatoes. Brought from England to Russia by Peter the Great, they grow quite well during the short growing season because they are underground and not exposed in the early spring. It was said that there are over 250 ways to serve a potato and we tried several of them. First they were grated, mixed with flour, fried, and served as pancakes. In the bowls with the pancakes were chunks of salted meat. With the soup course we were served giant croutons that were pieces of bread toasted on one side and then covered with cheese and sugar.

After several toasts, we took a break while the table was cleared for the main course. That turned out to be a large, tasty piece of salty beef drenched in garlic and topped with cabbage and, of course, arrived with boiled potatoes and more cucumbers and tomatoes.

### **Grandmother and Apples**

On the way back to the city we stopped near another huge World War II monument outside Minsk and confronted a grandmother with her grandson selling apples. I took her picture and she was embarrassed because her hair was done up in a kerchief and she said she wasn't properly dressed. When I told her we were Americans she said, "Americans are wonderful people." After Al Watkins bought all of the boy's apples for one ruble, she had tears in her eyes. We gave him an American Flag pin, a pen, and a quarter and left one smiling blond-haired youngster with a special story for school.

The products include tourist maps, pocket and desk atlases, and maps for schools and children.



Figure 21. Young Soviet businessman.

**Monday August 7, 1989**

### **Minsk Cartographic Factory**

The group visited the Minsk Cartographic Factory No. 2 where we met with Director Nikolai Valkov and Chief Engineer Vasily Grudinko.

The main mission of the Minsk factory is to print maps and atlases. The products include tourist maps, pocket and desk atlases, and maps for schools and children. One of their most important products is the *Atlas of the World*, a boxed set of folded maps, which was first published in 1954. The second edition was printed in 1967, and they are currently working on the third edition, which may be printed in Japan and will be available in both a bound and a boxed version. The Minsk Cartographic Factory handles 80 percent of all atlas production in the country. There is also a limited capability for compilation and editing.

An estimated 60 percent of the products printed here are produced in other enterprises. The remaining 40 percent of the products are produced in Minsk at either the Cartographic Factory or the Western Air Survey-Geodetic Enterprise.

The factory is celebrating its 50th anniversary. The plant was destroyed by the Germans during World War II, as was the entire city of Minsk. The workers rebuilt the plant, which is just one block off the main square in the center of the city. The factory was separated from the rest of the Enterprise in Minsk in 1939 because topographic maps and production are restricted but the smaller scale products for tourists and students are not. Because of the war the factory had moved to a nearby town in 1941, but production began again at the main plant in 1948. One of their first needs was to train new employees to replace those lost in the war.

The organization includes the following components: compilation (scribing), plate making, printing, binding, auxiliary or mechanical operations, technical, administration, financial, personnel, transportation, technical/quality control, and proofing control.

The main objectives of the factory are to: (1) provide products for the public and schools, (2) develop special atlases like those produced for Leningrad and Moscow,

...there is an adequate supply of employees, and Minsk is a preferred location in which to live.

(3) produce the atlases of the Arctic and Antarctic regions, (4) develop an economic atlas for the Five-Year Plan, (5) produce pocket and desk atlases, (6) produce specialty atlases like the one on mushrooms, (7) produce children's atlases in several languages, and (8) produce road atlases. These road atlases are hard covered and cost about 3.5 rubles (\$5.68). These are their most popular products, and over 1 million copies are produced a year.

### Printing Plant

The Minsk Cartographic Factory has 429 employees, 230 of whom are women. They would like to build a new plant but the planners won't allow factories to be built in the urban core. As most of their employees live nearby and don't want to commute to the industrial areas on the outskirts of the city, this presents a problem. Management believes they have highly qualified employees and so space may have to be leased as opposed to building a new factory. The Enterprise conducts training courses, and the Minsk Polytechnic Institute teaches printing. Consequently, there is an adequate supply of employees, and Minsk is a preferred location in which to live.

The factory workers work a 41-hour week. They can set their own daily schedule and get two short breaks. There is a 40- to 60-minute lunch period, and at 11:00 in the morning there is an exercise break. They have production quotas to meet, incentive pay, and overtime options. The Bureau of Standards and Trade Unions negotiates any changes in their work environment and establishes the number of units each worker must produce in a day.

### Pricing and Foreign Sales

In response to questions on pricing they stated that there is a pricing table based on size and number of copies to be produced. This formula is set by the Minister of Prices of the State Committee on Pricing. All changes must be approved by this committee.

Under Perestroika, the factory is supposed to become more self-sufficient, and the employees have more rights within the enterprise than in the past. They have been allowed to develop their own guidelines and production plan, which has been

completed and sent to Moscow for review and approval. While 80 percent of their budget and work will come from the State, they will be able to decide what will be produced with the other 20 percent of their effort. The only stipulation is that production must be a cartographic product. We assume that the revenue from the sale of the products produced with this 20 percent will be retained by the factory to cover operating costs. They did not say what would happen to revenues received in excess of this 20 percent.

The products of the Soviet map factories are sold through State Bookstores, which are controlled by the State Committee for Publishing. Approximately 26 percent of the price of each item goes to the bookstore. Under the new programs, and with the establishment of Sojuzkarta, factories now have the right to sell certain products abroad. This right was granted on April 1, 1989. It is possible, for example, to deal directly with the factory; however, there is an exclusive agent for Sojuzkarta in the United States. Currently producing foreign language catalogs of available products, they are, because of a paper shortage, waiting until receipt of a series of orders before printing these products. Their catalogs will include projected as well as existing products. In fact, much of what is listed in the catalogs may not be available at this time. That may be why several orders that have already been placed by organizations in the United States have not yet been filled. The Soviets admitted that they had much to learn about foreign markets, warehousing, and sales.

### Map Factory Tour

After the general discussion we were taken on a tour of the Map Factory. The first stop was the paper receiving area. The paper is received in roll form and is cut into sheets (126 centimeters or 49 inches) for the presses. There were two cutters for cutting the paper into sheets and two that trimmed the sheet edges before they went to the press room. The cutters were Seypa 168-4 Original Perfectas.

The plant has six two-color and two four-color Planeta Super Varient presses. The two-color presses cost 48,000 rubles (\$77,900) each.

While 80 percent of their budget and work will come from the State, they will be able to decide what will be produced with the other 20 percent of their effort.

They use two types of printing plates. The one that is most often used is a copper, aluminum, and nickel composite. It can be reused five or six times. Coated aluminum plates, which cannot be reused, are preferred. Two new plants in Siberia have started making them for use to meet the higher quality printing requirements. There is a screen KF 123-SH proof press that requires the use of the actual plate and a new color proofing system made in Japan.

The remainder of the tour included visits to the finishing and binding areas. The facilities are old, the equipment was mostly homemade, and there were several manual assembly lines. The gluing of the atlas covers was accomplished, for example, by women taking the glue from a big stainless steel mixing bowl and spreading it on the cover sheets with a sponge. Most of the products from Factory No. 2 go to schools and other countries. Many are printed in foreign languages.

### **Western Air Survey-Geodetic Enterprise**

In the afternoon we visited the Western Air Survey-Geodetic Enterprise where we met with the Director, Nicolai Avramenko, and his chief engineer Vatslav Minko.

The western organization has five regional offices within Byelorussia and produces all types of maps from 1:500 scale to 1:500,000 scale. With expeditions in Gomel and Kaliningrad, they are responsible for conducting surveying activities, for a territory of 435,000 square kilometers. The Kaliningrad office is responsible for the mapping of Latvia and Lithuania.

### **History and Mission**

The Enterprise, founded in 1947, has 2,000 employees. They recently finished remeasuring their leveling and geodetic networks. The 1:10,000-scale topographic map coverage of their territory was completed in 1987. Some 30 percent of this territory is also covered with larger scale products, including 1:5,000- and 1:2,000-scale coverage of all the towns and cities. The 1:2,000-scale maps have a contour interval of 50 centimeters and cover some 20,000 square kilometers of territory. Many of these large-scale products were produced for irrigation planning.

The director stated that their present

mission is to revise existing products, to build up a digital cartographic capability, and to improve their photomechanical processes. They are also planning to produce their own plastics for scribing. Apparently they have experienced material shortages because of hard currency problems and their dependency on the Japanese for these materials. A chemical plant in Siberia is expected to be able to produce this material by the end of the year.

With a well-qualified staff at this operation, including five with doctorates, they offer special on-the-job training, as well as maintaining contact with 12 research institutions and universities. Currently training people from several foreign countries including Cuba, Angola, Libya, and Nicaragua, they also do mapping and geodetic work in foreign countries when requested.

One of the most time-consuming activities is managing their engineering services. Forty people are working to build apartments, nursery schools, dormitories, and a sports complex for the employees.

Another of their missions is to do work for other agencies. An example is the 1:50,000-scale digital mapping work for the Russian State Land Commission. The resulting maps will be used for planning. They are using manual digitizing techniques, which are time consuming, but they are being reimbursed for their efforts by the Commission.

In order to create digital maps of the city of Minsk at a scale of 1:10,000 and larger for the Supreme Soviet of Byelorussia, they must expand their geodetic network.

### **Building Layout and Operations**

The Enterprise's seven-story building was built in 1979 and was specially designed to house a mapping facility. Production facilities and a Computer Information Center housing a new ES-1060 computer (which replaces their older ES-1022) are located on the second floor. The third floor houses the administrative, planning, and budgeting operations and the stereoplotters and topographic compilation activities are on the fourth floor. Map preparation, drawing, and scribing are located on the fifth floor and small-scale cartography on the sixth. Twenty-nine

The gluing of the atlas covers was accomplished, for example, by women taking the glue from a big stainless steel mixing bowl...

...a well-qualified staff at this operation, including five with doctorates...offer special on-the-job training...

In order to create digital maps of the city of Minsk at a scale of 1:10,000 and larger...they must expand their geodetic network.

One of these labs is for the development of digital cartography and the other is for geodetic and cartographic automation.

The Priroda Center, Sojuzkarta, and the Moscow Enterprise are all located in the same building and are components of the "Cartographic Association"...

The Soviet remote sensing program officially began in 1974...

people are involved in producing and maintaining instruments and tools for scribing and drafting. Mechanical operations are on the seventh floor. They also have a limited printing capability in the building. Each floor is essentially self-contained, thus eliminating the need to move materials or people between floors. In the photoprocessing and materials storage areas, there are escalators to move people from floor-to-floor. The building also contains a museum that portrays their history and technological progress.

This Enterprise has several different types of photomechanical, stereoplotting instruments. The unit that we visited was using 1:6,000– and 1:9,000–scale photographs (taken with a camera with a 70–millimeter lens) to make maps at 1:2,000. There are two units for drawing, scribing, and preparing map materials for printing. They also have auxiliary units and two highly productive laboratories for technical research. One of these labs is for the development of digital cartography and the other is for geodetic and cartographic automation. They have the largest computer facility, and it is reported to be the best in the GUGK. The ES-1060 computer is a 2-megabyte machine augmented with a 29-megabyte disk pack that is being used to support cartographic and geographic data bases. Five-megabyte disk packs were in place, but most of the operation still uses 900 BPI magnetic tapes.

In a discussion of their geodetic activities, attention was drawn to their geodetic network which was completed in 1960; they are now working on maintenance and densifying the net with third and fourth order control points. They also pointed out that they were mapping the continental shelf near Kaliningrad using conventional methods, and that 30 percent of their territory is completed with triangulation for 1:5,000–scale mapping.

Following the afternoon meetings and tours we met with the staff of both operations for dinner and then went to the train station to catch the overnight train to Moscow.

### **MOSCOW, August 8–10, 1989** **Tuesday August 8, 1989**

We arrived at the Minsk train station, in

Moscow, early Tuesday morning and went to the Hotel Leningradskaya. That afternoon, we visited the State Scientific Research and Production Center, Priroda, where we met with:

Vladimir Kiselev, Deputy Director  
Stanislav Karpuchkin

Roman Ravlov

Pavel I. Drozdov, Chief Engineer and Deputy Chief of the Photogrammetric Enterprise

Anatoly E. Menshich, Chief of the Laboratory (Digital Processing)

Yuri A. Potapov, Chief of the Laboratory (International Relations)

Others present were: Agapov, Paterhov, Sashin, and Swaznikov.

The Priroda Center, Sojuzkarta, and the Moscow Enterprise are all located in the same building and are components of the "Cartographic Association" as we understand it. The Moscow Aerogeodetic Enterprise, directed by Dr. Gromov operates the building, and the other organizations are tenants. There are 3,000 people housed in the building, and they hope to build a new facility because their current plant is too small and street noise from the major highway running along the south side of the building is distracting. Cutbacks in funding and the shortage of building materials, however, have delayed the construction of the new facility. The message from the State now is that each enterprise must be self-sufficient and support its own development plans.

The Priroda Center currently has over 1,000 customers, and the center sells data throughout the world because it is much less expensive than aerial photographs and can be used to revise maps down to 1:50,000–scale.

### **Remote Sensing Programs**

The Soviet remote sensing program officially began in 1974 when three organizations were combined under the Priroda organization. They were: (1) the State Scientific Research and Production Center, Priroda, which is responsible for collecting images and data through space remote sensing, (2) the State Center for Natural Resources, which conducts electronic remote sensing using radio frequencies, and (3) the State Center for

Oceans, which operates a Natural Resources Center under the auspices of the Ministry of Fisheries.

In terms of electronic scanning, the Center for Natural Resources collects data in the visible spectrum, uses radar, and employs a three-channel system to collect data in two near-infrared bands and one thermal infrared band. This system is called Resource. The resolution, on the ground, is 45 meters. They also use an electro-optical system with an on-the-ground resolution of 45 meters. A Spectral Image Synthesizing Device built by the GUGK with a 1/200 exposure time operates in the yellow, green, and infrared portions of the spectrum (750-900 nanometers). They have the capability to make digital orthophotos by scanning the space images and have also developed a 30-meter resolution system called Fragment, but it has not yet been flown in space.

#### Space Systems

The Priroda Center is responsible for working with both the Cosmos series of unmanned satellites and the Mir manned spacecraft.

The Cosmos series operates at an altitude range of 250-300 kilometers, at an inclination of 82 degrees. Approximately 98 percent of all their photographs come from the Cosmos satellites. The cameras on the Cosmos are the KATE-200, the KFA-1000, and the MKF-4. The KATE-200 format is 18-by-18 centimeters with a ground resolution of 20 meters. The KFA-1000 has a 1,000-millimeter focal length lens and has a 30-by-30 centimeter image format with a resolution of 8-10 meters. This latter camera has motion compensation. The multichannel MKF-4 cameras have 300-millimeter lenses. The 18-by-18 centimeter photographs produced by the MKF-4 cameras have a resolution of 10 meters, and although they have the capacity to collect data in six spectral bands, only four bands can be used on any particular flight. They use multispectral and spectrozonal stable-base films, which are made to their standards.

The cameras and film are returned from the Cosmos satellites by ejecting them in a canister and collecting them after they have landed near the launch site. The film is

returned to the Priroda Center where it is processed and ready for use in 2-3 days. The processing and distribution of all photographs to the various Ministries is all done in the Moscow Enterprise building.

There is a Cosmos launch on the average of every 3-4 weeks, with special efforts made to launch each month from May to September because of the better weather; additional missions are launched for special customers. We were told that a launch costs 3 million rubles. On each mission they photograph 20-million square kilometers of the Earth's surface and collect 6,000 frames of imagery. Only about 30 percent of the scenes are usable because of cloud cover or for other reasons. Approximately 70 percent of the photographs have 10 percent or less cloud cover.

There is a 15-year archive of data that is available to over 1,000 users for studies of geology, oil and gas, forestry, and water resources. A two-layer film (SN-10) is used for forest surveys while a three-layer film (SM-15) is used for other earth science applications.

The manned spacecraft operate at an altitude range of 300-400 kilometers and at a maximum inclination of 51 degrees. The main cameras used on these missions are the KATE-140 and the MKF-6. The KATE-140 images have a format of 18-by-18 centimeters with a resolution of 30 meters. The second camera collects 20-meter ground resolution photographs in the visible portion of the spectrum. They have also used hand-held cameras on many missions.

#### Chukchis

*In the Paleo-Siberian sector of the U.S.S.R. live the Chukchis who are the source of many stories. It seems that one tribe had a very popular magician or medicine man. The Chukchis went to him every fall to learn what kind of winter they were going to have. Being lazy people they only wanted to cut enough wood to get by. Well, the magician realized that if he told them there was going to be a mild winter they would not store enough wood to get them through, what could turn out to be, a very harsh winter. So year after year, he always told them that it would be quite severe.*

The Priroda Center is responsible for working with both the Cosmos series of unmanned satellites and the Mir manned spacecraft.

The cameras and film are returned from the Cosmos satellites by ejecting them in a canister and collecting them after they have landed near the launch site.

There is a Cosmos launch on the average of every 3-4 weeks...

*Well, one year, the leader of the tribe happened to be in Moscow and visited the main meteorological station. He decided that while he was in Moscow, he would ask the experts how they determined the severity of winter.*

*"Well," said the experts, "Do you see these satellite photographs? We study these photographs and from our analysis we can determine how severe the winters will be."*

*"You can tell that from the satellite photos?" asked the visitor.*

*"Yes," replied the scientist. "Do you see all those little black dots? Well, those are the Chukchis going out to cut wood, and if we count a lot of them, we know it will be a very hard winter."*

### **Facilities Tour**

Dr. Karbuten briefed us on the tour. He stated that space photographs are used for a variety of purposes, but particularly for geologic studies, seismic engineering, vegetation and land-use mapping, and topographic and landscape mapping. He stated that they are in the process of making a series of maps of these subjects for the whole country by regions. There are 15–30 maps for each region. The maps are at a scale of 1:1,000,000. We were shown samples of Mongolia.

On the tour we saw Zeiss Jena PKAB and PPAB reproduction equipment that is used to reproduce copies of the MKF-6 images. The PPAB unit has a 5 X magnification capability. A MSP 4C unit is used for the multispectral data.

The rectifier was designed by Dr. Andropov and can handle formats from 30-by-30 centimeters to 3-by-3 meters. They have recently added a screen with a slit to improve the resolution.

The ROBATRON A6472 minicomputer, which may be equivalent to a DEC PDP 11-34, can handle image processing of 256-by-256 pixel imagery. They also have a Zeiss FEAG 200-30 digitizer with three drums. It has a 200 KB/second transfer rate, which is 10 times faster than an Optronics scanner.

The tour was followed by an open meeting with about 200 employees of the GUGK. This was one of the most interesting events on the trip.

### **Press Conference**

We appeared on stage in a large auditorium for what was called a press conference. Approximately 200 people were in attendance and we were told that they competed for the privilege of attending. After each of us spoke about our responsibilities, the floor was opened to questions. The questions were about our scales, prices, and distribution numbers. Many questions were asked about women—how many we had employed and whether they had the same responsibilities and pay as men. Much interest was expressed in our satellite images and so we showed them the image maps of Washington, D.C., that we had brought with us. A final round of questions concerned funding. The assumption was that we had all the money we wanted and could do anything we wanted with it. We set the record straight and they came to realize that funding problems related to mapping are the same regardless of the country.

Following the press conference we were hosted to a typical field barbecue by Dr. Gromov in the building canteen.

### **Wednesday August 9, 1989**

On Wednesday morning we visited the Central Geodesy, Aerial Survey and Cartography Research Institute. We met with Dr. Nikolai Makarenko, the Director, Vladimir B. Obinyakov, Chief of the Information Department, Buginsky, the Chief of Cartographic Research, and several other members of the director's staff.

### **Scientific and Technical Institute**

Located in a typical four-story concrete building on the outskirts of Moscow is the Scientific and Technical Institute. After passing the women guards at the control stations inside the entry, we ascended the stairs to the second floor lobby outside the conference room.

On the wall is a huge wrought iron sculpture with an outline of the country, and inside it the silhouette of a surveyor with a planetable. There were numerous exhibit panels showing planetary explorations, surveying instruments, and globes. In the conference room were examples of all surveying instruments that they make for GUGK and other agencies.

They also have a Zeiss FEAG 200-30 digitizer with three drums. It has a 200 KB/second transfer rate, which is 10 times faster than an Optronics scanner.

The assumption was that we had all the money we wanted and could do anything we wanted with it.

## History

This 400-person Institute has been in operation for 60 years and was founded by the man who determined the ellipsoid for the U.S.S.R. Their principal mission is to conduct research and to develop high-precision surveying instruments. The engineering geodesy and natural resources remote sensing groups have recently been reassigned from the Institute to the Priroda Center. Their dislike for this "Perestroika" move was quite evident. They also told us how they use the United States to help get money from the government. They tell their budget people that the United States has better instruments and that they also need these instruments. This works every time. Dr. Makarenko stated that their greatest need is for an improved micro-processing capability.

## Operations

The Institute is responsible for furnishing all enterprises with gravity measurements. They are involved in theory development and in collecting basic data and information. They use U.S. data and are involved with the International Center for Geophysical Data in Colorado.

They are aware of our new datum adjustments, North American Datum 1983, but have not finished the readjustment of their horizontal network. Their readjustment consists of 150,000 first- and second-order stations. There will be shifts ranging from 3–5 meters for Europe and greater shifts in Siberia. There are 87 loops for Europe, and they have just added new loops and links for Siberia. Corrections for the Far East will also be considerable.

## GLONAS

The Soviet GLONAS System will consist of 24 satellites with 3 held in reserve. It is expected that all the satellites will be up in late 1991. The satellites, which operate at a frequency of 1,600 megahertz, will be in a 19,000-kilometer orbit at an inclination of 64.8 degrees. There are plans to develop receivers for use with either U.S. or U.S.S.R. satellites; this will probably require a change in data format. The use of GLONAS will strengthen their geodetic network. The Soviets would like to exchange data formats, and they are

working with Canada on the Marconi satellite receivers.

## Geodynamics

The Soviets have 60 geodynamic test sites in high-risk seismic areas. Some are in areas where earthquakes have occurred and others where they are predicted to occur. Other areas are instrumented to determine how much they are affected by human activities, power stations, and mining. They hope to unite their efforts with all earth scientists, but lack precision instruments and need some with a relative accuracy of 1:1,000,000. They have mapped vertical crustal movement rates for the whole country.

One of their main missions is to produce high-precision instruments. In the area of new developments they are working on a two-wave distance measuring system with an accuracy of 1 part in 1 million to 1 part in 2 million. A prototype is being tested.

Pendulum instruments for gravity are still being built. Their gravity meter for surveying the sea floor has an accuracy of 0.1 milligals and 0.03 milligals for geodetic measurements. The mean error is 30 microgals. Their ballistic (absolute) gravity meter was compared with the Siberian Academy of Sciences instrument as a benchmark. The results were the same. The accuracy was 10 microgals, and they achieved higher precision through internal comparison.

They showed us their latest instrument for astronomical observations. A large instrument that is very stable, it has produced very promising results. It has a mean instrument error of 0.1 seconds of arc times the seconds of latitude at the point of observation. They can determine latitude and longitude with this instrument. Longitude is determined by use of a photoelectric device on the instrument.

## Continental Shelf Measurements

The Soviets have over 7,000,000 square kilometers of land on their continental shelf which they began mapping in the 1970's. They use a topographic sonar for surveying the relief on the shelf and for the bottoms of inland bodies of water. The design of the sonar makes it possible to mount it on any survey vessel. The antenna may be

The Soviet GLONAS System will consist of 24 satellites with 3 held in reserve.

One of their main missions is to produce high-precision instruments.

It has a mean instrument error of 0.1 seconds of arc times the seconds of latitude at the point of observation.

They stated that they would like to establish cooperative projects similar to the Venus Atlas and to exchange maps.

secured to both sides of a vessel; sonar images may be received simultaneously from the left and right sides of the ship providing stereoscopic coverage. This system makes it possible to detect underwater objects of a natural or artificial nature. The method of acoustic interferometry used by the sonar allows the receipt of spatial coordinates of points on the bottom. The data are processed by a programmable-algorithmic computer, which makes it possible to produce digital models of the relief on the bottom.

The system can operate in depths up to 200 meters with a swath width of 375 meters to each side, at all depths, and a vessel speed of up to 7 knots, a pitch of up to 5 degrees, and at a yaw of up to 2 degrees.

The Soviets also stated that they carry out marine gravity measurements in 70-100 meters of water by putting a pendulum gravity meter in a gimballed housing and placing it on the ocean bottom.

### **Aerial Photography and Topographic Mapping**

The Institute addresses such problems as instrumentation and aerial photography formats. For example, they cannot use many western plotting or digital instruments because their basic film format is 30-by-30 centimeters (12 inches) or 18-by-18 centimeters (7 inches) rather than the standard 23-by-23 centimeters (9 inches) used by the rest of the world. They have asked the GUGK for a decision on this basic format.

As far as photogrammetry is concerned they feel that their technology is the equal of ours. They have produced an analytical plotter—the SE-1420. When used as a stereocomparator, it has an accuracy of 2-3 micrometers.

Experimentation with the use of ultralight aircraft for collecting aerial photographs and with a light-weight aerial camera is being carried out to create an efficient and economical way to produce large-scale photos. Current stereopoint marking devices mark with needles while the new ones, under development, will use heat.

During discussions Mr. Tjuflin stated that they have been in touch with several people at the USGS office in Flagstaff, Arizona

concerning their planetary work. Again, they emphasized that their problem was the availability of adequate computers. They said they have the brains but not the hardware.

Speaking about their cooperative projects with Brown University and the USGS on the geochemical instrument on Magellan, and with Brown University and the U.S. National Academy of Sciences on Mars/Phoebus work, they stated that they would like to establish cooperative projects similar to the Venus atlas (produced at a scale of 1:5 million) and to exchange maps. We were given a copy of the atlas of Venus.

### **Cartography**

In the cartographic arena this group has two major efforts underway. First, there is the standardization of geographic names, with 25 people working to produce and maintain their gazetteers. All State Ministries are required to use them and much of the work is done by the cartographic institutes. This work involves both foreign and domestic names.

The second effort is related to the development of new technology and hardware for cartographic work. This group is quite proud of their globe-making operations. They are trying to keep pace with developments in chemicals and plastics. They showed us their new technique for globe production. The new process involves pushing a heated stainless steel ball into a piece of plastic, on which the map has been printed, so that the plastic is shaped around the ball. This eliminates the distortions created in the standard vacuum press processes. They are the only ones in the world known to be using this process. We were shown the operation by the developer of the system, Buginsky. The actual production is accomplished in a factory in Kiev.

### **Visit to Sojuzkarta**

The last facility that we visited in Moscow was Sojuzkarta, which shares the building with the Moscow Enterprise. We met with Deputy Director General Rudolf Kazakov, the Director of Aerogeodesia, Leonid Suslonov, and Marina Rezepova, a Kosmokarta expert.

Sojuzkarta was organized in January

They showed us their new technique for globe production. The new process involves pushing a heated stainless steel ball into a piece of plastic...

Sojuzkarta was organized in January 1987 to represent the 25 Enterprises and 11 Map Factories of the GUGK...

1987 to represent the 25 Enterprises and 11 Map Factories of the GUGK and to increase their activities in the area of foreign trade. Their operations are monitored by the State Committee of Economic Affairs and the Foreign Trade Ministry. At this time, their foreign trade has increased 5 to 10 times since the programs began. There are 35 people assigned to the operation in Moscow, all of whom worked in the GUGK at one time.

Within Sojuzkarta there are three firms or divisions: Aerogeodesia, Geodetic Equipment, and Kosmokarta. There are three scientific subdivisions: The Moscow Institute of Geodesy, Aerial Surveying and Cartography; the Central Scientific Research Institute of Geodesy, Air-survey and Cartography; and an institute in Novosibirsk.

### **Mission**

The Aerogeodesia firm is responsible for geodetic work in foreign countries as well as for map compilation and air survey. The Geodetic Equipment firm is responsible for the export and import of instruments for geodesy and photogrammetry, as well as for other industries. The Kosmokarta firm is responsible for satellite images for maps, globes, and atlases.

In terms of cartographic products, they have over 1,000 titles of maps and atlases, of which 350 titles are available for export at this time. Among the products included are thematic maps, school maps, and tourist maps. The Soviets believe that they have good products and that there is a world market for them. They would like to improve their production capability to meet foreign requirements and are anxious to finish the third edition of their World Atlas. By 1990 they hope to be selling their 1:250,000- and 1:200,000-scale maps and the new topographic maps of Moscow and Leningrad to the Soviet public and, later, to the outside world.

As far as satellite images are concerned, they are very interested in selling services as well as the photographs. They are promoting the use of these data for map revision and stated a willingness to do the geodetic field work necessary to improve the accuracy of the maps of any country. They believe the worldwide demand is high

and that these data can be used in all types of earth science activities.

An important key to success will be the move to a hard currency by the Soviet Union. At the present it is difficult for them to deal in international markets without it.

### **Services**

The Aerogeodesia firm conducts geodetic surveys, does engineering surveys and gravity work, and makes topographic maps or plans of cities for any customers through contracts. The Enterprises provide manpower and send people, planes, and equipment on projects. They are doing 1:100,000-scale mapping in South Yemen, Laos, Ethiopia, and Angola. They have a training center for satellite photograph use in Dusanbe, Tadjikistan.

### **Foreign Representatives**

In the United States, the exclusive agent for Sojuzkarta is Conti Trade Services in New York, a division of the Continental Grain Company of Fort Worth, Texas. In Japan, the agent is the Institute of Industrial Science in Tokyo. They are working to establish an outlet in Australia and have business arrangements with the socialist countries of Europe. The agent in France is the Institute Geographique National (IGN), and they are negotiating to produce topographic products jointly with Sweden. Relationships have also been established with Kuwait and with China.

### **Cosmonaut Dinner**

*At our closing luncheon, we were joined by Cosmonaut Victor Savinykh. After being bombarded with questions about his three trips into space, he suggested that we join him and his wife for dinner at his home. It is customary to take flowers to the women of the house so we set out, in the rain, to buy some from the street vendors. The 20-30 vendors in this neighborhood were very competitive. In fact they almost drag you to their stands in the hope that you will buy their flowers. A half dozen roses cost \$18.*

*The Savinykhs live in a small cluster of town houses that are three stories tall with a garage on the ground floor. The middle level houses the kitchen, dining room, and living room. The upper level of the home*

...they have over 1,000 titles of maps and atlases, of which 350 titles are available for export at this time.

As far as satellite images are concerned, they are very interested in selling services as well as the photographs.

...the exclusive agent for Sojuzkarta is Conti Trade Services in New York...

*has three bedrooms, a bath, and a study. There are large bear and wolf fur rugs on the study floor, and a blue and silver Soyuz-Apollo tapestry on the wall behind his couch. A small deck stretches across the back and overlooks a grassed backyard. The microwave oven, color TV, and VCR made it look and feel like a home in the United States. Once we met Bob the dog and Red the cat, we settled right in. Victor's wife was a champion sprinter and currently works as a coach.*

*Dinner consisted of caviar, meat platters, vegetables, and several edible grasses. One looked like green straws and was very salty. We also had bowls of pickled garlic bulbs, which we ate like popcorn. Mrs. Savinykh loved this garlic, and we decided this is why Victor doesn't mind being off in space for such long periods of time.*

### **Space**

*After dinner we sat and talked about Victor's trips into space. He said that the most difficult thing he had to do was to dock with the abandoned Salyut 7, which had suffered a complete electrical shut-down. This story is documented in the February/March issue of the Smithsonian Institution's 'Air and Space' magazine.*

*He said that it took two days to dock and stabilize the spacecraft and that it was so cold that he thought he would freeze to death. Exhausted by nine hours of work outside his transport vehicle, he could hardly use his hands. Before he went outside, he could stress-pull about 50 kilograms, but when he came back in, he could only pull 5. He spoke of the spectacular sunsets, of seeing volcanoes erupt, and of liking Seattle from above.*

*He invited us to his study where we tried on his space gloves and looked at all his models, books, and memorabilia from his missions. When he showed us his ceremonial hero of the Soviet Union medal, I asked if I could see the real one. He went to his desk and pulled out the bright red ribbon with the two solid gold stars attached. At the end of the evening he gave each of us two signed and stamped envelopes that had been in space with him.*

### **Thursday August 10, 1989**

The final meeting of the delegation was

held on August 10, 1989 at GUGK headquarters in Moscow, where Dr. Yashenko was joined by Dr. Kaleshnikov of the Council of Ministers and Cosmonaut Victor Savinykh, Rector of the Moscow Institute of Geodesy, Aerial Surveying and Cartography.

They were interested in our impressions of the facilities, products and activities, and they asked how we could cooperate in the future. They also asked us for suggestions on improving their maps to make them more marketable. They asked questions about pricing and wondered what we thought of the price of 2.40 rubles (\$3.90) for their new Moscow map. Dr. Yashenko mentioned that, at the 43rd Session of the United Nations, they had announced that in 1991 there would be a new Mir spacecraft to be used to study the ecology of the Earth and had asked that we consider participating in projects involving this vehicle. They plan to have both multispectral film and electronic sensor data return. The systems will not produce high-resolution data but will produce global coverage.

We discussed our respective salary structures. The Soviet field personnel are paid 5,000 rubles annually, (\$8,000) and are provided food and housing. They double this rate for those working in the Arctic. A medium range cartographer in Moscow receives 3,500 rubles annually (\$5,000). To compare this with a major purchase, we were told that a new car costs about 8–10,000 rubles or \$13,000–16,000.

In closing we agreed to exchange journals, to translate and publish articles in each other's magazines, newsletters, and journals; and of course to host them on a spring visit to the United States. Later that day we learned from Kaleshnikov that the Kremlin Council of Ministers had granted permission for the GUGK officials to come to the United States.

### **Soviet Visit to the United States**

On March 13, 1990, a six-person delegation consisting of a four-man delegation from the U.S.S.R.'s GUGK arrived at the USGS National Center in Reston, Virginia, for a reciprocal visit. They were accompanied by the Rector of the Training Institute and a member of the Council of Ministers who oversees the

He spoke of the spectacular sunsets, of seeing volcanoes erupt, and of liking Seattle from above.

They also asked us for suggestions on improving their maps to make them more marketable.

...we agreed to exchange journals, to translate and publish articles in each other's magazines, newsletters, and journals...

What happened on their visit to the United States, and where we go from here are topics for the next chapter of Cartographic Glasnost.

...we learned first hand how the planet looks from an altitude where political boundaries are not visible, but the intense beauty and fragile nature of Earth are clear.

GUGK operations. In addition to meetings with USGS officials, the Soviets were hosted by the National Oceanic and Atmospheric Administration, the Library of Congress, and the National Geographic Society. The group traveled to USGS field offices at the EROS Data Center in Sioux Falls, South Dakota, the Rocky Mountain Mapping Center in Denver, Colorado, and the Western Mapping Center in Menlo Park, California. While in Denver, they attended the annual meetings of the American Congress on Surveying and Mapping and the American Society of Photogrammetry and Remote Sensing.

What happened on their visit to the United States, and where we go from here are topics for the next chapter of Cartographic Glasnost. Currently, we are requesting State Department approvals to establish a protocol, that could involve additional visits, the exchange of lecturers, and the possibility of several joint projects.

#### CONCLUSION

This article has to do with an exchange of visits between officials of the national mapmaking organizations of the United States and the Soviet Union. It reflects, I hope and believe, the essence of our official contacts, as well as some flavor of an enlightening trip to that vast country

straddling Europe and Asia.

As in any profession there is a certain camaraderie and respect for such things as techniques, procedures, standards and, certainly, technology. Now that we have visited our respective hometowns and offices and have a good understanding of how we each do our work, we hope to continue this international dialogue. There is, however, another, more personal dimension to the historic experience of the exchange.

On both sides, we are map-makers—men and women who take pride in the accurate representation of spatial data. But, having shared experiences and swapped stories from Minsk to Rapid City and from the Baltic to the Pacific, we find that we have much more in common than just our line of work. Through Savinykh, we learned first hand how the planet looks from an altitude where political boundaries are not visible, but the intense beauty and fragile nature of Earth are clear. The links between us, made possible by the political instrument known as Glasnost, finally transcended politics. Like the ancient mapmakers, we were there first to see and record something of human import—not a continent or an ocean, but events that are transforming our world and our time without regard for what meridian they fall on.



Figure 22. Sunset over Red Square.

# Special Report: Promoting the Use of Maps and Spatial Data

## Maps and Spatial Data in the Information Age

George F. McCleary, Jr., and Richard L. Branham  
University of Kansas

As never before, we must understand the needs and capabilities of map users.

The basic uses of maps will be the same: Maps will still be employed as displays and instruments for wayfinding and environmental management.

In the same way that it has created desktop publishing, the information age will democratize maps and mapping...

As we enter the last decade of the twentieth century, we in “the map business”—entrepreneurs, archivists, producers, information specialists, librarians—are confronted by three questions:

1. **Where are we?**
2. **Where do we need to be at the end of the decade?** and
3. **How are we going to get there?**

### 1. **Everyone is moving rapidly into the information environment of the post-industrial era (Bell 1976; Masuda 1980).**

If plastics, photogrammetry and photolithography (as well as World War II) created thousands of “instant cartographers” (Robinson, Morrison and Muehrcke 1977, 4), then the democratization and objectification of information which is now underway will create millions of new independent map producers. Further, as the demands for environmental information increase, the number of map users will grow at an even faster rate.

The basic uses of maps will be the same: Maps will still be employed as displays and instruments for wayfinding and environmental management. But the applications of maps as information systems will become more sophisticated, and users, individually and collectively, will become more variable in skills and abilities; there will be more complex attitudes and perspectives toward the map and the environment.

Map users, with the counsel and tutelage of sellers and lenders, will come much closer in contact with original data and become personally responsible for the interpretation and transformation of the new wealth of digital data to graphic display. In the same way that it has created desktop

publishing, the information age will democratize maps and mapping; the potential opportunities and the resulting problems are awesome.

We can, perhaps, for a few moments more, remain archivists—either (as producers) storing data on the map or (as librarians and dealers) storing maps in anticipation of their retrieval and use. But we shall eventually have to implement new technologies, and we shall be handling new forms of data in greater quantities.

It is not simply that we must learn to use and adapt to these changes. We are a focal point not only for transferring data but also for communicating methodology and helping users develop the level of understanding required to accomplish map-based tasks. This is at least one stage beyond Pratt’s Collection-Processing-Organization-Dissemination (CPOD) System (1982), for beyond dissemination (or even antecedent to it) lie the tasks associated with developing user appreciation and education.

### 2. **Where do we need to be at the end of the decade?**

As never before, we must understand the needs and capabilities of map users. Fundamental here are the issues associated with visual literacy and our part in helping educate the map users of the present and the future about the nature of maps and their utility. It is clear that most people deal awkwardly with complex ideas expressed in graphic form. Charts, graphs, and maps are extremely useful and, appropriately developed, provide important insights into the data displayed and the reality represented (Bertin 1981); nevertheless, such displays are often difficult to understand.

Illiteracy has compromised the quality of communications not only in terms of understanding and comprehension but also, and more important, in terms of performance and behavior.

In most instances the services which accompany the printed sheet, the microform, and the digital data base are more significant than the map or the data.

No single technique will work with the diverse array of users and products involved in "the map business."

Everyone depends on some form of promotion.

Wurman (1989, 1991) provides insight into a number of the dimensions of this problem.

The problem will be to find some way to aid in the democratization of information in a society with an abundance of visual illiterates. Illiteracy has compromised the quality of communications not only in terms of understanding and comprehension but also, and more important, in terms of performance and behavior.

"The map business" is a service industry. In most instances the services which accompany the printed sheet, microform, or digital data base are more significant than the map or the data. One can view "the map business" not as a goods-producing process but as a "customer-satisfying process" (Levitt 1986), not as an information delivery system but as a user-focused educational process. A significant reorientation of perspective seems appropriate.

**3. How will we get there?** Use and user. Product and producer. These pairs, if not united by chance, find a merger through a promotional scheme. In some cases this is achieved by advertising or marketing; in other instances it occurs simply because the user with a need for a map found one.

The theme for this issue of *Meridian* addresses this common problem, one which all of us in "the map business" share: How to get maps and spatial data to those who need and use them. In some situations this is not a problem, for the user is aware of the utility of maps. Such a situation is characteristic of military organizations, which support not only their own archives but also their own production centers. In other cases there are map users who struggle to find the right document and, unfortunately, carry out their activities inefficiently because the map confounded the task that it was expected to support.

Some libraries find a seemingly limitless array of users, but few can say that they are overrun. There are many maps sold, but one would have to search a long time to find a vendor who has achieved the optimum position in the marketplace. Everyone depends on some form of promotion. Sellers and lenders look for customers and borrowers. The relationships and interdependences among these

groups are cemented together by different forms of promotion and marketing. In some cases, the promotional emphasis is on advertising and publicity, while in other instances personal selling and sales programs are more significant. Each type of promotion serves a different function and complements the other types. The advertisements and publicity which reach large audiences contrast with the one-to-one contact involved in personal selling (Evans and Berman 1987). No single technique will work with the diverse array of users and products involved in "the map business."

We are no longer simply custodians and sellers of static representations of a past reality (or even of the new "dynamic data"). We are teachers and counselors engaged in the promotion of geographic literacy as well as in the creation and promulgation of information that will, in the hands of those who make the decisions, shape the physical, economic and behavioral landscapes of the future.

#### LITERATURE CITED

- Bell, Daniel. 1976. *The Coming of Post-Industrial Society: A Venture in Social Forecasting*. New York: Basic Books.
- Bertin, Jacques. 1981. *Graphics and Graphic Information-Processing*. Translated by William J. Berg and Paul Scott. Berlin: Walter de Gruyter.
- Evans, Joel K. and Berman, Barry. 1987. *Marketing*. Third edition. New York: MacMillan.
- Levitt, Theodore. 1986. *The Marketing Imagination*. New, expanded edition. New York: The Free Press.
- Masuda, Yoneji. 1980. *The Information Society as Post-Industrial Society*. Tokyo: Institute for the Information Society.
- Pratt, Allan D. 1982. *The Information of the Image*. Norwood, N. J.: Ablex Publishing.
- Robinson, Arthur H., Morrison, Joel L., and Muehrcke, Phillip C. 1977. "Cartography 1950-2000." *Transactions, Institute of British Geographers* 2, 1: 3-18.
- Wurman, Richard Saul. 1989. *Information Anxiety*. New York: Doubleday.
- . 1990. *USATLAS*. New York: Access Press.

# County Mapping and Mass Markets in America: Early Lessons in the Success of Targeting?

Michael P. Conzen  
University of Chicago

The nineteenth century county land-ownership wall map and, later, atlas are well known to students of American commercial cartography. Their distinctive style and general charm have long captivated local historians and more recently lured serious collectors reaching for a genre less scarce than seventeenth and eighteenth century maps of America. The question of their relative scarcity, however, bears a clear relationship to the scale of territory they represent and the size and location of their intended audience. Unlike maps of the whole North American continent or large parts of it, or even of states, commercial maps of American counties grew up only when map-makers discerned a potential interest in them among local populations, and devised strategies to exploit that interest. What emerged was a new twist to the mass marketing of maps: a concerted effort to approach large numbers of people in a restricted territory and persuade them that—even if it had never entered their mind before, and even if they had no prior interest in maps—now was the time to buy the future rights to a copy of one showing their own locality that was promised to be made, “if the proprietors meet with sufficient encouragement.” By the early 1850s an era of unprecedentedly aggressive map marketing had begun.

Many good accounts have familiarized us with the general outlines of map salesmanship in America up to the middle of the nineteenth century. Printers, booksellers, and map-makers retailed maps of many types from urban establishments through over-the-counter sales. Informal networks of producers and retailers helped supply specialized wants, given time. Maps were more or less precious, sought out largely by those with education and geographical curiosity, and definitely by those with need for knowledge of distant parts. Additionally, many map-makers solicited support

for their maps through advance subscription and block orders from governmental agencies at various levels and from schools. But these latter initiatives, if they were made at all, were usually among a fairly dispersed set of officials and interested parties. Maps of the nation or of a state had the potential to appeal to many, but often that “market” was diffuse and hard to reach. Hence, the practical limits on map sales in the early days. What the makers of county maps and atlases discovered was that, suitably embellished with landowners’ names, local business directories, marginal urban plans and lithographic views, such maps could be purveyed to large numbers of very ordinary households within a concentrated field—the confines of a single county. Thus, the traditional, solitary, itinerant map peddler, hawking odd copies of this map or that of vast and distant lands, encountered stiff competition from a new breed of map sales force: the “lightning” men and their follow-up team of door-to-door salesmen pressing farmers and merchants to subscribe to the first detailed, accurate map of the local county, showing off “the progress of the area and the achievements of its citizens.” These new products, featuring the minute geography and real estate pattern of a whole county at a time, required intense but short-term research into land office plats and local property records, rounded off with annotation of the resulting maps by field sketching from personal reconnaissance.

As the genre developed and a “formula” emerged by which county after county received map or atlas treatment, the nature of the map-making enterprise also changed. From small, one- or two-man operations in which the cartographer often was likewise the researcher, publisher, salesman, and distributor of the maps, a transition occurred to large production firms in which the map-maker played a diminished role as

What emerged was a new twist to the mass marketing of maps: a concerted effort to approach large numbers of people in a restricted territory...

As the genre developed and a “formula” emerged by which county after county received map or atlas treatment, the nature of the map-making enterprise also changed.

managers, stringers, and clerks gained ground. The largest firms, F. W. Beers & Co., D. J. Lake & Co., Warner & Beers, and later George A. Ogle & Co., evolved sophisticated strategies for targeting counties for treatment, phasing their operations so that the production and sales forces could be moved around a region from one county to the next without breaking stride, publishing up to six and even as many as ten atlases a season. Most of these firms carved out regional niches within which they were the dominant players, but the beauty of targeting individual counties lay in their sheer abundance.

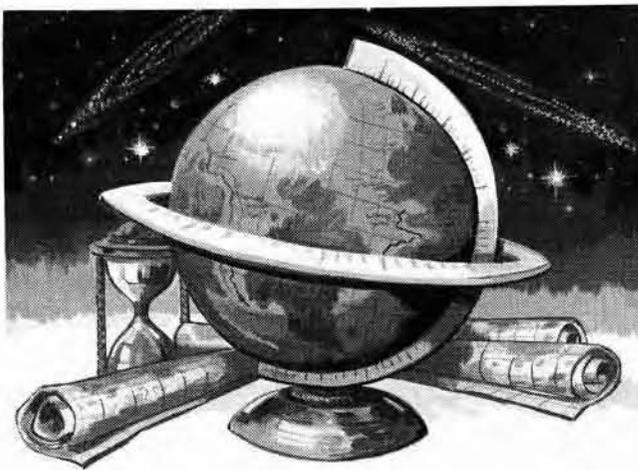
Confident that their product had popular appeal—as advertisements, in effect, for regional economic development, and as flattering confirmation of the emergence of a functioning new social order, complete with its material accoutrements county map and atlas firms found well-populated and prosperous counties sitting ducks for their marksmen, and they found them in many parts of the country. Modernized versions of these maps and atlases are published to

this day in some rural parts. Not surprisingly, this genre of mapping could produce, with capable hands, substantial profits. While there were sometimes appalling financial risks, as the size of investments needed to be “major players” grew, and many such map-makers were lucky to break even, nevertheless, the county landownership map and its by-products provided a handy early lesson in the value of targeted mass marketing, and produced by the 1870s and 1880s a number of what may have been America’s first millionaire map-makers.

#### FURTHER READING

- Conzen, Michael P. 1984. “The County Landownership Map in America: Its Commercial Development and Social Transformation, 1814–1939.” *Imago Mundi* 36: 9–31.
- . 1990. “North American County Maps and Atlases.” In Buisseret, David, ed. *From Sea Charts to Satellite Images: Interpreting North American History Through Maps*. Chicago: University of Chicago Press. Pp. 18–21.

...complete with its material accoutrements county map and atlas firms found well-populated and prosperous counties sitting ducks for their marksmen...



“Journey all over the universe in a map.”

—Cervantes. *Don Quixote*



A Federal Depository Library

# GEORGE RITZLIN

## MAPS & BOOKS

Specialists in antiquarian maps and atlases,  
and cartographic history.



POST OFFICE BOX 6060  
EVANSTON, ILLINOIS 60204  
(708) 328-1966



# The Strange Case of F. W. Beers and The Atlas of New York and Vicinity

Barbara B. McCorkle  
Yale University

United States county atlases, a uniquely American genre, are beginning to receive the attention they deserve. Norman J.W. Thrower first explored the field in 1960. More recently, Michael Conzen and Walter Ristow have written about these atlases, and of course, as the primary resource, Clara Egli LeGear's two-volume American atlas bibliography lists 1047 county atlases published between 1864 and 1900. These authors have studied and written about the genre as a whole, sketching its developmental history, publishers, geographical distribution, and particular characteristics. It is a vast field and one worthy of close examination, because an analysis of these atlases can yield valuable information on hitherto undescribed publishing practices.

Frederick W. Beers was active in producing county atlases. He was a member of a large family of county map publishers in Newtown, Connecticut, and eighty atlases appeared under his own imprint in the later decades of the nineteenth century.

Among the atlas holdings of the Yale University map collection are six copies of Beers's *Atlas of New York and Vicinity*. Examining their title pages explains an apparent duplication. Three are identical; two more, while differing slightly from the others, are the same; and one stands alone, with citations for different assistants and a different date, 1868 instead of 1867 (fig. 1). Using this method of comparison, it appears that Yale owns three different editions and holds three duplicate volumes. But upon examining the tables of contents, it becomes clear that there is no duplication; each volume is a different publication.

There are previous indications of the existence of variant editions of the *Atlas of New York and Vicinity*. LeGear includes three entries for the title (numbers 2539, 2541, and 5694) and seven are included in the *National Union Catalog* (1969, 200). A careful reading discloses discrepancies among the four entries whose collations include the number of maps. These differences are a further indication of the existence of variations.

There are previous indications of the existence of variant editions of the *Atlas of New York and Vicinity*.

Table 1. The six Beers' atlases, with number of maps per county.

<b>Atlas 1 (1868)</b>	Maps	<b>Atlas 2 (1867)</b>	Maps
New York City and County	5	New York City and County	2
Westchester County	38	Westchester County	26
Putnam County	7	Putnam County	8
	50		36
<b>Atlas 3 (1867)</b>		<b>Atlas 4 (1867)</b>	
New York City and County	2	New York City and County	2
Dutchess County	32	Dutchess County	14
Westchester County	19	Westchester County	19
Putnam County	8	Putnam County	6
	61		41
<b>Atlas 5 (1867)</b>		<b>Atlas 6 (1867)</b>	
New York City and County	2	New York City and County	2
Fairfield County	33	Fairfield County	33
Westchester County	16	Westchester County	16
Litchfield County	6		51
	57		

Several years ago, intrigued by a first encounter with this title when Yale owned four copies, a search was undertaken to locate other variants. Two more were discovered and added to the collection. It became apparent that this technique is a marketing concept familiar to twentieth-century eyes, but probably not one expected to be found in the nineteenth century.

Advertising in *Time*, *Newsweek*, and other magazines with large national circulations pinpoints particular regional markets, a good business practice made possible by modern computerized methods. Analysis of the Beers's atlases demonstrates that this nineteenth-century entrepreneur targeted his markets in much the same way.

Beers's three main markets for the *Atlas of New York and Vicinity* were Westchester and Dutchess counties in New York and Fairfield County in Connecticut. Putnam County, sandwiched between Dutchess and Westchester counties, was too small to be a

single market and was included with the larger counties. Beers tailored the contents of the atlases carefully. He prepared 137 maps for the area he called "New York City and Vicinity," but no one atlas had more than 61 maps, and one had as few as 36 (see table 1). Of the six Yale atlases, two may be considered Westchester County atlases, two Fairfield County atlases, one a Dutchess County atlas, and the last a Dutchess County/Westchester County atlas. A brief listing of the contents of the atlases, by county, and coverage, shows the distribution of their contents.

Only nine maps appear in all six editions: a large folding map entitled "New York City and Vicinity" (covering the area of Northern New Jersey, Long Island, the Bronx, Rockland, Orange, Dutchess, Putnam and Westchester counties in New York and Fairfield County in Connecticut), the "Plan of New York and Brooklyn," and seven maps of scattered townships in

Table 2. Contents of the six atlases<sup>1</sup>

Abbreviated Map Title	1	2	3	4	5	6
<b>New York Area</b>						
New York and Vicinity *	x	x	x	x	x	x
New York, Brooklyn, &c.	x	x	x	x	x	x
Tremont and Surroundings	x					
Fordham	x					
Woodlawn Cemetery	x					
<b>Westchester County</b>						
West Farms, Westchester, and						
Morrisania		x	x	x	x	x
Morrisania and West Farms	x					
Town of Yonkers		x	x	x	x	x
City of Yonkers		x	x	x		
East Chester, Pelham, and						
New Rochelle		x	x	x	x	x
Borough of New Rochelle *		x				
Town of Greenburg		x	x	x	x	x
Beekmantown, Tarrytown, . . .		x	x	x		
Towns of Mamaroneck, Scarsdale, White Plains, Rye . . .		x	x	x	x	x
Villages of Mamaroneck and						
Rye Neck		x	x			
Borough of White Plains		x	x	x		
Village of Port Chester		x	x		x	x
Town of Mt. Pleasant, and						
villages of Pleasantville, . . .		x	x			
North Castle, Kensico, and						
Armonk		x	x	x	x	x
Town of Ossining and Sparta		x	x			
Borough of Sing Sing		x	x	x		
New Castle and Chappaqua		x	x	x	x	x
Mt. Kisco, Bedford . .		x	x			
Town of Bedford		x	x	x	x	x
Town of Poundridge		x	x	x	x	x
Town of Lewisboro . . .		x	x	x	x	x
Town of Cortlandt . . .		x	x	x	x	x
Borough of Peekskill		x	x	x		
Verplanck, Cruger's, . . .		x	x			
Yorktown, Shrub Oak, and						
Jefferson Valley		x	x	x	x	x

Abbreviated Map Title	1	2	3	4	5	6
Town and Village of Somers	x	x			x	x
Town of North Salem . . .	x	x			x	x
Northern part of . . . Yonkers	x					
Hastings, Dobbs Ferry . . .	x					
Tarrytown and Vicinity	x					
Greenburg . . . Ashford, . . .	x					
Eastchester . . . Lakeville, . . .	x					
Village of Mount Vernon	x					
Pelham and City Island	x					
New Rochelle . . . Pelhamville	x					
White Plains, Scarsdale	x					
Mamaroneck, Orienta	x					
Harrison, Rye, Milton . . .	x					
Borough of Peekskill, . . .	x					
Mt. Pleasant, Ossining			x	x	x	x
Somers and North Salem			x	x		
Town of Westchester	x					
Wakefield, Olinville, . .	x					
Unionport, Westchester, and						
Schuylerville	x					
Yonkers (Spuyten Duyvil)	x					
Yonkers (Riverdale)	x					
Yonkers village*	x					
New Rochelle *	x					
White Plains *	x					
Town of Yonkers	x					
Sing Sing	x					
<b>Fairfield County</b>						
Town of Greenwich					x	x
Villages of Greenwich, Cos Cob					x	x
Town of Stamford					x	x
Enlarged plan of southern part					x	x
of Stamford					x	x
Borough of Stamford . . .*					x	x
Town of Darien, . . .					x	x
Town of Norwalk, . .					x	x
South Norwalk and Norwalk *					x	x
Towns of Westport, . . .					x	x
Village of Westport					x	x

He prepared 137 maps for the area he called "New York City and Vicinity," but no one atlas had more than 61 maps, and one had as few as 36.

Each of the six editions have at least two folded maps and several have nine.

Plotting the maps in each edition on township maps of the counties demonstrates a more precise application of Beers' marketing strategy.

Westchester County (North Castle, New Castle and Chappaqua, Bedford, Poundridge, Lewisboro, Cortlandt and Yorktown).

The large folding map, "New York City and Vicinity," is one of 22 folding maps Beers had in stock; these were detailed city plans, printed on fine, thin paper. Each of the six editions has at least two folding maps and several have nine. A complete set of the atlases is thus an excellent resource for detailed maps of the major cities in the four-county region. Beers's map stock also included 32 maps of Dutchess County (all appeared in atlas 3), and 33 of Fairfield (all of these appeared in atlases 5 and 6). None of the Westchester editions included all of the 53 stock maps available for the county. Plotting the maps in each edition on township maps of the counties demonstrates a more precise application of Beers's marketing strategy.

Atlas 1 was planned to appeal to a wide market. It covers all of Westchester and

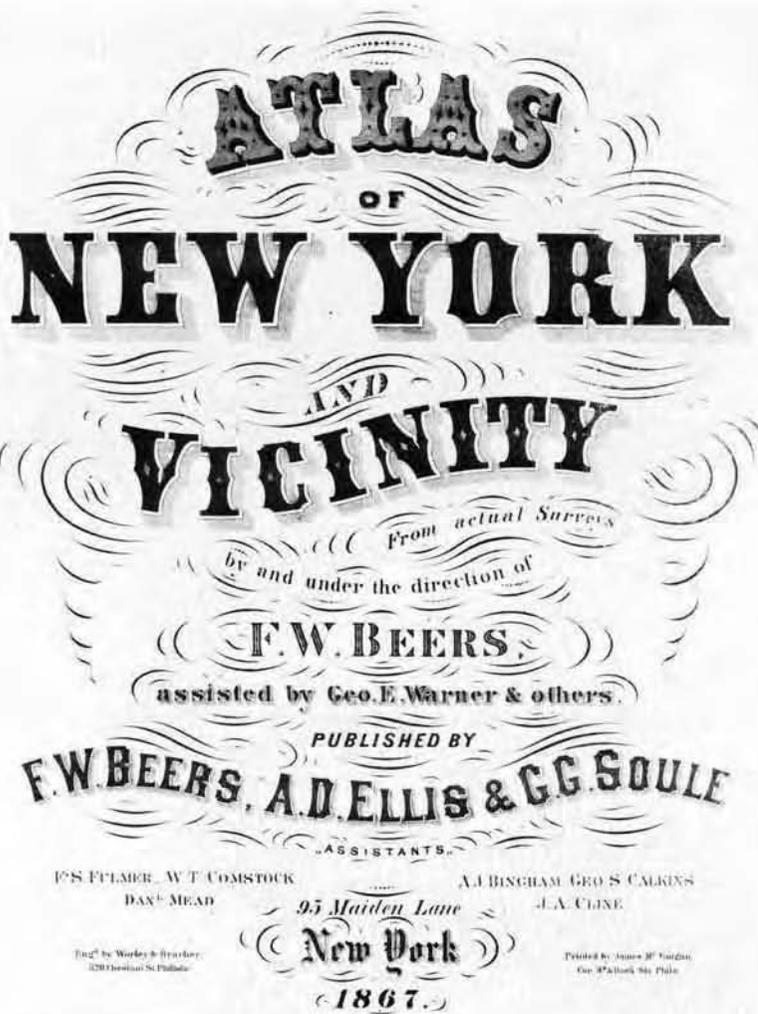
Putnam counties, with many detailed town maps. Obviously it was intended to capture the Greater New York City market, for it includes many small communities on the Westchester County/New York County border. This is the one atlas in the group with an 1868 publication date.

It seems a fair inference that the success of the 1867 Westchester County edition, atlas 2, spurred Beers on to increase the number of local maps when he prepared atlas 1 a year later. With only 36 maps, atlas 2 contains maps for the major townships of Westchester County, but lacks the detailed town and village plans found in the 1868 edition. Both atlases include maps of Putnam County, but the overlap is incomplete. Of the ten maps which constituted Beers's stock for Putnam County, all of which appeared in one or the other of these Westchester County editions, only five are common to both atlases: Carmel, South East, Brewster Station,

Abbreviated Map Title	1	2	3	4	5	6
Town of Fairfield					x	x
Villages of Fairfield, . . .					x	x
Town of Bridgeport					x	x
City of Bridgeport *					x	x
Town and village of Stratford					x	x
Huntington, Huntington Centre					x	x
Trumbull, Nichols' Farms					x	x
Town of Easton					x	x
Weston, Lyons' Plains, . . .					x	x
Wilton, North Wilton					x	x
Town of New Canaan					x	x
New Canaan and Ridgefield					x	x
Ridgefield, Titticus, . . .					x	x
Redding, Georgetown					x	x
Monroe, Stepney, . . .					x	x
Town of Newtown					x	x
Newtown, Sandy Hook, . . .					x	x
Bethel, Grassy Plain, . . .					x	x
Danbury, Mill Plain					x	x
Borough of Danbury *					x	x
Brookfield, Brookfield Centre, . . .					x	x
New Fairfield					x	x
Town and Village of Sherman					x	x
<b>Litchfield County</b>						
Town of New Milford					x	
Village of New Milford					x	
Town of Washington					x	
Villages of Roxbury, Chalybes					x	
Town of Bridgewater, . . .					x	
Town of Roxbury					x	
<b>Putnam County</b>						
Philipstown and Putnam Valley *		x	x	x		
Cold Spring and Nelsonville *		x	x	x		
Town of Carmel	x	x	x	x		
Carmel, Towner's Station		x	x	x		
Town of South-East	x	x	x	x		
Brewster's Station and Patterson	x	x	x	x		

Abbreviated Map Title	1	2	3	4	5	6
Town of Patterson	x	x	x	x		
Town of Kent	x	x	x	x		
Phillipstown and Putnam Valley	x					
Cold Spring and Nelsonville . . .	x					
<b>Dutchess County</b>						
Outline Plan of Dutchess Cnty *		x	x			
Fishkill, Glenham, . . . *		x	x			
Matteawan and Fishkill *		x	x			
Fishkill, Fishkill Cemetery		x	x			
Wappinger's Falls, Channingville		x	x			
East Fishkill, Johnsville, . . .		x	x			
Beekman, Beekmanville, . . .		x	x			
Town of Pawling		x	x			
Poughkeepsie & New Hamburg		x	x			
City of Poughkeepsie		x	x			
LaGrange, Washington Hollow,		x	x			
Unionvale and Verbank		x	x			
Town of Dover		x	x			
Dover Plains, South Dover, . . .		x	x			
Hyde Park and Staatsburg		x				
Hyde Park and Pleasant Valley		x				
Town of Pleasant Valley		x				
Town of Washington		x				
Villages of Washington, . . .		x				
Town of Amenia		x				
Amenia, South Amenia, . . .		x				
Town of Clinton		x				
Town of Stanford		x				
North-East, Millerton, . . .		x				
Town of Rhinebeck		x				
Borough of Rhinebeck *		x				
Rhinecliff, Clinton Hollow, . . .		x				
Town of Red Hook		x				
Villages of Tivoli, Madalin, . . .		x				
Village of Red Hook		x				
Milan, Jackson's Corners . . .		x				
Town and village of Pine Plains		x				

\* denotes folding map



Authorizing the use of the name of the State of New York in the title of this work, in the State of New York, in the year 1867, by the Board of Supervisors of the State of New York.



Authorizing the use of the name of the State of New York in the title of this work, in the State of New York, in the year 1867, by the Board of Supervisors of the State of New York.

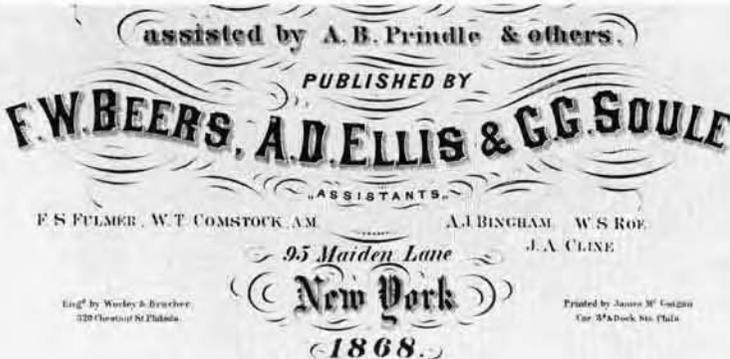


Figure 1. Title pages for the six atlases.

Patterson, and Kent. 1867 editions of the atlas contain two large folding maps, "Phillipstown and Putnam Valley" and "Plan of the Borough of Cold Spring and Nelsonville." Double-page maps of the same area and title replaced them in the 1868 edition. Whether this change was based on experience or expense is unknown.

The two Dutchess County editions were prepared for two different markets, the entire county (atlas 3) and its southern half (atlas 4). Each edition has the same eight maps for Putnam County and the same 19 for Westchester County.

The least variation between editions is found in the two Fairfield County editions (atlases 5 and 6), which seem to have been prepared for very similar markets. The only difference lies in the inclusion of six towns in the southern half of Litchfield County found in atlas 5. It could be assumed that atlas 6 was published first, and its success prompted the publication of atlas 5, with the addition of Litchfield County towns near Fairfield County's northern border.

Frederick W. Beers never published separate atlases of Dutchess and Fairfield counties. These markets had been sufficiently addressed with various editions of his *Atlas of New York and Vicinity*. Westchester County, however, must have been his most lucrative market and merited its own atlas, because in 1872 he published a separate *County Atlas of Westchester* with his father. Examination of its maps shows how closely Beers monitored his publications. The atlas contains 43 maps; 24 of them are based on plates which had appeared in his *Atlas of New York and Vicinity* and 19 are new. Each one of the 24 re-used plates was up-dated with changes and additions. Of the 19 new plates, eight are completely redrawn versions of maps which appeared in the New York atlases and 11 are maps of local areas appearing for the first time.

Revisions were not limited to those made for the Westchester County atlas. Beers's draughtsmen must have been kept busy in 1867 correcting plates for the various editions as numerous minor changes and reformattings were introduced. Both the Cortlandt plate and the Portchester plate have been found in three states. Map

numbers were changed for most editions, business directories were added or subtracted, and insets of villages changed location. It is clear that the *Atlas of New York and Vicinity* was not a static publication.

This survey of F.W. Beers's *Atlas of New York and Vicinity* does not presume to be complete; it reports the results of a ten-year search during which six different editions of the atlas were found. If Beers found that a multi-edition title was a profitable marketing device for the New York City area, other publishers may have used the same strategy for other major metropolitan areas. Seeing a county atlas title in a dealer's catalog, librarians may have assumed that it was identical to their copy, and ignored a variant. On the other hand, perhaps the publication of various editions of the *Atlas of New York and Vicinity* is a singular occurrence. Libraries and collectors with copies of these atlases are urged to compare them with those described and report any new variants.

**This survey of F.W. Beers's *Atlas of New York and Vicinity* does not presume to be complete; it reports the results of a ten-year search during which six different editions of the atlas were found.**

#### NOTES

1. Maps are arranged in the table roughly in the order in which they appear; the order may, however, vary from edition to

edition. Maps having the same apparent title are from quite different plates.

#### LITERATURE CITED

- Beers, F. W. 1867 and 1868. *Atlas of New York and Vicinity*. Philadelphia: F. W. Beers.
- Beers, J. B. and Company. 1872. *County Atlas of Westchester*. New York: J.B. Beers & Co.
- Conzen, Michael. 1984. "The County Landownership Map in America: Its Commercial Development and Social Transformation." *Imago Mundi* 36: 9-31.
- . 1984. *Chicago Mapmakers*. Chicago: Chicago Historical Society.
- LeGear, Clara Egli. 1950-1953. *United States Atlases*. 2 vol. Washington: Library of Congress.
- National Union Catalog: Pre-1956 Imprints*. 1969. Vol. 43. London: Mansell.
- Ristow, Walter W. 1986. "Newtown, Birthplace of Mapmakers." *The Map Collector* 36: 22-36.
- Thrower, Norman J.W. 1960. "The County Atlas of the United States." *California Geographer* 1: 7-16. Reprinted in *Surveying and Mapping* 21: 365-373.



## CIRCULAR A-16 REVISED

On 24 October 1990, the Office of Management and Budget released the revision of the Circular which describes the responsibilities of Federal agencies with respect to coordination of Federal surveying, mapping, and related spatial data activities. The revision replaces the document in force since 6 May 1967.

The major objective of this Circular is the development of a national digital spatial information resource, with the involvement of Federal, State, and local governments, as well as the private sector. This national information resource, linked by criteria and standards, will enable sharing and efficient transfer of spatial data between producers and users. Enhanced coordination will

build partnerships among government institutions and the public and private sectors, avoiding wasteful duplication of effort and ensuring effective and economical management of information resources.

Since spatial data (geographically referenced features that are described by geographic positions and attributes in an analog and/or computer-readable form) have multiagency interest, government-wide leadership will be carried out under the policy guidance and oversight of an interagency coordinating committee. Leadership in various facets of the effort will be the responsibility of the Departments of Agriculture, Commerce, Interior, State, and Transportation.

**The major objective of this Circular is the development of a national digital spatial information resource...**

# Historic Maps of Yosemite Valley and Vicinity

The following is a review of the maps that appeared in the bulletin of the Western Association of Map Libraries.

"An exquisitely reproduced set of nineteenth century maps of Yosemite Valley and the surrounding Sierra Nevada region, all originally found in monographs and nearly impossible to collect today. Each map comes with two or three pages of background information on the cartographer, origin, and significance of the map. These text pages prove an invaluable supplement for the map librarian and collector. The Joseph LeConte map does not show relief, but the other four depict relief by hachuring. The Wheeler map of Yosemite Valley is a truly remarkable example of American style hachuring taken to its ultimate expression.

"Great West Books has done a great service for the map library community in reproducing these maps. Every map library with a collection of national park maps should have this set."

- #1 - Map of the Yosemite Valley, 1865**, from surveys made by order of the Commissioners to manage the Yosemite Valley and Mariposa Big Tree Grove, by C. King and J. T. Gardner of the Whitney Survey.
- #2 - Map of a portion of the Sierra Nevada adjacent to the Yosemite Valley, 1863-1867 (Second Edition, 1874)**, from surveys made by Chs. F. Hoffmann and J. T. Gardner of the Whitney Survey.
- #3 - Topographical Map of the Yosemite Valley and Vicinity, 1883**, U.S. Geographical Surveys West of the 100th Meridian (the Wheeler Survey) from a topographical plat by Lt. Macomb.
- #4 - Map of a portion of the Sierra Nevada adjacent to the Yosemite and Hetch Hetchy Valleys, 1893**, by Joseph N. LeConte on behalf of the Sierra Club.
- #5 - Map of the Yosemite National Park, 1896**, Prepared for use of U.S. troops by N. F. McClure, 1st Lieut., 5th Cavalry.

- Please enclose payment with your order. We accept checks and money orders payable in U.S. funds.
- **Free shipping on all orders within the United States.**
- Maps will be rolled and shipped in mailing tubes via UPS. Please note that UPS deliveries cannot be made to a post office box address.

**Great West Books**  
**P.O. Box 1028**  
**Lafayette, CA 94549**  
**(415) 283-3184**

## Order Form

\_\_\_ Map #1 @ \$12.95 \_\_\_\_\_  
\_\_\_ Map #2 @ \$14.95 \_\_\_\_\_  
\_\_\_ Map #3 @ \$12.95 \_\_\_\_\_  
\_\_\_ Map #4 @ \$12.95 \_\_\_\_\_  
\_\_\_ Map #5 @ \$10.95 \_\_\_\_\_  
\_\_\_ Set of 5 maps @ \$54.95 \_\_\_\_\_  
CA addresses add 7.25% sales tax \_\_\_\_\_  
Total: \_\_\_\_\_

Name \_\_\_\_\_  
Address \_\_\_\_\_  
(Please Print) \_\_\_\_\_  
\_\_\_\_\_

# Mapping a Marketing Strategy

Dennis Trombatore  
University of Texas at Austin

The idea of a map includes a powerful strategic notion of foresight — that one should record relationships schematically to broaden understanding, refine knowledge, and reveal options for future action. This process is one of the essential steps in a careful marketing plan.

Given the map as a metaphor for planning and development, one would perhaps expect map collections to be leaders in answering the five basic questions of marketing and public relations that lead to innovation: **Who is your customer? What is your business? What is valuable to your customer? What will your business be? What should your business be?** (Kotler 1982). Sadly, that seems not to be the case. The literature of map and cartographic resource librarianship must begin to reflect a fundamental shift in concern to the definition, understanding and **creation** of new markets.

As shifting demographics, technologies and economic realities increase uncertainty and opportunity in our society, constant review of these five questions, and regular programs to update the answers, have become a requirement for organizational survival. Philip Kotler, the “father” of marketing for non-profit organizations, has described the surge in growth of interest in marketing for non-profits since 1969 (Kotler 1987). In an earlier article this writer has reviewed the basic concepts of marketing and public relations as they apply to non-profits, specifically earth science libraries (Trombatore 1987).

Today we see an emphasis on the importance of quantitative performance measures as the first stage in “mapping” reliable strategies to answer the five basic questions that govern the future of organizations (Kantor 1984; Van House 1990; White 1989), and a variety of books deal specifically with the role and methods of marketing for libraries (Kies 1987; Leerburger 1989; Roberts 1989; Rummel

1984; Weingand 1984; Wood 1988).

Curiously, amid this burgeoning area of library research, map collections are very scantily represented. Neither general summaries of marketing and PR for map librarians, nor specific case applications are well represented in the literature. Many of the papers that review the recent history of map collections focus on technological and organizational developments, with little mention of the user or performance (Hiller 1988; Larsgaard 1990).

Major map user studies (Hagen 1970; Ray 1974) are ancient considering the very real technological and organizational changes in libraries in the last 15 years. Even Mary Larsgaard’s milestone textbooks confuse advertising and marketing, and focus on the most traditional kinds of promotion through exhibits and publications aimed at existing users (Larsgaard 1978, 1987). The second edition of *Map Librarianship* offers only one significant difference from the first edition in concluding the chapter “Public Relations and Reference in the Map Library,” namely, that maps should be fully cataloged and on the library database (Larsgaard 1987). While this is a significant change, it fails to recognize the ever larger burden of accountability, fiscal resource competition, and expensive technological opportunity that map collections face.

Map librarians appear to be no different from a number of non-profit managers in their understanding of marketing and in their application or failure to apply basic marketing principles effectively. Many casual users of marketing terminology fail to realize that modern marketing begins with and rests on a **customer orientation**. A succinct definition is that, as opposed to organization-centered strategies oriented towards the needs and capabilities of product, production, or sales functions, customer orientation holds that “the main task of the organization is to determine the

Neither general summaries of marketing and PR for map librarians, nor specific case applications are well represented in the literature.

Map librarians appear to be no different from a number of non-profit managers in their understanding of marketing and in their application or failure to apply basic marketing principles effectively.

perceptions, needs, and wants of target markets, and to satisfy them through the design, communication, and delivery of appropriate and competitively viable offerings” (Kotler 1987, ch. 2).

Kotler goes on to enable this definition by proposing that success depends on developing a **customer-centered organization**, one which, within its mission and budget, places primary emphasis on detecting and satisfying the appropriate needs and wants of its clients.

Nonprofit organizations such as universities, or academic libraries, or map collections fail in predictable ways to achieve either of these postures, ways that trace back quite directly to psychology and bureaucracy. Kotler offers seven clues that reveal the discrepancy between assumption and action in most non-profit organizations (Kotler 1987, ch. 2):

- The organization’s offering is seen as inherently desirable. To be specific, any map librarian can wax rhapsodic on the utility, beauty, and significance of maps; there is in fact a small industry devoted to this endeavor.
- Lack of organizational success is attributed to customer ignorance, absence of motivation, or both. In spite of our conviction about the importance of maps, the fact is that we are often reluctant to surrender our maps to the user. We feel that most people aren’t clever enough, somehow, to see how much they need maps, but those who **are** must often be content to use the maps in the map collection, or for very brief periods of check-out. Map users are enemies who destroy maps.
- A minor role is afforded customer research. The literature shows little if any interest among map librarians in discovering just what it is that potential clients want, or how, in fact, they actually **do** satisfy their cartographic needs.
- Marketing is defined primarily as promotion. Our best authorities think the way to market their resources is by means of promotional brochures and displays.
- Marketing specialists are chosen for their product knowledge or communication skills. Most map marketing authorities are cartographic specialists who see more cartographic understanding as better qualification for marketing map use.

- One “best” marketing strategy is typically employed in approaching the market. What marketing there is, is aimed at encouraging the “primary user group” of geographers, geologists, demographers, and their students, all of whom know quite a bit about maps already, and can be counted on to be able to help themselves and to share our values.

- Generic competition tends to be ignored. Most of us have little if any information about how the behaviors that result in using maps can also be satisfied by other means, electronic or print-based, nor do we know how most people who do **not** use maps satisfy their needs for spatial/thematic/geographic information, or why they find those strategies easier, faster, friendlier, or more dependable.

Having committed all seven deadly sins of marketing misunderstanding, map librarians might consider the following steps (adapted from Kotler 1987, ch. 2) to improve their position:

- Rely on research to learn about our users and to anticipate changes in their needs.
- Routinely assume that “users” can best be thought of as a conglomeration of differing groups rather than one ideal type.
- Define marketing as a broad means to adapt services in a relevant and affordable way to these varied user groups rather than trying to change the users.
- Think in a creative way about what constitutes competition for the satisfaction of cartographic needs.
- And, crucially, work to engender in every person in the organization an attitude fully responsive to the client in order to achieve the organization’s stated goals and objectives.

Failure to adapt to a changing resource base, a changing technology base, and a changing customer base will place map collections in a very precarious position, as demonstrated by the fate of the American railroads. An organization cannot be content to continue doing what it has always done if that product or service no longer has a constituency, and the best way to survive is to find out what products or services are actually needed by target markets, and provide them for each target market better than anyone else.

Failure to adapt to a changing resource base, a changing technology base, and a changing customer base will place map collections in a very precarious position...

How can map librarians respond to these challenges to improve their survivability and enhance their service potential? First, they must realize they are part of large organizations that must be convinced change is needed. A "target market" is not just the fearsome horde of users that harried map collection managers are loathe to excite through advertising. A target market can be **any** group that is part of the map collection's network of exchange relationships. This includes users, who actually constitute a variety of potential target markets, but it also includes the significant group of managers who control the allocation of space, staff and resources.

Second, if it is true that "the only thing managers get credit for is innovation and marketing" (White 1989), then map librarians must decide how innovation will lead to resources for acquiring expensive new technological capabilities. We must begin by figuring out how to squeeze more "use" out of what we already have, to generate more excitement, and create/fulfill more users' needs.

This should be relatively easy to begin to do, since as of 1984 even among academic map collections only 56% circulated maps and 47% provided interlibrary loan. The averages for all collection types were 45% and 32%, respectively. This survey also shows 87% of map collections have access to a "copying machine" but the questionnaire did not ask whether a large sheet copier is available (Cobb 1986).

In the non-profit environment (or deep within large for-profit organizations) the linkage between administrative and user target markets supplants the traditional profit/R&D marketing scenario. Tying performance measures to the process introduces realism and honesty, and negotiators always welcome both. It is unrealistic to expect that map collection use will ever quantitatively resemble the pressure against a full service reference desk, but neither do microbreweries compete with Anheuser-Busch. Success must be measured in appropriate and relevant terms, for which baseline performance measures are needed (Kantor 1984; Van House 1990).

Map collections traditionally take up much precious floor space in a collection,

so a useful measure of value for the target market of library administrators may be to compare the map collection's percentage of total floor space to its percentage of total visitors. Increasing the number of visitors to the map collection may or may not affect actual use of resources, or user satisfaction, but the comparison may be an important distinction in planning.

To test this, it is necessary to either increase the total number of library visitors (attract **new** markets) or increase the proportion of library users who come to the map collection (increase market **share**), and then study which effort positively or negatively affected the desired outcome: to increase real services provided—actual user satisfaction. The results provide benchmarks for planning.

This could be done by placing a general "opportunity" to visit the map collection in the path of all library visitors, such as setting up a photocopy facility with copying services in the maps area, and tracking subsequent users to see if browsing resulted in increased inquiries and increased positive results. Alternatively, the map librarian could develop a presentation on the use of maps for schoolteachers (or other "outside" group) to see if actually luring interested parties directly to the map collection had any effect on the demand for services.

In these situations, any result is good because it gives the manager facts about baseline performance that are essential to accurate, honest forecasting of needs and realistic proposals for innovation. Giving up privacy and floor space to a copying service, seemingly bad ideas, would be irresistible bait to library administrators. This kind of innovation, coupled with shrewd negotiation, could lead to a payoff in new GIS workstations, improved services, and increased job satisfaction. Innovation is not just blue-sky risk and derring-do, it is the vital combination of imagination, careful planning and patient labor.

This kind of work is being done in map libraries, but we often don't recognize it as such. Mary Larsgaard talks about her risk taking in assuming a leadership role in a national association as a response to the need for more success in "the crucial matter of the monthly paycheck" (Larsgaard 1988). Her instincts told her that she could

**Map librarians must decide how innovation will lead to resources for acquiring expensive new technological capabilities.**

**Success must be measured in appropriate and relevant terms, for which baseline performance measures are needed.**

market this innovative "product" (officer of a national organization) to the library and university administration (who find this valuable and will reward it), measuring her success on payday.

Clearly map librarians, excited by their success at integrating with academic libraries over the last 20 years, and by the promise of a computer cartographic revolution, had now best put their talents to work mapping the institutional terrain of America in the 1990s, to find ways to make their rich resources integral to research, teaching and business. That is what marketing is all about.

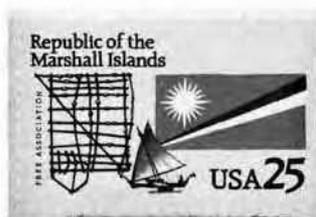
#### LITERATURE CITED

- Cobb, David A., compiler. 1986. *Guide to U.S. Map Resources*. Chicago: American Library Association.
- Hagen, C. B. 1970. "A Survey of the Usage of a Large Map Library." *SLA Geography and Map Division Bulletin* 80: 27-31.
- Hiller, Steve. 1988. "Mainstreaming of Map Libraries: Twenty Years of Integration Within Academic Research Libraries." *Western Association of Map Librarians Information Bulletin* 19, 3: 151-160.
- Kantor, Paul B. 1984. *Objective Performance Measures of Academic and Research Libraries*. Washington: Association of Research Libraries.
- Kies, Cosette. 1987. *Marketing and Public Relations for Libraries*. Metuchen, N. J.: Scarecrow Press.
- Kotler, Philip. 1982. *Marketing for Non-Profit Organizations*. 2d ed. Englewood Cliffs, N. J.: Prentice Hall.
- Kotler, Philip., et al.. 1987. *Strategic Marketing for Nonprofit Organizations*. 3d ed. Englewood Cliffs, N. J.: Prentice Hall.
- Larsgaard, Mary L. 1978. *Map Librarianship*. Littleton, Colo.: Libraries Unlimited.
- . 1987. *Map Librarianship*. 2d ed. Littleton, Colo.: Libraries Unlimited.
- . 1988. "Eighteen Years of Map Librarianship, Or, Will Someone Please Hand Me My Cane?" *Western Association of Map Librarians Information Bulletin* 19, 3: 126-128.
- . 1990. "Change in Academic Cartographic Materials Collections: Or, a Groundswell Revisited." *Western Association of Map Librarians Information Bulletin* 21, 2: 101-104.
- Leerburger, Benedict A. 1989. *Promoting and Marketing for the Library*. Rev. Ed. Boston: G.K. Hall.
- Ray, J. M. 1974. "Who Borrows Maps From a University Map Collection and Why?" *Special Libraries* 65, 3: 104-109.
- Roberts, Anne F., et al.. 1989. *Public Relations for Librarians*. Englewood, Colo.: Libraries Unlimited.
- Rummel, Kathleen K., et al, eds. 1983. *Persuasive Public Relations for Libraries*. Chicago: American Library Association.
- Trombatore, Dennis R. 1987. "Drawing Users and Services into Focus: Public Relations and Marketing in Earth Science Libraries." *Geoscience Information Society Proceedings (1986)* 17: 15-20.
- Van House, Nancy A., et al. 1990. *Measuring Academic Library Performance: A Practical Approach*. Chicago: American Library Association.
- Weingand, Darlene E., ed. 1984. *Marketing for Libraries and Information Agencies*. Norwood, N. J.: Ablex Pub. Co.
- White, Herbert. 1989. "Librarians and Marketing." *Library Journal* 114, 13: 78-79.
- Wood, Elizabeth J. 1988. *Strategic Marketing for Libraries: A Handbook*. Westport, Conn.: Greenwood Press.

The joint issue of a 25-cent stamp by the Republic of the Marshall Islands and the United States on 28 September 1990 commemorates the document which made the Republic fully self-governing in free association with the United States.

Designed by Herb Kawainui Kane, the

stamp shows the type of canoe used for long journeys among the atolls. Next to the canoe is a stick chart, a cartographic device used to teach navigation. Using reeds and shells, stick charts mark the locations of atolls and islands and show the pattern of wave movement.



# Institutions, Agencies and Organizations

The nature of the operations and the problems confronted by government agencies and libraries, other non-academic and non-commercial organizations which house map collections, and government agencies that produce maps are different from those encountered by academic libraries. These agencies and organizations do not exist (or survive) under the rules which govern the marketplace.

The major national map libraries, the Geography and Map Division of the Library of Congress and the British Map

Library, as well as the National Library of Scotland, contrast with the U.S. Geological Survey and the National Ocean Survey. Promotion for these agencies is different than that carried out at the New York or Birmingham Public Libraries or at the National and Royal Geographical Societies.

All of these contrast with the Louisiana Coastal Geographic Information System Network, which is breaking new ground not only in information management but also in promoting both the integration of spatial data and its use.

## Promoting the Map Library: The Scottish View National Library of Scotland Margaret Wilkes

Up until ten years ago, it was enough for map curators simply to exist. No one questioned this, suggested mergers with other departments, or assessed our cost-effectiveness. Harold Nichols in his classic British-published text, *Map Librarianship* (1976, revised in 1982), did not mention PROMOTION. It was not necessary to sell ourselves to ensure survival.

In the United Kingdom, recent government policy has resulted in financial cuts to both the public and educational sectors. This has now trickled through to the map curator, though he has often been sheltered behind the more obvious targets of books.

Today we have to sell ourselves in order to convince our funding managers. We have to improve our **credibility** in order to justify our position at the forefront of the electronic revolution. Many factors mitigate against this, not least that maps have less clout than books or manuscripts within a library. They appear less cost-effective in terms of staff time per user because statistics are wrongly measured.

**Promotion** is the key to credibility, and involves **outreach** and **inreach**. **Outreach** includes the giving of workshops, seminars and lectures to commercial, professional, educational and general interest groups. It

involves initiating contact with outside bodies at international, national, regional and local level and includes promoting the use of maps as illustrations both in publications and as decoration. The source should always be acknowledged and a fee charged. Lucrative educational packages can be arranged for schools and colleges and information about the collection and services sent to journals in a wide field. Above all, there is a need to fraternize closely with the map producer.

**Inreach** is the need to proselytize within one's institution, to seize all opportunities to put the map collection on show or to refer to it. It involves staff education and willingness to be the guinea-pig and to be at the forefront of any experiments, particularly if they lead to new equipment. It requires a measure of assertiveness, great flexibility, constant creativity and the development of a strong, lively image with good user relations. It is perhaps best expressed as the unquenchable spirit.

It is only with the dual development of our **outreach** and **inreach**, and the need to maintain these and to follow ever new lines and ideas, that we can move ahead successfully into the 21st century.

...there is a need to fraternize closely with the map producer.

It requires a measure of assertiveness, great flexibility, constant creativity and the development of a strong, lively image with good user relations.

## The Map Library of The British Library

The British Library Map Library, a special collections library within the United Kingdom's national library, shares its parent organization's central position in the library and information network of the British Isles, as well as its international reputation. The Map Library also shares the major challenge at this time of budgetary constraint of realizing the overall Library aim to serve scholarship, research, industry, commerce and all other users of information. Promotion of map use through the Map Library's varied services, already an important function, is taking on a new significance as plans progress for the move in 1996 to the British Library's new building currently under construction at St. Pancras, about a mile to the north of the present British Museum site.

An already high public profile brings many enquirers direct to the British Library Map Library, so there is no specific campaign to reach individuals at present. Other libraries and organizations also know of the Map Library and refer enquiries here. For example, the Ordnance Survey regularly refers requests for its out-of-print maps and plans to the British Library Map Library, whose copyright deposit collection of Ordnance Survey publications is the most comprehensive in the United Kingdom. Publicity about Map Library services and holdings is directed primarily at other libraries throughout the United Kingdom and abroad, keeping them informed about Map Library services and holdings through entries in library directories and staff participation in professional organizations. The Map Library provides the secretariat for the British Committee for Map Information and Catalogue Systems (BRICMICS), which represents the interests of map curators in the British Isles at the national level. The Map Library catalogue has also been published and is available for sale. Both on-site and remote access to the Map Library catalogue, hitherto an awkward mix of printed, microfiche and on-line formats, will be enhanced by the automation of the entire catalogue, augmented by added entries for cartographic holdings elsewhere in the British Library, in preparation for the

move to the new St. Pancras building.

The sweeping changes occurring in present-day cartographic technology are also causing the Map Library to rethink its traditional role of collecting and making available to readers conventional maps in printed form. One step already taken has been the appointment of the British Library in 1984 as the retrospective archive for remote sensing imagery of the United Kingdom. In addition to color composite imagery of the British Isles from 1972 onward, the Map Library maintains catalogues and browse film of remote sensing worldwide. Still unresolved is the impact on the British Library's copyright deposit status of the ongoing Ordnance Survey programme to revolutionize production of large-scale 1:1250 and 1:2500 plans, converting the information into a topographic database from which copies will be made on demand. The Map Library has not yet acquired any digital databases and their attendant hardware and will have to weigh carefully costs, staffing needs, archiving problems, and user demand before taking the plunge. The likely necessity of charging for the provision of digital cartographic information may mean that such services should be offered through the British Library Business Information Service rather than through the Map Library.

The general public who crowd the British Museum building have the opportunity to see not only selected maps on long-term display in the British Library exhibition areas, but also changing map exhibitions in the Map Gallery. Over the years, such short-term exhibitions have tended to emphasize the historical treasures of the collections. Past exhibitions have centered on the themes: "William Roy, 1726-1790: Pioneer of the Ordnance Survey" (1976-77), "Cartographical Curiosities" (1978-1980), "Christopher Saxton and Tudor Mapmaking" (1980-1982), "Mirror of the World" (1983-84, 1985-86), "Raleigh and Roanoke" (1984), and "The City in Maps" (1986-1988). Bridging the gap between maps of the past and modern cartography is the present exhibition, "What Use Is a

The sweeping changes occurring in present-day cartographic technology are also causing the Map Library to rethink its traditional role of collecting and making available to readers conventional maps in printed form.

The Map Library has not yet acquired any digital databases and their attendant hardware and will have to weigh carefully costs, staffing needs, archiving problems, and user demand before taking the plunge.

... resources in government organization cannot be adjusted as rapidly to meet changing needs as in the commercial sector.

Map?" All such exhibitions have been advertised through the British Library Press and Public Relations Office by means of press releases and posters. As well as free lists of exhibits, illustrated catalogues have been available for sale in most cases. The controversy over the Hereford "Mappa Mundi," until recently on temporary display in the British Library King's Library has also helped to draw public attention to the historical value of maps.

The Map Library has also occasionally been able to offer the facilities of the British Library for the hosting of map-related gatherings over the years. Most recently, these have included the Society for the History of Discoveries in 1987 and the International Map Collectors' Society in 1989. Smaller one-day workshops for members of the Charles Close Society for the Study of Ordnance Survey Maps have also been held in the Map Library, although seminar facilities in the present site are limited. Other small visiting groups with a particular interest in maps are also welcomed by appointment. Such occasions have presented the opportunity to introduce visitors firsthand to the Map Library holdings and to encourage them to take away that information and share it with others.

Several new leaflets explaining about holdings of maps in the Map Library and elsewhere in the British Library have been prepared and are available free of charge. These include a one-page leaflet about the "Map Library," a longer brochure about

"The Map Collections of the British Library" in general, and the "British Library Manuscript Map Guides: 1. Where Manuscript Maps Are Held in Britain, 2. How to Find Manuscript Maps in the British Library." Various selected reading lists are also available to enquirers.

It has recently been brought home to us that attempts to generate added demand for Map Library services must take into account the fact that staff and other resources in a government organization cannot be adjusted as rapidly to meet changing needs as in the commercial sector. For example, a recent mailing to inform Scottish libraries and archives about the availability of new photography of William Roy's 18th-century map of Scotland generated a gratifyingly good response but added to our work overload during a time of staffing shortage. Some activities not currently practicable, such as the regular hosting of groups of visitors or educational seminars, will be made feasible by the larger Map Library quarters in St. Pancras. A publicity campaign will be launched to encourage the public to visit and make use of the new St. Pancras facilities library-wide. However, considerations of economy will limit the number of services that can be offered free of charge. Conferences, exhibitions, and the like will all have to pay their way. Apart from a core offering of pre-funded services, expansion of Map Library activities in the future will increasingly require the Map Library to sell itself and its services in the information marketplace.

## The Geography and Map Division of the Library of Congress Ralph Ehrenberg

Although through time its constituencies have been expanded to include federal agencies, the public and research communities, and the library community, the Geography and Map Division was established and is funded principally to serve the Congress of the United States.

First and foremost, the Geography and Map Division is responsible for building

and maintaining a collection of over four million maps and 53,000 atlases, augmented annually by thirty-to-fifty thousand maps, charts, and atlases from a variety of sources. Although the paper map remains the primary map type acquired, cartographic data in other media — particularly microfilm and remotely sensed data — now form a major portion of these additions.

The bedrock of the division's research program is the *Bibliography of Cartography*.

We hope to improve our information and referral responsibility by taking advantage of on-line bibliographic databases which can provide access to maps found in periodicals, reports and books.

Information about our collections is shared through the distribution of bibliographic records.

During the past decade, core collections have been microfilmed as part of a preservation project. In addition, microform reproductions of maps from major archives, libraries, and mapping agencies in Canada, France, Great Britain, Italy, the Netherlands, Panama, Spain and the United States have been purchased. The Division's microform collection contains more than 700,000 images. In 1985 we acquired a browse file that provides access to nearly seven million worldwide remotely sensed images. This file consists of 650,000 black and white Landsat images, 1.5 million conventional and color infrared photographs, 85,000 handheld color images from the Apollo, Gemini, Skylab, and Space Shuttle missions, and photomosaic indexes of some 4.5 million conventional aerial photographs taken by USGS, National Ocean Survey, and the Agricultural Stabilization and Conservation Service.

The microfilm collection and a browse file of remotely sensed imagery add new dimensions to our reference service. The microfilm allows us to offer faster, more efficient service to readers while protecting the original documents. The browse file aids readers in identifying particular images which they might wish to order. Here, the Division functions more as a referral library than a reference library.

The Geography and Map Division shares with other national map libraries a role as a major world center for scholarly research relating to cartography and geography. The twin-foundation of the Division's position in cartographic and geographic research is derived, on the one hand, from the intrinsic value and the comprehensive nature of the cartographic collection, which dates from the fourteenth century and covers virtually every country and subject and, on the other, from an experienced, mature staff of thirty-five professional librarians, specialists, and support personnel who provide the essential connection between scholars and the collection.

The bedrock of the division's research program is the *Bibliography of Cartography*, an analytical catalog containing some 130,000 entries concerning the literature of maps, mapmaking, and the history of cartography. Another essential element of

our continuing effort to connect scholar and collection are the published cartobibliographies which direct researchers to individual collections or special subjects of high research value. Since its establishment in 1897, the Division has published almost fifty cartobibliographies devoted to specific geographic areas, special categories, separate collections, or specific subjects. Scholarly access to the collections is further encouraged by the special studies conducted by Division specialists as well as by the sponsorship of professional meetings and conferences.

The third distinct activity has been gradually assumed by the G&M Division, that is, its role as a national and international cartographic and geographic information and referral center. In recognition of this responsibility as a major reference and referral center, staff members have been active over the years in preparing directories describing the holdings of other map repositories. In the near future, we hope to improve our information and referral responsibility by taking advantage of on-line bibliographic databases which can provide access to maps found in periodicals, reports and books from a variety of disciplines as well as relevant geographic information.

This continuing effort to improve access to collections brings us to the fourth major role of the G&M Division, which is its unique responsibility for the establishment, maintenance, and dissemination of national standards for cataloging rules for maps and atlases — the machine-readable map cataloging system (MARC Maps) and the Anglo-American Cataloging Rules (AACR-2), for the G classification schedule for maps and geography, and for the authority file of geographic place names.

The fifth and final mission of the Geography and Map Division is to share its resources with the national and international map library communities. In this instance the Division facilitates the linkage of our resources with map librarians. Information about our collections is shared through the distribution of bibliographic records. At the outset, map cards were provided; these three-by-five inch catalog cards were replaced by the automated cataloging apparatus of the MARC Maps program. The *National Union Catalog for*

*Cartographic Materials*, which the Library began issuing as a separate register/index in computer output microform in 1983, is another cooperative effort linking the Division with the map library community.

Information about the technical aspects of processing and maintaining cartographic materials is disseminated to the map community through publications, workshops, and tutorials. In addition to sharing information about our resources and processes, we also share our collections. Most notable has been our summer Special Map Processing Project in which we exchange surplus-duplicate maps for work on various tasks related to technical processing, bibliographic control, and reference services. During the thirty-seven year history of this project, the Geography and Map Division distributed more than two million surplus maps to libraries throughout the United States. We now share our collections with the library community through the preservation map microfilm program.

Today we find ourselves in the midst of a

major revolution in technology, a revolution that will ultimately and profoundly alter the way we collect, manage, analyze, and display geographic data. The method of preparing maps has been altered dramatically with the advent of digital data, instantaneous interactive processing capabilities, and CRT displays.

Currently, map libraries serve simply as repositories for the final products of the map making process—the printed maps. The cartographic library of the future will store and service basic raw materials for maps in a form which will permit our readers to participate directly in the map making process.

In the midst of this revolution, our responsibilities will not change, but the style of our operation will. While we shall continue to promote, encourage and aid our patrons in the use of maps and spatial data, we shall do so with different formats and approaches. We shall continue to be a national center for cartography, cooperating and exchanging information and resources.

The cartographic library of the future will store and service basic raw materials for maps in a form which will permit our readers to participate directly in the map making process.

## Marketing at the National Ocean Service

Peggy Harper

The National Ocean Service (NOS) in the National Oceanic and Atmospheric Administration (NOAA) has entered the age of marketing. The charts and maps it produces vie for a share of the market characterized by high-tech cartographic products.

Maintaining its share of the marketplace is impacted by Federal legislation that requires the NOS charting program to recover the full costs of data base management, compilation, reproduction and distribution through the sale of its products. In the case of nautical charts, the price almost tripled. These higher prices along with the availability of alternative products in the private sector contributed to declining paper chart sales. To combat this trend, NOS embarked on a marketing program that embraces new technology and evolving user requirements within the Federal framework and policy guidelines.

NOS provides accurate nautical and aeronautical charts, maps and related products vital for safe navigation in both the navigable waters of the United States and the National Airspace System. In support of the charting program, NOS performs hydrographic, geodetic and photogrammetric surveys. These surveys, along with processed data from numerous other sources, result in a suite of over 980 nautical charts, 500 bathymetric and coastal maps, and 10,000 aeronautical charting products, all within the public domain. NOAA's reproduction and distribution functions support the production of the 2.8 million marine products and over 10.3 million aeronautical charts and publications produced annually.

The NOS charting mission includes control over its product, product quality (in both chart construction and production) and product distribution, all of which are

...higher prices along with the availability of alternative products in the private sector contributed to declining paper chart sales.

essential to an effective marketing program. In 1983, NOS began to evaluate a marketing approach for the effective integration of these resources.

Although NOS participated in trade shows, distributed new product press releases, and advertised through available outlets, none of these activities were part of a structured marketing program. No marketing research was available to support or evaluate the effectiveness of such promotional campaigns.

In 1984, NOS conducted a formal marketing study to determine both the requirements for its nautical chart products and the effects of proposed price increases on chart sales. Although internal sales figures were previously analyzed, this study represented NOS's first formal marketing study that provided insight into who used NOS charts, and how NOS charts were perceived relative to other products in the marketplace.

A similar study followed in 1985 to determine the market conditions for aeronautical charts and the effect of projected price increases on sales. The study revealed a greater sensitivity to doubling or tripling of chart prices, with a corresponding loss in sales projected in each proposed instance. This study recommended some marketing strategies to ease resistance to higher prices. Instituting product enhancements concurrent with price increases would provide more perceived value for the price. Such enhancements might include improved paper quality, or different product formats. The study also recommended an information campaign to educate users about the full line of NOS products, and to increase the number of NOS charts agents.

The formation of a marketing committee in 1986 united the independent promotional activities that previously characterized marketing efforts. There were coordinated goals, strategies and activities that clearly define approaches and accomplishments.

The long-term objectives for marketing:

1. Maintain or increase sales volume and revenue for charts and related products
2. Improve NOAA/NOS product awareness
3. Identify user needs
4. Locate new markets
5. Enhance existing product line
6. Develop new products and services
7. Strengthen chart agent network
8. Support NOAA state participation program
9. Strengthen external public support groups

An extensive schedule of trade, aviation, and boat shows was arranged to bring NOS products to the public. In support of the chart agent network, the vital link to efficient distribution of NOS products, NOS sponsors a two-day workshop that enables chart agents to meet personally with NOS staff and to get personal attention to their business needs.

Many promotional campaigns, new cover designs, advertisements, and direct mail campaigns were initiated. The accomplishment of activities was challenged by working within a system of government regulations and restrictions which often require lengthy justifications and long lead times. Placing paid advertisements in periodicals, for example, requires a price evaluation of three sources. Procurement regulations regulate spending, but do not determine the effectiveness of advertising in one periodical over another. A procurement request requires strong, written justification to assure timely placement of advertisements in appropriate periodicals.

For NOS to be responsive to the market, it requires the input of marketing information based on background research, user data and charting requirements. Through its early marketing efforts, NOS has been able to understand the marketplace value of its aeronautical and nautical charting data.

NOS conducted a formal marketing study to determine both the requirements for its nautical chart products and the effects of proposed price increases on chart sales.

Many promotional campaigns, new cover designs, advertisements, and direct mail campaigns were initiated.



Bonita

Alcatraz

Fort Point

View of the Entrance to San Francisco Bay Alcatraz N.E. 4 E. (by Compass) 12 Miles

*U. S. Coast Survey, 1853.  
Reconnaissance of the Western  
Coast of the United States.*

# Marketing U. S. Geological Survey Maps and Other Earth Science Products

Michael P. McDermott

**T**he marketing program of the U.S. Geological Survey has two primary goals: to increase the public's awareness of Geological Survey earth science products and services and to increase sales revenues. Most of the traditional marketing functions are found within the National Mapping Division of the Geological Survey. Marketing research and planning is used to develop promotional campaigns for four major product lines by using various techniques from paid advertising to exhibiting at trade shows and professional conferences. The most successful campaigns often combine several promotional techniques.

The primary responsibility for the U.S. Geological Survey's marketing activities is handled within the National Mapping Division by the Office of Information and Data Services, which oversees information dissemination, pricing and promotional functions, and overall distribution policy. Other offices within the National Mapping Division contributing to marketing include: the Office of Research, which directs new product development; the Office of Coordination and Requirements, which assesses Federal and State user needs; and the Office of Production Management, which oversees four mapping centers that produce and revise Survey products.

Four major product groups are sold by the Survey: published maps, aerial photographs and other remotely sensed data, digital cartographic data, and professional publications (books, professional papers, open-file reports, and so on). In addition, there is a broad range of earth science information services offered either at a nominal cost or no charge.

Survey sales distribution channels include a seven-acre warehouse in Denver, Colorado, which handles mail orders and has over-the-counter local sales; over-the-counter sales at 13 Earth Science Information Centers located nationwide; and more than 3,000 map dealers—private retail stores (outdoor recreation, engineering

equipment, and so on) that sell a selection of Geological Survey products.

The Branch of Marketing within the Office of Information and Data Services has the primary responsibility for marketing research and planning and for creating and implementing promotional campaigns.

## RESEARCH AND PLANNING

Most marketing research done by the Survey involves identifying and obtaining existing market information found in trade journals and published studies. Basic market research studies have been conducted on digital cartographic data products, aerial photography, and the recreational topographic map user.

Marketing plans are written annually and include an analysis of the current market situation as it relates to Survey products; relevant goals, objectives, and strategies; and an Action Plan, which lists the monthly implementation of promotional campaigns.

## PROMOTIONAL CAMPAIGNS

Survey promotional campaigns use a variety of techniques including: for published maps, point-of-purchase promotional items such as posters, door stickers, and counter cards are displayed in Survey over-the-counter sales outlets and map dealer stores; for digital cartographic data, products are advertised in targeted professional and trade journals; for remotely sensed products, direct mailings are sent to highly targeted lists. In addition, Survey exhibits are sent to professional conferences and trade shows to exchange information and to maintain an organizational presence within selected industries.

Promotional campaigns are most successful when a combination of techniques are used. For example, to recruit outdoor sporting goods stores as Survey map dealers, a trade show exhibit booth is promoted with paid advertising in the primary industry journal covering the trade show. In addition, a postcard is mailed to a list of potential attendees, usually industry

Marketing plans are written annually and include an analysis of the current market situation

Promotional campaigns are most successful when a combination of techniques are used.

The Geological Survey uses marketing to increase awareness and sales of its earth science products.

association members, inviting them to "Stop by booth number XXX." At the exhibit booth pens imprinted with the Survey Map Dealer Program address and telephone number and plastic bags imprinted with "USGS Maps" are available and provide an additional advertisement. This combination of advertising/direct mailings/exhibits gives the prospective map dealer several opportunities to become aware of the Survey map dealer program.

## CONCLUSION

The Geological Survey uses marketing to increase awareness and sales of its earth science products. Proven marketing processes, such as marketing research and planning, and promotional techniques, such as paid advertising, direct mailings, and trade show exhibits, provide an effective and efficient way to inform the public of the wide variety of earth science information developed by, and available from, the U.S. Geological Survey.

# Improving Access to Spatial Data: The Role of the Spatial Data Indexing System

Duane F. Marble and Der-Tzong Liaw

The need to make more effective use of available spatial data is greater than ever before as new and highly critical spatial problems arise and demand solution. Modern spatial data are found in a large number of formats and are available from an ever increasing number of sources in both the public and private sectors. While major difficulties often face us in finding solutions to many of our pressing spatial problems, one of these — determining the availability of existing spatial data for a given area — can be significantly reduced through the application of geographic information system (GIS) technology.

Finding what data are available about an area of interest can be a difficult and time consuming task. Recently, computer technology has been employed to automate some aspects of this search activity for a few types of spatial data, but the existing systems have focused only upon narrow classes of data (e.g., air photography) and have generally not been structured so as to permit effective and easy spatial searches.

The Geographic Information System was first developed in the mid-1960s in Canada by Dr. Roger Tomlinson and much of the initial use was associated with the management of natural resources such as forestry. While resource-related uses are still important, current applications of GISs range from archaeology to airport planning

to models of treasure hunting on the ocean floor. A modern GIS allows the user to easily structure complex queries regarding its spatial database and to utilize the analytic capabilities of the GIS to enhance these queries.

The application of GIS technology to the problem of locating what spatial data are available for a specific area is analogous to the way in which the library card catalog is used to determine what books are available on a specific subject. The card catalog entry does not repeat what is contained in the book, rather it provides data about the contents of the book, e.g., what is technically called metadata or data about data. In many ways, a spatial indexing system is an automated version of the data dictionary which must accompany every spatial database.

A pilot system demonstrating this spatial data indexing concept has been created for seven counties in central Ohio (centered on Columbus and Franklin County) using the ARC/INFO Geographic Information System developed by ESRI of Redlands, California. This pilot system indexes digital spatial data files developed independently by a number of State of Ohio agencies including the Department of Natural Resources, the Ohio Environmental Protection Agency, and the Ohio Archaeologic Inventory. A special user interface

A pilot system demonstrating this spatial data indexing concept has been created for seven counties in central Ohio...

was developed for the ARC/INFO GIS by Der-Tzong Liaw which permits user interaction with the pilot system without requiring knowledge of the complex command structure of the entire ARC/INFO system.

The three data systems incorporated in the pilot study had developed independently of each other over a number of years. The Ohio Capability Analysis Program (OCAP) is a natural resource information system managed by the Ohio Department of Natural Resources. Based on county-level projects, the data structure is in a grid cell format. Since the projects are undertaken independently for each county, the data available frequently may be different. Examples of the variables often available include soils, geology, land use and watershed boundaries.

The second system incorporated into the spatial data indexing pilot project covered data contained in the Planning and Engineering Data Management System for Ohio (PEMSO), managed by the Ohio Environmental Protection Agency (OEPA). The data structure involves the use of triangle files in an irregular triangle form (TIN), which is a special spatial data structure often used for landform representation and drainage analysis. There are more than 50 attributes associated with each of the triangles (about 600,000 for the State of Ohio), such as elevation, major river basins, sanitary districts and county sewer districts. The OEPA spatial database is also organized by counties.

The third data system indexed was the Ohio Archaeologic Inventory, a point feature database (as contrasted to the

polygon forms in the other two) with each point representing an archaeological site. There are 208 attributes associated with each point in this database including, for example, identification, location, ownership status, temporal affiliation, physical description, reporting information, radiometric dates, etc. The database is managed by the Ohio Historic Preservation Office and is also structured by counties.

Using the pilot spatial data indexing system, which is now being implemented by the GIS Support Group of the Ohio Division of Administrative Services, a user may address questions regarding coverage of any or all of these three major data systems within the seven-county study area. Thus, for the first time, it is possible to determine for central Ohio—easily, quickly, and in a single location—the availability of dozens of different spatial variables. It is planned to extend the coverage in the database to include, for example, details on the current status of topographic mapping and the results of the 1990 Census of Population.

Further development of GIS-based spatial indexing systems will lead to significant reductions in the search time required to identify and acquire the spatial databases needed to solve many of our urgent societal problems. The existence of these systems will also permit a reduction in the high level of data duplication which now exists, and will permit the rapid identification of critical gaps in existing spatial data coverages. These benefits should lead to significant increases in the efficiency of many spatial data collection operations.

Based on county-level projects, the data structure is in a grid cell format.

GIS-based spatial indexing systems will lead to significant reductions in the search time required to identify and acquire the spatial databases needed to solve many of our urgent societal problems.

## Louisiana Coastal Geographic Information System Network (LCGISN)

Randolph A. McBride, Donald W. Davis, Farrell W. Jones, Dewitt Braud, Jr., Anthony J. Lewis, Henry R. Streiffer, Shea Penland, Nina S.N. Lam, and S. Jeffress Williams

Louisiana has the highest rates of coastal erosion and wetland loss in the United States. Average shoreline retreat rates of

over ten meters per year are common and land loss rates exceed 100 square kilometers annually. These coastal changes are

caused by a complex interaction of natural and human-induced processes that is not fully understood.

While numerous site specific and regional studies have been carried out, Louisiana has neither a central geographic information system (GIS) to compile this coastal information nor a mechanism by which this information can be shared locally, regionally, or nationally. With the creation of the Louisiana Coastal GIS Network (LCGISN), a mechanism to compile and share this information is being implemented.

The Louisiana Geological Survey, in cooperation with the Department of Geography and Anthropology and the Computer Aided Design Geographic Information System (CADGIS) Research Laboratory at Louisiana State University, has been awarded \$450,000 under a cooperative agreement with the U.S. Geological Survey to develop this coastal information network.

The primary objectives of the LCGISN are to (1) improve communication among coastal scientists, planners, universities, governmental (local, state, and federal) agencies, and private groups who need information to address Louisiana's coastal erosion and land loss problems, (2) simplify the integration of environmental data from a variety of sources, (3) eliminate duplication of effort so money can be spent more efficiently, (4) identify the most important databases in existence and incorporate them into the GIS network, (5) promote networking and digital data exchange among the different machines, systems, and institutions that use coastal information, (6) establish standard data exchange formats and data quality standards, (7) establish guidelines for cataloging different media (maps, imagery, photos, video, textual, etc.) and setting up data set ancestry, (8) develop a user interface that provides access to spatial data, and (9) assist other organizations in developing working GIS frameworks.

LCGISN is not another GIS but is rather a computer system that links existing systems and provides access to geographic information in a method similar to that presented by Holmes (1990). LCGISN consists of a management council, network core group, technical GIS group, and two

independent advisory groups (coastal users and technical/applications).

The Management Council provides guidance for LCGISN and consists of a representative from each member organization. The Network Core Group, which forms the foundation of LCGISN, not only provides the major coastal databases but also computer mapping, remote sensing, and GIS expertise, teaching and training facilities, and a large graduate and undergraduate labor pool. The Technical GIS Group is responsible exclusively for developing, implementing, and operating the user interface, central GIS facility, and user network. This technical group specializes in computer hardware and software, GIS, remote sensing, computer mapping, coastal geomorphology, and geography. Two independent advisory groups for LCGISN, one of Coastal Users and the other for Technical/Applications, will provide current information on coastal databases and projects, as well as hardware, software, networking, and trouble-shooting issues.

One of the top-ranked data sets identified for inclusion in LCGISN is a spatial index/bibliography for available data relating to Louisiana's coastal zone. Such an index will link geographic location to maps, imagery, photographs, names, bibliographic references, and others, to allow spatially defined geographic searches. An essential function of LCGISN is to connect existing GISs and provide user access to spatial data available in different types of media.

Numerous spatial data sets exist for coastal Louisiana; however, only a few are in a digital, GIS-compatible format. As a result, a decision was made to identify the most important data sets and rank those data sets according to need. Interestingly, a spatial index/bibliography was considered one of the top ranked data sets for Louisiana's coastal zone. In other words, public access to maps and spatial information hinges upon a link among standardized bibliographic records, spatially-indexed maps (see Streiffer and Braud 1987), and on-line vector/raster data.

During the first year, the prototype user interface was implemented using Hypercard running on a Macintosh. Unix-based workstations and GIS software were

**LCGISN is not another GIS but is rather a computer system that links existing systems...**

**An essential function of LCGISN is to connect existing GIS's and provide user access to spatial data available in different types of media.**

**Unix-based workstations and GIS software were acquired and the network core group was connected via LSU's campus-wide Ethernet.**

acquired and the network core group was connected via LSU's campus-wide Ethernet. During the second year, the user interface will be implemented onto Unix-based workstations. The data sets will be further assessed and, where possible, imported into the system to produce a working version of LCGISN.

The third and fourth years will focus on perfecting the user interface, acquiring or programming translation programs, cataloging various types of media, importing additional digital data sets, developing a computer bulletin board, and publishing a regular newsletter.

By year five (1994), LCGISN will be a

fully functioning system, promoting the use and exchange of spatial data and improving communication among individuals, organizations, and agencies working in the Louisiana coastal zone.

#### LITERATURE CITED

- Holmes, D. O. 1990. "Computers and Geographic Information Access." *Meridian* 4: 37-49.
- Streiffer, H. R. and Braud, D. H., Jr. 1987. "Automated permit analysis system." In *Proceedings, Fourth National Map Overlay Statistical System (MOSS) Users Workshop*. Lakewood, Colo.: U. S. Department of the Interior.

## The Mercator Society of the New York Public Library

Alice C. Hudson

The Mercator Society is dedicated to furthering the use and appreciation of the cartographic arts. Our concern is the activity necessary for the public to enjoy that resource. We believe that the use of cartographic materials is enhanced by an understanding of their context and history, and therefore support every effort to analyze the Library's collection and to make it more accessible to the public. To that end, the Society will initiate and support exhibits, special projects, and the publication of books and monographs. Aware of the variety of expertise needed in these endeavors, we welcome all for whom maps are sources of information and objects of delight, and urge them to join us.

Founded in 1985, the Mercator Society is a support group organized to maintain and expand the resources of the Map Division of the New York Public Library. The Map Division houses 382,000 maps, 11,200 atlases and over 4,000 books. Beautiful and useful, maps are costly items for a library to collect and maintain. Paper falls prey to a host of attackers: heat, humidity, dust and grime, as well as the chemical imbalance of the paper itself. While for many materials, microfilm is the preservation method of choice, with maps—and the ubiquitous role of color—this technique is less than

ideal. Thus they must be mended, deacidified, and encased in Mylar envelopes.

The Map Division has no endowment and relies solely on the Library budget for the costs of curatorial activities. A support group, like the Mercator Society, allows the Map Division to undertake such activities as the restoration of our two sets of Blaeu atlases. While the Society gathers twice a year for lectures, the Society and, particularly, its Steering Group (a Library trustee, the Science Writer for the *New York Times*, an antiquarian map dealer, two map collectors, and one major donor) are an integral part of the exhibit program and in the sponsorship of meetings.

Establishing a friends group for a map library involves time, energy and commitment. This is not always easy. Support from the wider institution is paramount. Clear policy on how money received will be used is critical (the Mercator Society funds are used for the purchase and preservation of antiquarian maps).

Awareness is vital, for members of the map community may never support the wider institution. They will, however, enthusiastically support a special collection in the area of their interest. Therefore, setting up a friends group for the map collection will probably not have a signifi-

**Establishing a friends group for a map library involves time, energy and commitment.**

**Our delight is in the recognition of cartography as a bountiful resource in the investigation of the material world.**

cant negative impact on the funding programs for the institution as a whole.

The Mercator Society has strengthened personal commitments from the metropolitan community. These commitments made it possible for us to improve our already strong collection. They also support the publication of a quarterly newsletter and two monographic publications (*English Mapping of the Americas, 1675–1715*, and a forthcoming volume of turn-of-the-

century articles from the *New York Public Library Bulletin*).

Our delight is in the recognition of cartography as a bountiful resource in the investigation of the material world. We are moved by interests in history, geography, cartography, and the decorative arts. With affection and a feeling of purpose we direct our efforts to the Map Division of the New York Public Library and the considerable collection which it maintains.

## Birmingham Central Library Phillip Allen

**L**arge and effective map collections in public libraries in the United Kingdom are not as numerous as one might hope for, largely because they are expensive to maintain both in terms of material and staff time. This does not, however, indicate that there is not a great demand for cartographic material, and the few large public library collections are often consulted by researchers from places far distant from where the library is located. It is sad to reflect that the recent government legislation involving the introduction of a Community Charge has led local authorities to examine closely the way in which locally raised money is spent, and all local services are now targeted more narrowly to the needs of the residents of the particular area. Public libraries have not escaped this trend and the limited funds which are available must now be spent to fulfill the clear local demands rather than purchasing material which might be deemed to maintain the stock of an established center of excellence. Even within the largest of the public library systems, the acquisition of cartographic material can rarely obtain a high priority given the increasing demand for new and often more obvious services for the local population.

Well established collections can, however, be developed and expanded by exploiting the rare or unique material in their custody. Publishers are well aware of the decorative appeal of early maps and a

serious programme involving the reproduction of such material can produce welcome revenue which might supplement the acquisition funds. Reproduction fees for the use of maps may also be charged at many levels, and even when nominal fees are charged the library often benefits from the advertisement of its stock. The provision of photocopies raises difficult problems involving both copyright and the librarians' desires to preserve the material in their care. The provision of information is clearly a primary concern but conservation is a close second, and it is often difficult to reconcile the two.

The changes in the British education system are now being felt and the new emphasis on project work and the use of so called 'primary' material ensures that school children and students will be using a wide variety of material, including maps, which they would not normally have handled.

Schools and other educational establishments will, no doubt, purchase a limited amount of cartographic material but the larger libraries with map collections will certainly be more heavily used in the future. This will act as a stimulus to exploit the stock by mounting exhibitions and putting together project packs. Although this might put a further strain on the service, it might have a hidden benefit by focusing attention on the great value of the cartographic collections.

**...limited funds which are available must now be spent to fulfil the clear local demands rather than purchasing material which might be deemed to maintain the stock of an established center of excellence.**

**Well established collections can, however, be developed and expanded by exploiting the rare or unique material in their custody.**



# Cartography at the National Geographic Society

John B. Garver, Jr., and Oliver G. A. M. Payne

**I**t is a sure bet that on 2 August 1990, when Iraqi troops invaded Kuwait, President Bush consulted maps of the Middle East, and it is probable that at least one of those maps was produced by the Cartographic Division of the National Geographic Society. Earlier, Society president and chairman, Gilbert M. Grosvenor, had presented George Bush with a specially made cabinet containing National Geographic maps; today it is mounted in the President's study, next to the Oval Office. A similar cabinet had been made for President Franklin D. Roosevelt shortly after the Pearl Harbor attack in World War II.

National Geographic maps, however, reach far beyond the White House. Society membership exceeds ten million, and every month an estimated 40 million people read *National Geographic*, a number now matched by the viewership of National Geographic television programs. The mapmaking effort hinges on six double-sided supplements a year inserted in *National Geographic* and some 60 page maps designed to illustrate articles, an outstanding feature in American magazine publishing.

Maps and the magazine have been synonymous since October 1888, when the first issue of *National Geographic* included foldout charts tracking the great blizzard of that year. While commercial cartographers provided these and other early maps, since 1915 Society cartographers have been creating maps on subjects as diverse as the articles in the magazine and on realms as far flung as the ocean floors and the solar system.

The first supplement published under Chief Cartographer Albert H. Bumstead appeared with the May 1918 issue of *National Geographic*. Titled "Western Theater of War," the meticulously drawn map located almost every village in France and Belgium, allowing members to follow the closing campaigns of World War I. In 1921 the map of "Europe Showing the Countries as Established by the Peace Conference of Paris," which was prepared

by Matthews-Northrup Works of Buffalo, New York, documented the postwar boundary realignments.

During World War II the Society published maps of the main theaters, including the "Theater of War in the Pacific Ocean" (February 1942) and the "Theater of War in Europe" (July 1942). The maps proved so valuable to U.S. and Allied strategic planning of land, air, and sea operations that U.S. Army Maj. Gen. Eugene Reybold described the Society as "an integral part of our military mapping establishment."

The scope of National Geographic cartography expanded in the postwar years. The first "Map of the Heavens" was produced in 1957; the first seafloor map, entitled "Indian Ocean Floor," appeared in the magazine just over a decade later. The Society's first satellite imagery map, "Portrait U.S.A.," coincided with the nation's bicentennial.

The most popular and influential of all the Society's maps has been its general reference political map, "The World," first published in 1922 on the Van der Grinten projection. In December 1988 the Cartographic Division offered the newest version of this old standby, drawn on a projection devised by Arthur H. Robinson of the University of Wisconsin-Madison. During the 1980s the Division came to rely on a growing network of computer-graphics tools, supported by a research and development staff. A Scitex system and a recently installed ARC/INFO computer-mapping system are used for preparing base maps, plotting map symbols, and producing printer-ready films.

Modern technology and traditional cartography come together in the "Mount Everest/High Himalaya" supplement, published in November 1988, which was the Society's centennial year. One side is a computer-generated perspective view of the Central Himalaya, showing patterns of vegetation and land use; the other side features the most detailed shaded-relief topographic map ever made of the world's highest peak.

Maps and the magazine have been synonymous since October 1888...

The most popular and influential of all the Society's maps has been its general reference political map of The World,...

A Scitex system and a recently installed ARC/INFO computer-mapping system are used for preparing base maps, plotting maps symbols, and producing printer-ready films.

The Cartographic Division's largest achievement, measuring 11 feet in diameter, is a rotating illuminated globe on display in Explorer's Hall in the Society's Washington, D.C. headquarters.

...many National Geographic products will no doubt be available as videodiscs or laserdiscs—an exciting prospect for those of us involved in organizing and presenting spatial data.

With the publication in December 1990 of the sixth edition of the *National Geographic Atlas of the World*, the Society celebrates the Cartographic Division's 75th anniversary. The atlas has been the Division's flagship ever since the first edition rolled off the presses in 1963. In 1985 Cartographic produced the *Atlas of North America: Space-Age Portrait of a Continent*, and in 1988 the Division published the *Historical Atlas of the United States*, an unprecedented survey of the nation's development through more than 550 antique, thematic, and political maps, period photographs, and charts and graphs. The atlas received the 1989 Outstanding Achievement Award from the American Congress on Surveying and Mapping.

The Cartographic Division's largest achievement, measuring 11 feet in diameter, is a rotating illuminated globe on display in Explorer's Hall in the Society's Washington, D.C. headquarters. The globe features shaded relief and natural vegetation but also contains place names and international boundaries. Portable physical and political globes (12-inch and 16-inch) are among the Cartographic Division's most popular products. The political globe is equipped with a plastic geometer designed to pin into holes at either pole; both globes come with explanatory booklets.

The Cartographic Division's maps, atlases, and globes are central to the Society's mission: the increase and diffusion of geographic knowledge. They are promoted to the membership primarily through the magazine, but are also listed in

a catalog and are available over-the-counter in the Explorer's Hall shop.

In reaching out to, and beyond, the membership, the Society's marketing division prepares more than 250 million promotional pieces each year. While cartographic products themselves represent an important component of the promotional mail storm, a variety of other publications and products—many of them featuring maps—are pitched to different audiences.

*National Geographic World*, the Society's magazine for children, has a circulation of 1.3 million; *Traveler*, whose editorial focus is North America, has a circulation of over 700,000. *National Geographic Research* is a quarterly scientific journal for scholars. The past two decades have seen a rapid expansion of the Society's book-publishing program, ranging from large-format books, such as *Discovering Britain and Ireland*, to standard-format books, such as the *Civil War* and *Exploring America's Backcountry*. Educational books for children, such as *Our Violent Earth* and the *Wild Ponies of Assateague*, are also available.

In the years to come, as electronic publishing becomes established, many National Geographic products will no doubt be available as videodiscs or laserdiscs—an exciting prospect for those of us involved in organizing and presenting spatial data. We look forward to the day when members of the Society—and Presidents of the nation—will be able to call up on their computers the latest efforts by National Geographic cartographers to portray the diversity of earth, sea, and sky.

## Promoting Map and Spatial Data Use at the Royal Geographical Society

A "Special Case"

Francis Herbert

The Royal Geographical Society was founded as a private society in 1830, one objective of which was "the formation of a Library, with a collection of Maps and Instruments connected with Geographical Science, to which all Members shall have access, and strangers by their orders. . ."

Since 1854 successive governments have made an annual grant to the RGS conditional upon the separately-administered Map Room's collections being available for public reference.

Publicity regarding both existence and indication of cartographic holdings has

Publicity regarding both existence and indication of cartographic holdings has hitherto been largely passive.

The RGS has begun increasingly to formalize flexible funding alternatives by marketing its collections and expertise via commercial products.

hitherto been largely passive: entries in both general and specialist directories or area source guides and, until 1980, published biannual listings of new accessions. More publicity has been gained from mention of the Map Room's stock and services during seminars for non-members arranged by the Society's Expedition Advisory Centre. This has been, and continues to be, important in that reports, usually of a scientific nature, from RGS-sponsored expeditions are also held in the Map Room; these are a natural adjunct to maps when planning future expeditions.

Less passive may be considered publications by the staff which are often based upon items in RGS, active participation in the life of professionally-associated societies (the British Cartographic Society and, within it, the Map

Curators' Group), and other interactive contacts with map-makers and map-sellers.

As elsewhere in the United Kingdom, current government policy has begun to impose an increasing need for even the RGS to become more self-sufficient, and it has recently had to re-think its former largely 'stand alone' policies. It has begun increasingly to formalize flexible funding alternatives by marketing its collections and expertise via commercial products. Consultancy status of staff, too, means that not only is income generated but that cartographic expertise is disseminated. Ironically, promoting awareness of maps and spatial data further both increases demand on restricted number of staff and allows less attention than is desirable to be directed to collection maintenance. A challenge!

## Promoting the Map Collections of the Newberry Library

Robert W. Karrow, Jr.

Collection building is the first step, and perhaps the most important single step, in promotion. This is not to say that institutions can acquire maps and atlases and hide them away without a thought for potential readers, but I do think that important collections will generate use. At the Newberry, we are lucky because maps and atlases have been collected with regularity and, in some areas, in depth, since the library was founded in 1887. Edward E. Ayer, one of our earliest and most important donors, assembled an impressive collection of editions of Ptolemy's *Geography*, early atlases, and manuscript and printed maps—a collection that went well beyond the bounds of his book collecting (which was primarily limited to the Americas).

Major promotion of the map collections began in the late 1960s and grew out of the interests of three individuals. Hermon Dunlap Smith (1900 – 1983), trustee of the library from 1943 until his death and President of the Board for eleven years, was a serious collector of Midwestern travel narratives and of maps showing the Illinois

country and the Midwest. When he began to plan a major gift to the library in the 1960s, his thoughts turned to the map collections which he thought deserved to be better known. At about the same time, the Chicago antiquarian book dealer Kenneth Nebenzahl and his wife Jossy endowed a lecture series at the Newberry in honor of their son, Kenneth Jr. Further, Lawrence W. Towner, then the Newberry's Librarian, was envisioning an institute for advanced studies in the humanities to be built around the Newberry's collections.

The Nebenzahls decided on a series of lectures in the history of cartography, and invited R. A. Skelton to be the first speaker. Skelton, Keeper of the Map Room at the British Museum, was far and away the greatest authority on the subject in the English-speaking world, and the library took advantage of his visit, in November 1966, to have him assess its cartographic collections in terms of their ability to support a research center in the history of cartography. Skelton's reports addressed staffing requirements and gave an analysis of the collections by area, form, and period.

...maps and atlases have been collected with regularity and, in some areas, in depth, since the library was founded in 1887.

The first Nebenzahl Lectures were a galvanizing force in establishing a stronger cartographic presence in the library.

His indications of lacunae continue to guide us in acquiring antiquarian materials.

The first Nebenzahl Lectures were a galvanizing force in establishing a stronger cartographic presence in the library. In the next two years, the Novacco collection of sixteenth-century maps printed in Italy and the Sack collection of late seventeenth- and early eighteenth-century maps of western Europe were purchased *en bloc*. In 1969, Lee Motteler, the map librarian at Rand McNally & Co., prepared reports for the library on the establishment of a map reading room, map cataloging, and automation.

David Woodward was hired as the first map curator in the same year, and I joined the staff as map cataloger in 1971. The Hermon Dunlap Smith Center for the History of Cartography was dedicated in 1972. The Center's quarterly newsletter, *Mapline*, was launched in 1976, and the Chicago Map Society began meeting at the library in September of the same year. All of these events were instrumental in promoting the use of the collections.

The Research and Education Division of the Newberry offers some 60 to 70 fellowships per year, for periods of from two weeks to a year, to scholars working in any field supported by the library's collections; one or two of these fellows generally work on projects in which maps feature prominently. In addition, the Smith Center

awards five or six fellowships a year.

Lectures, publications and exhibitions also promote the cartographic collections. The nine Nebenzahl lecture series have resulted in a number of books, and the Smith Center also publishes a newsletter, *Mapline*, a monograph series, and slide sets. About once a year there is a major exhibit of maps and atlases, accompanied by a printed catalog.

During the past twenty years, the Newberry has sponsored three major map-based research projects. The first of these produced the *Atlas of Early American History: The Revolutionary Era* in 1975. The second culminated in the *Atlas of Great Lakes Indian History* in 1987. We continue work on an atlas of historical county boundaries for the United States.

The collections continue to be augmented aggressively. In a period when antiquarian purchases had been drastically curtailed, Andrew McNally III and Arthur Holzheimer established funds for such purchases, and Rand McNally & Co. gave its company archives, including thousands of maps and atlases, to the library.

The programmatic steps taken since the mid-1960s have certainly done much to increase public awareness of our map collections both directly and indirectly. But it is the continuing efforts, by both custodians and friends, that undergird and ensure the success of promotional techniques.

---

## NEW COLOR SATELLITE-IMAGE MAP PUBLISHED



The U. S. Geological Survey has published a new color map of the 48 conterminous states. Produced using images taken by weather satellites from 500 miles above the earth, the map is printed at a scale of 1:7,500,000. The mosaic of color-infrared images from the NOAA-8 and NOAA-9 satellites was developed at the Earth Resources Observations System (EROS) Data Center. Printed on both sides of a 48-by-71 centimeter sheet, one side has an unannotated image, while the reverse contains state boundaries, names of prominent features, and explanatory text.

# Promotion in the Commercial Sphere

Erno R. Bonebakker

The commercial cartographic sphere is diverse in size, scale, style, and sophistication. Enterprises can range in size from “kitchen table” cartographers, who do it all from drawing to distribution, to large corporations with complex organizational and production structures and sophisticated marketing programs. Some survive in the marketplace simply by producing maps, while others are only dealers.

Each enterprise described has found its “best” marketing strategy and set of techniques; each has sought to formulate an effective marketing program. While these companies vary greatly in size and focus, all have a line of products and services to promote, and to advertise. While each may have established a unique marketing plan, the common baseline is the attempt to identify particular segments of the map using market and to develop an approach to reach them as economically as possible.

At one end of the spectrum are the antiquarian map dealers. These often tailor a list of items for sale to individual customers, some of whom might be in mind when the materials are acquired. The antiquarian dealer expends his or her energy making and maintaining contacts, becoming familiar with the needs and wishes of individual customers; this is marketing

through personal communication. Similar to these individualized and personalized operations are small map production companies which produce maps tailored to the needs and the wishes of the customer.

The small dealer and the small producer contrast strongly with the large corporation, such as EOSAT, with its complex marketing plans involving extensive advertising in national publications, an international staff of sales managers and representatives, attendance at dozens of trade shows annually, and sponsorship of educational seminars. Some small producers are mass marketers and EOSAT is probably principally marketing custom products.

Knowledge of the product is a prerequisite for presenting it effectively to the audience — the customer. Contact can be simple and intimate, a phone call or a personal letter, or a one-on-one conversation over the pages of an atlas or the details of a map. It can be as impersonalized and far-reaching as bulk mailings and press releases.

There are many ways to reach map users. Here the focus is on marketing and advertising. Nevertheless, there are techniques which should be adaptable to other situations.

Knowledge of the product is a prerequisite for presenting it effectively to the audience — the customer.

Frustrated by a lack of up-to-date maps of Maine's backwoods and back roads...he decided to publish these maps in a standard road atlas format...

## DeLorme Map Co.

Eric Riback

David DeLorme was a Maine native in his 20s with book publishing experience — but no background in cartography — when he had an inspiration in 1975. Frustrated by a lack of up-to-date maps of Maine's backwoods and back roads, he learned that the Maine Department of Transportation published a series of county maps with much of the information he and other outdoor enthusiasts needed. The maps were published in an unwieldy super-sized atlas that the general public knew nothing about.

So he decided to publish these maps in a standard road atlas format, joining the maps together and paging them to create a grid similar to the USGS quad system, and supplementing the maps with information on recreation and related topics. Thus was born *The Maine Atlas and Gazetteer*.

When DeLorme published *The Maine Atlas and Gazetteer* in 1976, distribution of specialty maps and atlases was generally limited to bookstores. Since the atlas featured back roads of interest to fishermen, hunters, hikers and Sunday drivers, he

asked himself why the atlas should not be available in other stores as well, where potential customers would be more likely to find it.

So he filled his Dodge van with atlases and set off around the state opening accounts in hundreds of sport shops, country stores and pharmacies. Since they didn't have fixtures for atlases, he provided a cardboard display stand that fit right on the counter next to the register.

DeLorme Mapping Co. now employs over 100 people, and publishes atlases for fifteen states with over 400,000 copies sold per year, but our philosophy of distribution is the same — distribute our products where the greatest number of people can find them.

Today, publishers and distributors of standard road maps and atlases are also achieving broad distribution, taking advantage of the emergence of large regional and national drug, grocery and mass merchandise/discount chains. Often, specialty map products such as DeLorme

atlases can also be found on their map racks.

At DeLorme, our sales staff continues to do what David DeLorme did in 1976, but in more states, and incorporating direct mail and telephone marketing techniques along with on the road sales efforts, opening accounts in sport shops, country stores and pharmacies — and bookstores, too — and placing a cardboard display stand full of atlases on the counter.

Since 1978, we have been making our own maps, rather than republishing state-produced ones. David DeLorme became a self-taught cartographer, and our approach to mapmaking and technique has largely been developed internally as the company has grown.

In addition to our map publishing enterprise for which we are best known, DeLorme now also has a computer mapping division offering proprietary software developed under David's direction, and a worldwide map database, to government and corporate users.

...our philosophy of distribution is the same — distribute our products where the greatest number of people can find them.

## Eureka Cartography

John R. Parsons

When Eureka Cartography was founded as a commercial map-design and production enterprise in 1984, we were convinced that maps had crucial and often unrealized functions in business operations, recreational activities and in the proper function of government. We believed that the amount of work we could generate (and consequently the success of our business) would depend as much on how well we could convince people of the importance of quality maps to their operations as it would on how effectively we could actually produce a quality product.

What we have found in dealing with a very wide range of individuals, from publishers, marketing departments, and tourism promoters, to government bureaucrats and attorneys, are several recurring issues of concern that are not exactly what we had anticipated.

First, people responsible for the marketing and promotion of successful and

significant business enterprises usually do not need to be convinced of the value of maps in their operations. Many private businesses operate in a highly competitive environment and are sensitive to things that can give them an edge in the market. Eureka now works for a variety of publishers who understand that good maps make an important contribution to a book or article and who have recognized our capabilities to produce clear, organized, easily understood and geographically accurate products.

Secondly, the best promotion of map use comes from the effective use and exposure of attractive maps. A well-designed map is one that attracts attention and easily communicates something to the reader. Every time such a map is published it makes people think about the potential of maps to further the purposes of their own endeavors. Our best advertising is the exposure that our maps get through

The best promotion of map use comes from the effective use and exposure of attractive maps.

...the most significant obstacle to more extensive and better map use is the great frustration that people inevitably have experienced in working with maps.

To be truly useful, a GIS has to be down to earth.

...best known for producing the first mapping application for the Windows environment, Windows/On the World...

publication and from the showing of our portfolio.

The third issue that we continually encounter, and possibly the most significant obstacle to more extensive and better map use is the great frustration that people inevitably have experienced in working with maps. The problems we hear about include the complex nature of the physical artwork, difficulties in finding artists or cartographers prepared to handle geographic details, the unavailability of good source materials, the high costs of certain

kinds of map production, and problems related to copyright and rights of usage. Many of our clients bring with them a litany of bad experiences with maps and cartographers. Consequently our most effective means of promoting greater map use among these individuals is to break down these apprehensions. This requires sitting down with the potential clients, listening to their needs and desires, explaining our qualifications and experience, and together devising a plan to deal with their specific problems and concerns.

## GEOVISION, Inc.

Ken Shain

Three-quarters of the management information systems in use today involve spatial location. For this reason Geographical Information Systems (GIS) are the fastest growing segment of the computer graphics industry. GIS and AM/FM (automated mapping/facilities management) systems rely on computerized maps for storing, retrieving and analyzing data. They provide major opportunities *and problems* for data users.

Nothing about geography and mapping today is more mystical than GIS. To be truly useful, a GIS has to be down to earth. It has to be easy to obtain, to learn, and to use. It is the GEOVISION goal to promote the use of spatial data and the creation of maps by providing mapping software which will enable the user to operate in a familiar environment. The statistician or mapmaker will read and process "native data" and not require data in a proprietary format.

GEOVISION believes in open architecture and standard file formats. As a result, the line of products affords the user with flexibility in performing desktop mapping applications or building geographical information system databases. The geographic databases are device-independent and are, therefore, transportable among

systems. The software supports many of the systems already in use by professionals engaged in land-based spatial analysis. GEOVISION, Inc., has been producing geographic software and databases on CD-ROM since 1985. It is best known for producing the first mapping application for the Windows environment, Windows/On the World, and the first commercial mapping product on CD-ROM, the GEOdisc US Atlas.

TIGER TOOLS, a Windows-compatible program, allows users to extract, edit, catalog, index and reformat the U. S. Bureau of the Census TIGER records in conjunction with other software. Users will be able to conduct their own processing of TIGER data using familiar word processors, spreadsheets and other desktop publishing software. From the 135 feature classes in TIGER, subsets of linked records can be created to meet specific application requirements.

GEOVISION has to find a niche in the rapidly growing GIS environment. It lies in the development of this device-independent database which can be used with any software supporting TIGER; alternatively, TIGER TOOLS can be used to reformat TIGER files into third-party formats.



# Rand McNally and Company

## Con Erickson

Rand McNally is the world's largest commercial map maker...

...we've been successful because we are meeting the real needs of the people who buy our publications.

Ideally, the map marketer — commercial or academic — would ask who does or doesn't use the maps (or services) I produce?

They're not really map makers," he sniffed, "they just copy other people's work." The speaker was referring to commercial map makers like Rand McNally. The nugget of truth in that generalization is dwarfed by the boulder of misunderstanding it represents concerning the art and science of consumer map marketing. It might also hint at a possible misunderstanding concerning the marketing of map services such as those offered by libraries and other institutions.

Rand McNally is the world's largest commercial map maker. We are uniquely diversified in the field by being involved—and usually the leader—in classroom map products, world atlas and general reference maps, business references (what library willingly goes without a Rand McNally *Commercial Atlas & Marketing Guide?*), road maps and road atlases (including the nation's best selling paperback annual), and premium and incentive publications for business and industry.

We don't worry much about the fact that much of what we put into map products comes from public domain sources. We also spend impressive amounts of time and money developing original information, not to mention the creative way that information is combined and presented. But what

counts at the end—with map makers or map librarians—is that we've been successful because we are meeting the real needs of the people who buy our publications. Fail in that and all of the originality that any one of us can muster won't count for much.

A fundamental part of our success comes from various forms of market research, which often amounts to just listening to what people tell us. That doesn't mean asking such ill-conceived questions as "What would you like to see on a map?" That brings such ill-considered responses as that from the person who wants the convenience of a map that's half as big but with twice as much information. Blithe disregard for consideration of the limitations of scale and readability are less indicative of a bad answer than a bad question.

Ideally, the map marketer — commercial or academic—would ask who does or doesn't use the maps (or services) I produce? Why or why not? What are the needs and interests of those whom I wish would use my "product" and how can I better meet their needs?

Too often in business or academia the attitude is, "I've got this really good product to offer, now it's time for the world to shape up and realize they want it."



ART SOURCE  
INTERNATIONAL

- ANTIQUE MAPS
- AMERICANA
- WESTERN EXPLORATION
- ANTIQUE PRINTS

*Catalogues Issued*

**ART SOURCE INTERNATIONAL**  
1655 Walnut • Suite 200  
Boulder, CO 80302 (303) 444-4080

# Map Link

Erno R. Bonebakker

Map Link, now the map distributor with the largest selection of maps in the United States, started as an offshoot of a retail travel store, Pacific Travellers Supply. As PTS developed sources for maps, especially for hard to find foreign maps, it was only natural to order a few more than the store needed and distribute them at wholesale to other map stores. At first marketing was largely by word of mouth. As the distribution business has grown, marketing has become more active.

From a modest beginning, selling a relatively small number of foreign travelers' map titles, USGS topographic quadrangles of the Southwest and selected foreign topographic sheets, Map Link now attempts to inventory or have access to virtually every map title available in the Western World. We now inventory topographic mapping for 41 out of 50 states at the largest scale available, with smaller scale coverage of the remaining states. We have topographic coverage of many foreign countries and are constantly seeking additional coverage as international trading and security considerations change and evolve.

Currently, Map Link promotes its business through personal calls on current and prospective customers by sales representatives, an active presence at trade

shows (IMDA, ABA and regional book-seller associations) and meetings of professional associations (ALA, SLA, WAML, ACMLA), and by selected mailings directed to carefully targeted prospective customers.

In addition, Map Link has had favorable mentions in national newspapers and magazines which has generated a gratifying number of new contacts.

Map Link emphasizes service to the customer, the widest selection of maps available in the United States, and the knowledge of its staff. We aim to ship promptly and accurately and have put great effort into our catalog and the *Directory of World Mapping*, a 300-page listing of maps of virtually every country in the world. We maintain a high level of inventory and constantly search for and obtain new map titles from around the world. Map Link's staff is perhaps its greatest asset; it is enthusiastic, geographically knowledgeable and dedicated to spreading geographic awareness through maps.

Today the traveller, tourist to scientist; the professional, planner to lawyer; the academic, student to scholar; as well as the journalist, collector, soldier, engineer, diplomat, and librarian can look to Map Link to meet their map needs.

Map Link now attempts to inventory or have access to virtually every map title available in the Western World.

## Marketing and Promoting Maps: Latitudes

Tom Hedberg

The map seller has limitless ways to market and promote maps. In my five years of retail map business experience, I've noticed that the small things seem to add up to an effective marketing campaign. Sometimes all that it takes is a little creativity and a new person is excited about maps or a one time map fanatic has his or her interest rekindled.

I separate our marketing and promotional campaign of maps into three broad categories: in-store, out-of-store, and traditional media.

In-store marketing can be as simple as using maps in theme displays for events in the news or taking the time to point out a particular map that a customer might show interest in. An example of this is that whenever I strike up a conversation with an individual who has a strong interest in China, I make a point of mentioning a very large wall map of China which we sell. The map, published by Esselte Mapping Service in conjunction with the China Cartographic House, is a very beautiful map and is one of my personal favorites.

Therefore, it is quite easy to “market” it. All that I need do is say to the customer, “Oh, I would really like to show you an incredibly beautiful map. . .” Because of the size of the map, we must keep it rolled up, and a customer would not ordinarily notice it. More than five times out of ten, the individual gasps, and says, “This map *must* be a part of my life,” and the \$25 is taken out of the pocket, a bargain exchange for the role this particular map will play in the future.

Simple methods of out-of-store marketing ideas relate to contacting organizations/ clubs which use map products such as hiking clubs, Boy Scouts, wilderness organizations, and genealogy clubs. In addition, interacting with schools and school groups is indispensable.

Invite a nearby school group in for a field trip to the store and give them a mini “tour” of the store. The kids can get hooked on maps and will drag their parents back with them. Or better yet, take the store to the classroom. Remember, though, to make it fun. I recently went to an eighth grade classroom, and although some kids laughed

at me when I walked in wearing a map T-shirt, jacket and hat while spinning a globe basketball, I’m sure that when I left, more than one student had his or her interest sparked to learn more about the world. The fun items grabbed their interest, but I actually showed them different kinds of basic road maps, topo maps, an assortment of world map projections, and some interesting maps of the area right around their school. I even noticed more than a few of the kids making a special trip to the store in the ensuing weeks. A success!

Traditional media are composed of print and radio ads. These cost more money but can be very effective if you target the correct group. Using maps within the ads makes perfect sense as well as a catchy copyhead which is map related. Of course, the Yellow Pages are also a necessary and effective manner in which to market your services.

One thing to remember is that *maps sell themselves*. They are inherently interesting and appeal to most everyone. They just need to be presented to people in unique and eye-catching ways.

## Promoting Maps: The Role of the Map Retailer

Schera Chadwick and Edward W. Lollis

The transition in academic curricula from “geography” as a stand-alone subject to its anonymous inclusion in “social studies” promoted a major de-emphasis in the importance of geography within educational systems. This has resulted in several generations of “educated” adults knowing very little about geography and *not realizing* how geographic information can assist them in their daily lives, in both business and leisure activities. This generic lack of appreciation for the value and usefulness of geographic information lies at the heart of the problem facing the map industry. We all have a common need to inform the public in a positive, yet persuasive, manner, to raise the collective consciousness regarding the role of geography in their lives, and to excite the imagination not only with the astonishing advances in geographic

technologies, but also with the remarkable knowledge which these technologies have produced about the world (and universe) in which we live.

In 1989, after more than two years of market research, the National Map Gallery opened in Washington, D.C. In order to “distinguish” ourselves from other map stores (now numbering approximately 200 throughout the United States), we identified growth-oriented market segments that were not currently being served by existing map stores. While we strive to display geographic products of all kinds, from the serious to the frivolous, we have selected two products for our primary marketing efforts: satellite imagery and geographic computer software. Remote sensing technology is widely used by governments, large corporations, and universities; nevertheless, attractive, informative, and

...interacting with schools and school groups is indispensable.

...the Yellow Pages are also a necessary and effective manner in which to market your services.

...we have selected two products for our primary marketing efforts: satellite imagery and geographic computer software.

affordable satellite imagery is quite scarce. We provide original "Gallery Prints" of almost any location for our clients. We now have the world's largest selection of satellite images which have been published as inexpensive posters; the quality of these published images varies widely, however, and the scant number available indicates that potential users do not yet realize the extraordinary richness of this resource.

While computers are used to enhance and produce satellite imagery, they are also changing other aspects of cartography. Publishers of paper maps are struggling to computerize production. The producers of GIS systems have developed fantastic equipment and programs, but with equally fantastic prices; for the most part, they are beyond the financial means of the mass market and provide features not required by it. The spread of computers into schools, libraries, businesses, and virtually every home in America will have a profound effect on the ways in which geographic information is perceived, used, and bought. Off-the-shelf programs, such as "Where in the World is Carmen San Diego?" and "PC Globe," are already providing fun-filled hours of geographic learning; and several computer entrepreneurs are scaling down their GIS systems for use on personal computers.

As purveyors of geographic information and products, we are a natural ally for those

concerned with geographic literacy. Within a few weeks of opening, we sold maps to Senator Bill Bradley for use in his support of National Geography Awareness Week. We also created a challenging display/contest for the Week: three "electrified" maps sprinkled with colorful light-emitting diodes, each portraying a puzzling geographical distribution. Our customers were enthralled with the contest and spent hours trying to identify the distributions shown on the maps (sovereign countries which are NOT members of the United Nations, the headquarters of the 30 largest U. S. industrial corporations, and national parks).

Everyone needs geographic information to travel, to improve their understanding of the environment, to plan business affairs, and to simply enjoy the variety which is geography. We intend to have a store which is fun and serious at the same time; it is a place where people can come and learn as well as enjoy what is represented by the things we sell. We hope to take commercial advantage of this interest and value which people place on geographic information. As partners in geographic education we find that there is a need for a greater variety of materials than are readily available. While some "new" products are generated every year, there is an unrecognized demand for all types of user-friendly maps. The National Map Gallery hopes to become the place where such maps can be found.

"Where in the World is Carmen San Diego?" and "PC Globe," are already providing fun-filled hours of geographic learning...

## Creative Adventures with Chrismar

Mark Smith and Christine Kennedy

There it sits, that thin piece of paper covered with delicate curves and shapes, broad splashes of subtle color, and thousands, if not millions of bits of information. What good is it? What does it mean?

For many people maps are boring, stodgy, dull pieces of paper made by boring, stodgy, dull map-makers, and left lying around boring, stodgy, dull map libraries, and in glove compartments. But it doesn't have to be like that.

The key to understanding maps is in using them. That's what maps were made

for. We've seen hundreds of superbly crafted and antiquated maps spending their last days hanging sedately on someone's wall (we have a few such treasures ourselves), but their truly golden days were spent in someone's hands being crumpled and folded and examined closely, and argued over and prayed over and ... being used.

We love maps and love using them. That is why, when we decided to start a business, it was one that specializes in the making of detailed large-scale topographic maps of wilderness and semi-wilderness areas. Our maps are used for everything from hiking,

cross-country skiing, orienteering, to site planning and search and rescue, to promotional mailings, displays, and books. Each one is unique and has been lovingly surveyed, designed, drawn and printed to serve its purpose.

It is very rewarding and very interesting work. But one of the especially enjoyable aspects of our business is that we also have the opportunity to promote their use. One entire division of the business is dedicated to serving the need in the education, recreation, and service fields as well as among the general public for map reading and navigation skill development.

We've found (or created?) a market for schoolyard, park and wilderness navigation clinics, as well as specially designed corporate clinics and activities, instructor training, and other related services. Outdoor education centers, camps, conservation areas, recreation departments, police and military forces, a variety of corporations and a few hundred schools throughout the province have formed the bulk of our clients to date.

People want to be competent map readers and navigators. They really do. But they are intimidated. They've had bad experiences playing with stupid little compasses, or getting dumped in the middle of a huge forest and being told to find their way out. So they go through life getting lost in shopping malls, and being late for meetings, and staying on trails, and staying in the tourist traps across this continent. They miss the adventures found off the beaten track.

But they really want to understand maps. If we could just make learning about maps interesting. Well we can. It's simple to do. Just create an adventure and get the participants involved. That adventure can be played at a table or in the forest, or anywhere in between. It doesn't matter.

But there must be an adventure. Hand out a map of downtown Washington, D.C. and a list of ten special sites, easily recognizable, but interesting. Lincoln Memorial, Ford Theater, Watergate Hotel, the Pentagon, etc. Make up an adventure... You're an out of town investigator with the Department of Bureaus, the only investigator. You've been assigned to a case involving a spy ring that meets clandestinely at various well known Washington

tourist sites. Your mission is to locate these sites on the map and determine the most likely routes the spies will take to get there from Union Station. Once those sites and routes are determined and marked on the map a surveillance operation can begin and your part of the mission is over. For more excitement set a time limit!

There are zillions of such problems that can be made up to enliven the study of maps. Your imagination is the only limitation.

For hands-on outdoor adventures we've chosen orienteering as the medium by which we will expose, interest and train the public, students, teachers and other professionals in map reading and navigation skills, as well as problem-solving, decision-making, and time management skills (of interest to the masses).

All you need is a simple map. Make some small squares of paper and write a letter on each one. Stick the squares on objects in the area shown on the map. Put a circle on the map around each object chosen. Send your adventurers out to find them and copy down the letter. When they find all the markers they must unscramble the letters to spell something. Instant adventure. People will learn all about map-reading and problem solving and route choice, and maybe even spelling, without knowing it. They'll be engrossed in the adventure!

Of course it's important to take appropriate safety precautions, but a student's classroom is a great place to start, or the library, or the schoolyard. We've made over 200 schoolyard maps for just such activities. Outdoor education centers are great semi-wilderness places to use. For older students or adults why not try the tabletop Washington, D.C. exercise in the real world. There are a number of good books on the subject.

There are lots of simple games to try too. Map symbol relays, map jigsaw puzzles, board games involving maps, even computer games involving maps. Anything you can create or find that adds an adventure, a challenge, some interest to that plain piece of paper will do.

So make boring, stodgy, dull, pieces of paper into maps, but make using them an adventure. It makes *all* the difference.

Each one is unique and has been lovingly surveyed, designed, drawn and printed to serve its purpose.

But they really want to understand maps. If we could just make learning about maps interesting.

For hands-on outdoor adventures we've chosen orienteering as the medium by which we will expose, interest and train the public, students, teachers and other professionals...

# Earth Observation Satellite Co. (EOSAT)

Steven Cox

Through its global marketing efforts, EOSAT has expanded both the depth and breadth of the market for satellite data.

EOSAT has developed several innovative products, including geocoded and moveable scenes, 1:50,000-scale images and data on floppy disks.

Landsat image of the North China Plain, approximately 325 km South-Southwest of Beijing. Monochrome version of a false-color composite image.

The Earth Observation Satellite Co. (EOSAT), a joint venture of General Electric and Hughes Aircraft, was formed in 1985 to commercialize the Landsat remote sensing program. EOSAT is responsible for worldwide marketing of the entire Landsat data archive (1972 to present), the operation of two orbiting Landsat satellites, and development of Landsat 6. Following an open-bid competition in 1984, EOSAT won exclusive marketing rights to Landsat data for 10 years. Today—five years into the commercialization process—there are literally thousands of individuals, institutions and businesses using Landsat data for a variety of commercial applications ranging from crop forecasting to insurance claim adjudication. Through its global marketing efforts, EOSAT has expanded both the depth and breadth of the market for satellite data.

Marketing and sales take place on several levels. EOSAT maintains an international sales force of 10 sales managers who call on customers and prospects, participate in national and regional trade shows, and organize educational seminars. This year, EOSAT has participated in more than one domestic or international trade show a week, sponsored several one-day applications seminars, and responded to thousands of information requests from customers.

As an aid to customers in handling technical matters, EOSAT maintains a staff of applications specialists whose role is to assist in determining how best to utilize the information contained in satellite imagery.

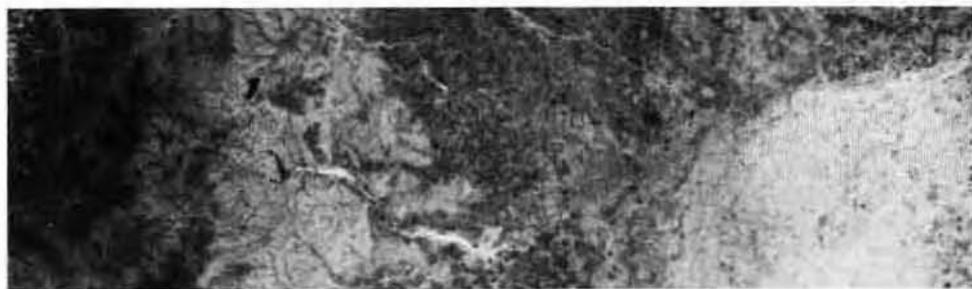
In an effort to build the remote sensing market, EOSAT is engaged in an aggressive advertising campaign featuring placements in major business periodicals

such as *Business Week*, and in more narrowly focused trade publications such as *National Underwriter*, *GIS World*, and *ENR (Engineering News-Record)*. These advertisements are bringing new clients to EOSAT from both traditional and non-traditional market sectors.

Outside of the United States, EOSAT has signed 23 in-country Sales Representatives who are selling and promoting Landsat data to local markets in countries throughout the world.

The EOSAT product line includes both digital data and photographic products. Many clients now use digital data where they formerly used maps, because they want the most current information available, and the option to have it on their desktop computers. The uses of Landsat satellite data are so wide-ranging as to include irrigation effectiveness and commodities analysis, flood damage and oil spill distribution, erosion analysis and bathymetry, land use mapping and real estate development, mineral composition and soils identification, and waterfowl habitat monitoring. In response to the demands of this diverse market, EOSAT has developed several innovative products, including geocoded and moveable scenes, 1:50,000-scale images and data on floppy disks.

As a result of these intensive international marketing efforts, EOSAT has witnessed significant increases in sales and in the worldwide satellite data user base. EOSAT believes that the market for satellite imagery is entering a period of rapid expansion, and that new and more extensive uses of remote sensing technology will result in double digit growth rates for the next several years.



# Environmental Systems Research Institute (ESRI)

Karen Hunter

**H**ow does ESRI promote or encourage, sell or market, advertise or publicize the use of maps or spatial data?

ESRI professionals communicate several messages to organizations that use or have a use for spatial information.

First, ESRI informs organizations of the benefits of organizing spatial information in a spatial format, such as a map, versus using tabular or descriptive formats that cannot as easily describe the spatial relationships between features.

Second, they explain how an automated approach to managing spatial information can enhance productivity compared with using manual techniques by allowing users to create higher quality map and report products, create them faster, and easily update information as it changes.

Third, ESRI promotes the use of a geographic information system (GIS). GIS has capabilities far beyond simply automating map information. It has features that allows users to import data from other formats, perform a variety of data management functions, analyze and model data in sophisticated ways, and produce high-quality cartographic output.

These messages are communicated in a variety of ways.

**Word of mouth:** Many people hear about our products from our existing users (approximately 5,000 copies of ESRI's software have been sold), or from people who are familiar with ESRI's software.

**Written Messages:** ESRI produces the following forms of written messages:

- Brochures that describe the benefits of GIS and ESRI's products

- Reports describing projects that have been completed using GIS technology

- Newsletters that describe current trends, new products, and applications in GIS

- Advertisements that are placed in trade journals

- News releases and articles that are submitted to trade journals for consideration

**Videotapes:** ESRI has produced four videotapes that discuss various GIS topics, ranging from introductory information to specific applications.

**Meetings:** ESRI meets with organizations that are considering the use of spatial data through a variety of channels:

- ESRI attends more than 100 trade shows each year where ESRI representatives present papers, chair panels, and exhibit products all relating to GIS technology.

- ESRI holds seminars, often jointly with other companies, to inform those in attendance about geographical information systems and/or the use of GIS with other technologies.

- ESRI meets with individual organizations both at ESRI's offices and at the organization's site to inform key staff people in the ways GIS technology can benefit their organization.

The concept of education for clients and non-clients alike about GIS, how it works, and the enormous capabilities it offers to users is an important part of ESRI's philosophy. The mechanisms noted here are a few of the ways in which ESRI staff members share this type of information.

...an automated approach to managing spatial information can enhance productivity...by allowing users to create higher quality map and report products, create them faster, and easily update information as it changes.

## OSU Map-for-the-PC

Duane F. Marble

**T**he introduction of computer-based spatial data handling technology promises to bring about a revolution in the way in which we deal with the analysis of spatial problems. This technology,

commonly known as Geographic Information Systems (GIS), permits the rapid, accurate handling of large volumes of detailed spatial data. Regrettably, many implementations of this technology have

*OSU MAP-for-the-PC* is now used by over 220 colleges and universities around the world to provide basic instruction in spatial data handling and analysis...

required combinations of software and hardware which were priced at a level which denied access to a large number of potential users in schools, small organizations, and developing countries.

Three years ago the Geographic Information Systems Laboratory of the Department of Geography at Ohio State University released *OSU MAP-for-the-PC*, a very low-cost software package that — in combination with powerful, low-cost personal computer (PC) hardware — makes this technology easily accessible. The software will run on any PC with a graphics display (EGA/VGA or monochrome) and a hard disk drive. The program is based upon a grid cell oriented, map algebra system originally developed by Dr. Dana Tomlin and has been enhanced through the efforts of a number of individuals.

The software, together with a number of utility programs and eleven real-world databases and full documentation, is made available to academic users for just under one hundred dollars and to non-academic

users for slightly more. The initial purchase, for academic users, covers a site license under which unlimited local copies may be made of the software, databases, and documentation. This has permitted the wide distribution of basic GIS technology at little or no cost to the potential user.

*OSU MAP-for-the-PC* is now used by over 220 colleges and universities around the world to provide basic instruction in spatial data handling and analysis and has recently received the Faculty Software of the Year Award from the Microcomputer Specialty Group of the Association of American Geographers. The software is also used by about 50 operational agencies for staff training and for small GIS projects.

A new version of *OSU MAP-for-the-PC* (version 3.1) will be available in the first half of 1991 and it is planned to release a Spanish language version (3.1S) at the same time. The Spanish language version is being created through the cooperative efforts of a number of users in Latin America and Spain.

## IDRISI

Lee Thomson

Created specifically for microcomputers, IDRISI was designed as an inexpensive research and teaching tool. This grid-based geographic analysis system was developed to integrate geographical teaching in general with GIS technology and techniques. This educational approach will serve the map library community effectively as they move towards digital data and more technological answers to spatial information requests.

Digital data in map libraries represents a new step in data archiving and retrieval because it is a step into an uninterpreted medium, requiring hardware for viewing and frequently for manipulation. Maps are an interpreted medium; the data they represent have been manipulated and interpreted and the results are presented on the page for the user. A map is readily understood by and immediately useful to the user because of the effort that has gone into data manipulation.

Digital data can be a simple digital representation in the form of a map. An example of interpreted data in digital form is Richard Smith's *Electronic Atlas of Arkansas*, or the U.S. Geological Survey Line Graph data, digitized from their 1:24,000 and 1:100,000 scale maps. These digital products are immediately useful in the same fashion that paper maps are, because of the interpretation of the data before publication.

In other cases, digital data yield an "unfinished" product such as information from a satellite or digital photogrammetry. Raw numbers must be interpreted, manipulated and classified by someone with a degree of expertise before they become useful. This is not to say that access to such data should be restricted, but rather that new users of the data should be appraised of the state of the data, and familiarized with tools to interpret the data so that they can produce the maps they require.

This educational approach will serve the map library community, effectively as they move towards digital data and more technological answers to spatial information requests.

Digital data, whether interpreted or uninterpreted, require a means of display. While paper maps are the mode of display for analog data, digital data require either a screen or some printing device. This forces the map librarian to acquire hardware and software to process the digital data, and it means that education will be necessary for both librarians and users about both the data available and the inherent strengths and weaknesses of these resources.

In an environment where digital data are a significant percentage of the data managed, IDRISI can play two roles: to access data, and to teach both users and librarians. The strengths of the system lie in the display and manipulation of raster format data, such as that produced by satellites and other continuous digital sampling methods. Vector format data are also supported, such as USGS Digital Line Graph information showing water bodies, roads, political boundaries and contours. The two types of

data can be integrated for analysis or used separately.

Because of its low cost, extensive documentation and minimal hardware requirements, IDRISI can be used as a data exploration tool. IDRISI has a rich set of modules for the display of digital data, as well as the image processing tools necessary for raw data manipulation, spatial statistic calculation, and GIS capabilities. A large number of conversion modules encourage the transfer of data between IDRISI and other popular GIS and image processing systems.

IDRISI is a good vehicle to explore digital data, assessing the strengths and weaknesses of the various sources and types of data. This exploration can best be done by users with a clear understanding of the data set and the problem to be solved. IDRISI has proved to be popular and effective as a vehicle for teaching GIS at the university and professional level.

**IDRISI can play two roles: to access data, and to teach both users and librarians...**

## Historic Urban Plans

John W. Reps

**H**istoric Urban Plans reflects my scholarly interests in the history of urban form, particularly in the planning of American towns, and in the images of them created by cartographers, surveyors, and artists. My eleven books explore these subjects and help to explain the significance of such printed and manuscript graphic records in historical investigations.

During the years of research for my first book, *The Making of Urban America*, I found only a few facsimiles of such materials available and resolved to see if publication could be commercially successful. A small catalog illustrating and describing the first six facsimiles went to a few hundred college and university libraries, city planning offices, and friends in November 1964.

Enough orders were received to make it possible to add another dozen or so items for a second catalog and to expand the mailing list. In the next few years, virtually all profits were used to add new titles and to reach additional libraries and individuals. By the end of the first decade, we stocked

more than 300 titles, of which about two-thirds were of North American subjects. We now offer a selection of 400 titles in this series.

Engravings and lithographs in the owner's collection provided sources for some of the images, and a great many others came from the Cornell University Library and the Library of Congress. Several collections allowed us to use additional important images in their custody, among them the National Archives, the British Museum, the Mariners Museum, the American Antiquarian Society, Winterthur, and a number of state historical societies.

We began a second series of facsimiles in the late 1970s. Using many of the original images but reducing them somewhat, Historic Urban Plans printed these on sheets of uniform height (the width depending on the format of the original) and at a uniform low price. Now numbering 145, all but eight are in either full color or are printed with the characteristic accent tone of nineteenth-century urban views.

This series includes 35 maps, mainly of

**In the next few years virtually all profits were used to add new titles and to reach additional libraries and individuals.**

The only contact Historic Urban Plans has with map librarians is through our catalogs.

the 16th–18th centuries. These include such significant items as the 1570 map of the Western Hemisphere by Ortelius and Speed's version of 1626, Blaeu's world map of 1635, the Mercator-Hondius map of Virginia and Florida in 1606, Sanson's North America of 1650, Visscher's New York and New England in 1685, Coronelli's West Indies of 1688 and Moll's map of the region in 1715, Delisle's French Louisiana in 1718, Bellin's Great Lakes in 1755, and a version of John Melish's map of the United States in 1820.

Many libraries, geographers, and others have purchased these maps directly from Historic Urban Plans. A wider public can buy them in bookshops of more than 200 museums, historical societies, state and

national historic parks, and museum villages. We also sell to a great many map shops and, because our facsimiles of city views are so decorative, frame shops are also important customers.

The only contact Historic Urban Plans has with map librarians is through our catalogs. We mail the catalog of our original series once a year in the fall. Other catalogs and occasional special offerings are mailed two or three additional times. We have no sales representatives, nor do we solicit business by telephone. I am grateful for the support that map librarians gave us at the very beginning of the business and for the many favorable comments received from them about the quality of our products.

## Grace Galleries, Inc. Jacqueline Grace

When we started "Grace Galleries Antiquarian Maps and Sea Charts" some years ago, we decided to target our advertising and promotion to people with maritime interests because the development of cartographic and maritime interests have always been closely related.

With this in mind, we focused our promotional efforts towards boat owners, cruising sailors, weekenders and day-sailors, pilots and navigators, national maritime services personnel, and even armchair sailors.

Cruising sailors and weekenders are familiar with contemporary marine charts and the basics of navigation. Armchair sailors are often readers or writers familiar with maps in books and atlases and stories of ancient and modern mariners.

Furthermore, we thought that sailors who use Loran, computers, weather reports, radios, auto-pilots and up-to-date charts, would be interested in the antecedents of their modern tools which had been drawn by master mariners venturing out to sea in search of trading ports, and to discover the unknown world, with nothing more than a compass, a portable astrolabe and a sketch of a route drawn by a previous navigator that might be many degrees off course.

As an added attraction, many of the old sea charts are highly decorative. Ships in full sail, whales blowing water spouts and evil looking serpents glide over the oceans, while dark natives with spears are positioned on fantasy islands in a title cartouche, ready to attack the unfortunate mariner who dares to land.

We found that people with maritime interests often live or vacation near water. Their recreational interests lie in the harbors, bays, rivers and lakes of the region. Studying and eventually acquiring old maps of these areas increases their interest, especially if the old survey shows, for instance, that the acre of mainland they now own was once an island and that the marina where they moor their boat was once a swamp.

As we began to deal more in early coastal charts, we developed a steady group of clients from the legal profession requiring the charts for use as evidence in disputes over prior ownership of coastal lands. We also had inquiries from coastal land developers and speculators wanting to see the old surveys to evaluate the degree of waterfront land erosion and changes that had occurred over the past decades.

To date, we find ourselves being more involved with naval historians wanting

...we thought that sailors who use Loran, computers, weather reports, radios, auto-pilots and up-to-date charts, would surely be interested in the antecedents of their modern tools...

cartographical information about the early surveying of harbors and waterways; writers researching books on early explorers and their tracks; and local historical societies, in harbor towns, looking for early maps pertaining to the discovery of their regional areas.

We have sold antique maps to decorators designing the interiors of cruise ships and the offices of marine traders, brokers and charterers. We have been asked to lend maps to publishing houses for reproduction as illustrations for articles on marine subjects. We have been requested by treasure hunters to provide early maps showing the sites of wrecked ships, and we

have been asked by people studying marine biology to provide early charts which describe the location of fishing grounds and whale sightings.

Interest in marine cartography has no horizons and tomorrow we know there will be another request for early charts of the Aegean or Baltic Seas, Fiji or Pitcairn Island, from a cruising sailor just returned from one of these regions, who wants to hang the chart in a boat, or office or over the fireplace.

That's just one more reason why we advertise in maritime publications and target our promotions toward people with maritime interests.

Interest in marine cartography has no horizons and tomorrow we know there will be another request for early charts of the Aegean or Baltic Seas, Fiji or Pitcairn Island...

## Marketing Antique Maps

George Ritzlin

Selling old maps and atlases is a very personal business, and nearly all the dealers we know entered the field because of their own interest in maps. My wife and I work together. She knows more than I do about art, history and literature, so she concentrates on research in addition to helping with the many chores that need to be done in a small business. She also has a knack for finding interesting things when we go book hunting.

The rare book and map market is a micro-business. The sales volume of the largest rare book and map dealer would be modest for a small town automobile dealership. As the market for old maps is small, conventional marketing methods are not effective. Every map dealer has his or her own approach to this problem.

We do very little to find clients. It sounds odd to say that we sit around waiting for people to call or write us, but that is close to the truth. We try to make it easy for potential clients to find us through a limited amount of highly targeted advertising, and by listings in dealer directories. Our current mailing list has a little over a thousand names. It's not practical to mail to the general population, even with careful demographic selection, because such a tiny percentage are map collectors. In general, names of collectors are not available from

other dealers. Even though the names of the most active collectors are often known to many dealers, the customer list is a valuable and carefully guarded business asset.

Most of our clients have come to us through referrals, requests, and personal contacts. Much of our business is handled on the phone; the occasional five-minute conversation goes a long way to establish our understanding of a collector's goals and budget constraints. Though our business is primarily by mail and phone, we do see people by appointment. Since many people pass through the Chicago area on business, we have enjoyed the chance to meet with a number of out-of-town collectors, librarians, and dealers.

We prefer clients who will be repeat customers. We don't turn down those who are likely to be one-time purchasers, *i.e.*, maps as gifts, but neither do we actively seek them. We also sell out-of-print cartographic reference books because long term collectors often build their own reference libraries. Because this is a personal service business, we are more effective working with repeat clients than if we had to start from scratch every time we sold a map. Personal relationships are integral to serving their needs. Good relations with a client help us to understand

...the customer list is a valuable and carefully guarded business asset.

what the person is looking for and aids us in our own searches. It's an old fashioned approach, but it does seem to work.

It also reflects a personal attitude. I'm not really a collector. Much as I like maps, my enjoyment primarily comes from the hunt for old maps and the challenge of identifying a particularly obscure one. I also want to see the maps go to good homes where they will be loved and cared for.

Our clients fall into one of three categories: private collectors, institutions, or trade. All have a genuine, deep rooted interest in maps. Institutions and dealers differ from collectors in one respect—their names can be obtained from directories, so we can readily mail catalogs to them.

Private collectors are more likely than curators to emphasize artistic appeal in the maps they acquire, whereas we find institutions are primarily concerned with subject matter. However, institutional purchases still involve elements of personal taste. The curator or librarian who makes purchase decisions expresses a judgment as to what is appropriate for his or her institution. Dealers make buying decisions based on what their customers want. Most dealers concentrate on areas in which they already have a personal interest and thus attract clients who share that interest and enthusiasm.

When clients first contact us, we usually send them a recent catalog or list so they have an idea of the types of maps we carry. If they tell us their areas of interest, we check our inventory and mention any possible fits, and if we find a specifically requested map or book in stock, we will send a description, sometimes accompanied by a photograph.

This initial contact stage can be frustrating on both sides. Many requests don't mention areas of interest, so all we can do is send a

catalog or list. On the other hand, when a request for maps covers a very large area, it can be difficult to respond. Requests have been as broad as "Please send me a list of all your maps of America and portions thereof." It's not practical for us to create an individual catalog as we haven't computerized our inventory.

Ideally when we buy maps, we would have a particular client in mind for each one. In practice, many maps are purchased for stock simply because they are of a type which our client base is likely to buy. Also, we buy maps for which other dealers may have customers and then sell or trade the maps to the dealers.

At the other extreme from general stock is the very rare and desirable map. Our problem often is to whom do we offer the map? We first consider into which collection the map will best fit. When several collections are equal in this regard, other issues come into play. These include how promptly people pay and how easy or difficult they are to do business with. When all else fails, we consider how long it has been since we offered something to each collector. This is our version of rationing.

Depending on circumstances, we either will offer maps in individual quotes or put them into lists and catalogs. Telephone quoting is generally limited to expensive maps where the client may have several questions which are better answered verbally than by drawn out correspondence. Less expensive material is usually offered by mail.

In summary, this odd little market is small, personal and a lot of fun. You don't have to spend thousands to start building a collection. Many fine maps are available for a modest sum. You'll also get to meet an interesting group of people. If you haven't done it before, jump in.

Much as I like maps, my enjoyment primarily comes from the hunt for old maps and the challenge of identifying a particularly obscure one.

Ideally when we buy maps, we would have a particular client in mind for each one.



Lewis Evans, 1755. *The Middle British Colonies... [and] the Country of the Confederate Indians...*

# The Philadelphia Print Shop

Donald H. Cresswell

**M**y approach to selling antique maps is derived from an academic interest in using pictures for analysis of historical events. I wrote a *dissertation on the prints* of the American Revolution that were published at the time and combined an extensive checklist of institutional holdings with a *discussion of how the contemporary pictures differed from subsequent paintings and prints*. This work included pictorial elements on maps—including small vignettes on maps as well as allegorical elements in cartouches.

The map itself can be seen as a picture of the earth looking straight down upon a portion of it, and although as a humble graduate student, I did not argue for entire maps as pictures, I have subsequently used maps as pictures of historical events. In fact, there is no better picture of a large area of the earth as mankind saw it at some time in the past than an historical map. To hold an original map in your hand and know that you are looking at the world as Sebastian Munster saw it in 1540 or at the route of Lewis and Clark as Mathew Carey saw it in 1814 is a thrilling experience. Beyond seeing is the feel of the old paper and an understanding of how the technology of the times allowed a printer to apply a wood-block map to paper as with a Munster map

or how a copper plate can be sent through an intaglio press to produce Lewis and Clark's map. In the instances given, each has an historical context that is fascinating because Munster was using a Medieval medium to convey Renaissance information while the Lewis and Clark map was produced under extremely difficult circumstances due to the country being embroiled in the War of 1812.

The story of maps and mapmaking is not synonymous with the story of prints and printmaking because the two art forms use different conventions to convey information. Some curators of maps have accused me of an apostasy that would call for map collections being combined with print divisions in museums and libraries, but nothing could be farther from the intention. The two areas of interest have much to learn from each other because maps and prints share the same mediums and thus the same engravers, lithographers, printers and publishers. We sell an extensive line of books about map and print making, and curators in both fields find information about the interests of one field within books about the other. Such cross-disciplinary concerns enrich research and place us all closer to the best in art and science of past ages.

**The story of maps and mapmaking is not synonymous with the story of prints and printmaking because the two art forms use different conventions to convey information.**

## Newspapers in Education:

A natural medium for promoting use of maps, charts and other kinds of spatial information.

Joan Henges

**"The impression made in bringing the two together is far more lasting than when each is considered separately..."**

**C**ertainly for decades, and likely through the centuries of their existence, newspapers have been used by educators as resources to 1) spread geographic knowledge and 2) to transfer information about people and events to an understanding of the matrix "place" imposes. Over 100 years ago, the Superintendent of Schools for Kansas City, Missouri, wrote about the wealth of information contained in one

edition of the newspaper and the benefits of reading news articles in the classroom while using maps: "The impression made in bringing the two together is far more lasting than when each is considered separately. It is highly probable that geography may be learned in this way much better than according to the method of question and answer."\*

Only in the past couple of decades have

newspapers made a concerted effort to reach out to the education sector. Targeted are the teachers of grades K-12, but the effort is not limited to them alone. At most newspaper companies, this corporate concept is called "Newspapers in Education." It is international in scope. The mission of NIE is to encourage and simplify for educators the use of newspapers as teaching/learning resources. NIE representatives can be found at most large metropolitan dailies (and many smaller dailies and weeklies, as well). Teachers can obtain special training and materials in the form of curriculum-specific guides and supplements in order to extend the value of classroom newspapers. For example, a guide currently available is "Discover Geography in the *Kansas City Star*," written for the Star Co. NIE department by Ann West, an educational consultant. This material presents activities to reinforce a wide range of geography skills.

For students, using maps with news stories or incorporating news items into the study of geographic locations lends relevance and immediacy to lessons. Newspapers contain a variety of maps, charts, and other graphic displays to present spatial data. An area affected by an event is

displayed in map form as a part of a news article to enhance and add breadth to comprehension. Comparison of this kind of graphic with a classroom map serves to reinforce students' understandings of the kinds of information the maps present. Most newspapers have maps that are constants. For example, a U.S. map on which weather projections are shown and a classified-section metro area "locator map" are found daily in the *Kansas City Star*. Both of these maps serve as excellent resources for teachers to have students apply geography activities. NIE sponsors programs such as the Kansas City Chiefs Gridiron Geography Program which capitalizes on students' interests in football to motivate studies.

In short, NIE around the world takes advantage of newspaper components to support and promote use of all kinds of cartographic materials. It is a resource as close, usually, as your daily newspaper company offices.

\*Taken from "The Daily Newspaper in School," by J.M. Greenwood, Supt. of Schools, from the *Eighteenth Annual Report of the Kansas City Public Schools ... For the Year 1888-1889*.

...using maps with news stories or incorporating news items into the study of geographic locations lends relevance and immediacy to lessons.

...one of the most successful public service programs ever developed by a professional sports franchise.

## Kansas City Chiefs Gridiron Geography Program

Brenda Boatright and Robert W. McColl

When a student from Huntsville, Alabama, requested information about Kansas City and its geography in 1979, he became the catalyst for a public service program which would extend from Kansas City to a third of the teams in the National Football League within the decade.

The initial request was not difficult, and the public relations staff handled it quickly. The program which would eventually involve 1800 teachers each year came to assume considerably more time and effort, but it would be one of the most successful public service programs ever developed by a professional sports franchise.

The program was supported by corporate sponsors, the *Kansas City Star*, as well as teachers selected from the school districts. The National Geographic Society would

provide maps for the classrooms. Geographers from the University of Kansas would participate as advisors. Together these people prepared classroom exercises, designed special maps, and developed promotions that would "trick" students into learning geography—there were simple rewards. Players visited different classrooms. They stress the importance of education and how geography might affect the game (altitude in Denver, humidity in Miami, bitter cold in Green Bay or Chicago, and time changes when going east and west). It was (and is) a commitment by teachers and professors, community leaders and players, national organizations and the sports franchise staff that is widely regarded as a success.

The real key to success is the involve-

ment of the teachers. This was especially important in the creation of the weekly exercises. Students had to use maps to find answers about the geographic locale from which the Chiefs' opponents would be coming—or where the Chiefs would be going. How many time zones would be crossed? What major features would be seen from the airplane? What was the locale like—what are the major scenic features?

*The Kansas City Star* made the program a public affair. Once a week the program was carried to the general public. Geography and the importance of place and the role of maps were presented to the entire population.

At this point, the program continues, changing each year, trying new teaching strategies and activities. After a decade, it is not clear just how effective we have been. Do students who have participated in the Gridiron Geography Program do better on map quizzes than those who have never participated in the program? It is clear, however, that the teachers are enthusiastic: "Geography isn't what it used to be. The Gridiron Geography Program slips key geography skills into a sports context which motivates the students." "The Gridiron Program added a challenge to my 4th grade social studies classes. It strengthened their map skills and made them more aware of the features of the United States."

"Geography isn't what it used to be. The Gridiron Geography Program slips key geography skills into a sports context which motivates the students."

...dispatchers will guide you to wherever you need to go, from wherever you're standing—or parked.

## Improve Productivity and Never Get Lost Again! Telemap Personal Routing Service

The goal of the San Francisco-based Telemap Corporation is to be state-of-the-art in user-friendly navigation services for travelers. The year-old service is provided to increase the personal productivity of travelers, keep them on schedule, and keep them from ever getting lost again.

Developed to support mobile businesses, Telemap makes available address-to-address street directions by both telephone and fax. Subscribers to this personal routing service use a 24-hour 800 number

to get concise, step-by-step directions to any address in the United States and Canada—across town or across the country. Telemap's dispatchers will guide you to wherever you need to go, from wherever you're standing—or parked.

Combining computer and telecommunications technologies, Telemap uses and updates an extensive library of maps and specially designed forms to route their subscribers.

The company offers "Pre-Trip" routing for planned, multiple destination trips, "Anytime" routing for spontaneous trips, and "Rescue" routing for subscribers who are lost, disoriented, or need an alternate route.

Telemap also provides Emergency Message Center services. Dispatchers will relay urgent messages and contact designated third parties in the event of an emergency. Maintaining such a very large data base with addresses of a wide variety of public facilities makes it possible for Telemap to offer over 30 "Locator" services for travelers who request the location of, and exact directions to, the nearest ATM, post office, public fax service, golf course, hospital, hotel, campground, or other facility.

In addition to these personal subscriber-oriented services, Telemap configures customized services for government, medical, sales, fleet, and commercial clients.

**TeleMap™**  
Personal Routing™ Service

# FAXMAP™

TRAVEL DIRECTIONS BY FAX

**1-800-843-1000**  
FAX Line: (415) 947-1867

Address-to-address travel directions by phone or fax

**Customer**

Customer's TeleMap ID # \_\_\_\_\_ User's FAX # \_\_\_\_\_

Starting Point Name \_\_\_\_\_ Starting Point Address \_\_\_\_\_

**Destination**

Destination Address \_\_\_\_\_

Leg	A	B	C	Street / Highway
1	Go	Dir.		
2				

**TeleMap™**  
Personal Routing™ Service

## PHONEMAP™

TRAVEL DIRECTIONS BY PHONE

Address-to-address travel directions by phone or fax • USA & Canada • 24 Hrs. Keep a pair of PhoneMaps handy in your briefcase, glove box, and by each phone.

INSTRUCTIONS: 1) Call TeleMap & provide your account number (from your MapCard). 2) State where you are & where you want to go. 3) Copy directions onto this PhoneMap.

Phone Hotline  
**1-800-843-1000**

Cellular Hotline  
**\*MAP (627)**

Fax Hotline  
**(415) 947-1867**

Starting Point \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Destination Name \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Destination Address \_\_\_\_\_

Remarks \_\_\_\_\_

A	B	C	D	E
Go	Dir.	Street / Highway	Distance	To / Leg Change
1				

**TeleMap™** **MAPCARD™**

# Marketing Map Libraries in Academia

Mary L. Larsgaard and Larry Carver

University of California, Santa Barbara

Complex goals demand a team effort—Map and Imagery Laboratory, the library, faculty, equipment vendors—or they won't work.

Maintain a constant dialogue with faculty and administrators creating a critical mass of political weight.

As you read the following papers, you will discover that there are many ways to promote one's map library (or, as we prefer to think of it, one's spatial-data information center). You may begin to suspect that the most important point is to choose the methods that match your personality and your institution's culture and goals.

The most important thing to do is to figure out what you do best, what needs to be done, and what persons—in the department, the library, and elsewhere on campus—can do what you cannot do. Take advantage of strengths, your own and others. Complex goals demand a team effort—the Map and Imagery Laboratory, the library, faculty, equipment vendors—or they will not be achieved.

The following techniques have worked at Santa Barbara; others will need to adapt these to their own personalities and situations.

Find out what your clients need and want, without confusing your own needs, or what you think they should need, with theirs. Get them thinking about where they want to be, not what is currently possible, and what will give them a competitive research edge.

Talk with experts in areas where you need knowledge, and read.

Translate a solid, well-defined vision into institutional goals without being sidetracked into a specialty that might go away when a specific faculty member leaves.

Maintain a constant dialogue with faculty and administrators creating a critical mass of political weight. Build your case so that it parallels campus programmatic trends.

Maintain collection development in a way that illustrates an understanding of current and future information trends.

Maintain credibility with clients and peers by keeping them informed of major developments and changes in direction.

Record carefully what happens. Set up folders for each project. Note what was said and the outcome. Chronologies are important.

Be candid with yourself and others about what you know and don't know. Don't be ashamed about not knowing everything, and of not being able to do everything.

Approach persons very gradually. Listen to what is really being said, not just words. Be ready to back off temporarily or change focus if the person is uncomfortable or threatened. Let people get used to an idea slowly; don't dump the entire project on someone at one time.

Focus on your audience, on what the campus departmental community needs, not just what the library needs.

Involve people from outside the library. Don't preach to the converted.

Inform the library administration; they must believe that the project is credible for it to move forward. Drop seeds well in advance to see how ideas are received. Give information about basics to reduce anxiety levels. Projects must enhance the library image.

Make technology work for you; it is only a tool. While analog (paper) projects will be around for a long time, digital is the way that spatial data are going.

Be prepared to be pro-active rather than reactive, especially when dealing with Geographic Information Systems (GIS). Pay attention to new developments; with so much happening so quickly, it is going to be difficult to learn enough fast enough to use the many new formats to benefit your collection.

Always focus on your clients' needs and your department's mission.

There are very few mind-readers out there; if you do not let your audience know that your collection exists, those with a childlike faith in the card catalog (manual or on-line) will continue not to find you.

1. Anywhere, get to the users in as many ways as you possibly can:

- a. Distribute fliers
- b. Set up exhibits
- c. Apply for grants
- d. Teach classes

2. Get materials into the catalog!
3. If you're in academia, go to the departments; don't wait for them to come to you.

4. Always, always, work from strength: The collection's. Yours personally. The institution's.  
Whatever you choose, DO!!

## Consider the Use: Oregon Episcopal School

Kate Loggan

Maps are an essential resource for school libraries, and therefore teachers in elementary and secondary schools need little encouragement to use them. Unfortunately teachers' wide range of responsibilities makes it difficult for them to become aware of all the possibilities—they occasionally need some guidance.

Recently a teacher new to our school and state came to the library to ask for a map of Africa for her classroom. After a short discussion, we decided that the best method would be for her to take a purchase order to our local travel bookstore and buy one. She came back empty-handed and said, "I couldn't do it. I need to think about it."

Consideration of a few simple criteria would have probably enabled her to make a choice and enjoy doing so.

1. Primary use. Will the map be referred to frequently in a lecture situation? If so, how large is the classroom and how much detail must be visible from a distance?
2. Features. Physical, political, etc. This is a crucial consideration and may require the purchase of more than one map if many features are desired.
3. Substitution. Sometimes the ideal

map does not exist. Consider possible alternatives.

4. Longevity and cost. What is the budget? Will this map be a permanent addition or an experimental supplement to the curriculum? Is this a small purchase to fill a need until funding can be acquired for an expensive and permanent map?

5. Wear and tear. What sort of use will the map get? Does it need to be stored? Will it be written on or cut up?

A school librarian can help teachers acquire maps by being knowledgeable about geography and the ability of maps to communicate a wide variety of spatial information. A good assortment of catalogs is important; a teacher who is planning to purchase directly from a map store will find it useful to examine the catalogs first in order to learn what is likely to be available.

The enthusiasm of children of all ages for maps makes it easy to encourage learning. While teaching some map skills may be difficult, the proper task and an effective map will generate surprising results. It all begins with a few maps, some catalogs, and some good ideas.

Even a teacher who is planning to purchase directly from a map store will find it useful to examine the catalogs first...

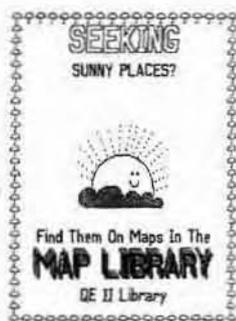
## Promoting the Map Library Memorial University of Newfoundland Alberta Auringer Wood

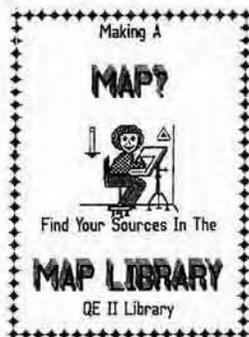
As a map librarian, one relies on a variety of methods, some formal and some informal, to make prospective users aware of the existence of the Map Library. All efforts require a bit of effort, but they are all worth it.

We created and distributed a brochure accompanied by a letter which advised

department heads, deans of faculties and directors of research institutes and others, of the hours of operation for the current semester. The brochure provides an overview of our resources and services.

Using a software package called Printshop, we prepared a number of signs which were posted on bulletin boards around the





campus. These, and the continuing series of displays in the library exhibit area, have resulted in new patrons.

Informally, luncheons with members of various departments, particularly with the faculty of the geography department, will lead to wide-ranging discussions and the opportunity to promote the role of the map library and its resources. It is important to make an effort to visit a department, introduce yourself to the faculty individually and collectively, and ascertain their needs and interests. In some cases, it is

possible to determine research and teaching needs with a written questionnaire. Attendance at departmental lectures and seminars, and even participating in these events will provide an opportunity to publicize the available materials.

Finally, your student staff serves as an important resource. Not only are they, when on duty, often less imposing to their peers, but they also are important for broadcasting to the academic community the opportunities which will be found in the map collection.

## Yale University

### Barbara B. McCorkle

**I**n most colleges and universities with a map collection the geography and geology departments are major sources of users and user support.

Geology has long been strong at Yale. Several small, departmental geology libraries unaffiliated with the University Library existed, and maps were included in their holdings. In 1965 when the department moved into a new building, these libraries and several other geological collections at Yale were merged into the new Geology Library. Distant from Yale's central library, the Geology map collection has developed separately from the map collection at Sterling.

Geography has had a checkered career at Yale over the past one hundred years, ranging from one basic course in 1893 to 16 by 1958/59, when a Geography Department, offering a major, was established. The discipline flourished for less than ten years, and Yale's Geography Department was phased out in 1967. Courses and faculty were absorbed into other departments.

Interestingly, the growth of the map collection has not paralleled the change and growth of a geography department. The Yale University Library has collected maps since its inception. President Thomas Clap's *The Catalogue of the Library of Yale College in New Haven*, written in 1742, included atlases and Mead's *The Construction of Maps* (London, 1717). As the

college grew into a university, and the library moved into its own building, books with maps and individual maps were added to the collection. The latter were (shudder!) folded, bound into acidic Gaylord bindings, and shelved right along with the books. Not until 1930, when the Sterling Memorial Library was opened, did a separate Map Collection exist in its own quarters. It occupied one large room on the sixth floor; tall, gothic-style windows were decorated with seven rondelles reproducing early maps and specially designed oak map cases held the maps. It was an attractive room. However, within 25 years the collection outgrew the room, necessitating a move to the quarters it presently occupies.

When the current curator assumed her position in the summer of 1979, the statistics for the previous academic year reported only 502 users, and one of the challenges of the job was to raise the visibility of one of the best map collections in the country. We have had some success. Use of the collection in the academic year 1989/90 reached a record high of 1355 users. The story behind that increase is one of stressing excellent service, increasing open hours, and outreach. The following suggestions, based on our experience, are offered to help map librarians who find themselves without a supporting department and in need of increasing use to justify their existence to the administration.

**Get faculty into the collection.** This is a

Attendance at departmental lectures and seminars, and even participating in these events will provide an opportunity to publicize the available materials.

Faculty involvement has been crucial to the development of the Map Collection at Yale.

A large exhibition is very nice, but not necessary. Any map exhibit is going to capture an audience.

vital first step because their support is essential to your collection. Faculty involvement has been crucial to the development of the Map Collection at Yale. Eleven years ago the curator's position was half-time, the other half of the position shared with the Reference Department. As a result, hours of opening were shortened and necessary planning and work didn't get done. A group of concerned faculty approached the Library Director and asked for help. The Director, alerted to faculty needs, formed a Map Resources Committee which spent a year of investigation and inquiry. The happy outcome was that the curatorship became full time, and we were able to increase our hours of opening.

Once you get faculty into your collection, give them super-service. Have dealers and suppliers catalogs on hand to show what's in print. Assemble maps and atlases for their perusal. Trot out maps they never knew existed. Once they know you have resources for them and their students you will find they become steady users.

How do you reach your target faculty? Methods will vary, of course, depending on a library's organization. Area curators/bibliographers are a prime contact point.

**Use them.** Discuss with them your holdings and your holes. Use their bibliographical expertise in areas where you are weak. They may even put some maps or atlases on their budgets, instead of yours. Find out in what areas their particular faculty are teaching and doing research and build on that, being sure to let those faculty members know the resources you have for them.

Look for less obvious uses of maps and contact the appropriate departments. For example, if your architecture faculty and students aren't using your maps in site planning studies, why not? We find USGS maps are now frequently called for by graduate students in the School of Architecture. Does your institution offer courses in art history and graphic design? Map borders and cartouches are excellent examples of art styles through the centuries, and thematic maps—either sheet maps or in atlases—are highly successful as illustrations of good or bad design.

**Teach.** Offer to give sessions in courses to show how maps can be used as research documents. We now have professors of Anthropology, Forestry, Geology, and several other departments who include one or more map room sessions for their undergraduate and graduate students. Check the course catalog to see what current courses could incorporate a map component, and then get in touch with the professors.

Devise a course, utilizing your collection. If you have a strong historical collection, as we do at Yale, the History Department is a potential source of users. A course in the history of cartography, first offered by this curator under Yale's special College Seminar program, has now developed into a regular course offering in the History Department, and has brought the Map Collection to the attention of students in a number of disciplines. It has also made the Map Collection more visible to the History Department, with resultant increased use.

**Exhibit.** Maps are eye-catching, marvelously visual objects. A large exhibition is very nice, but not necessary. Any map exhibit is going to capture an audience. Go for the spectacular if you can, but remember that it is more important to have a cohesive theme or a focal point. You want to catch the attention of members of the academic community, and make them think about what maps might do for them or their students.

Other options, not always available for private institutions, are open to map collections connected with public institutions. You might consider holding an open house for local genealogical buffs, or writing articles for the local newspaper about new collections and items of local, national, or topical interest.

The sum total of all of these efforts can, with enough energy and imagination, furnish your map collection with a solid base of support not dependent upon any one source, but broadly enough based to survive the loss of any one segment. And in the process you will find you have sharpened known skills, learned new ones, and become a wiser map librarian.



# University of Arizona Map Collection

Christine Kollen

Maps are an integral part of the culture of any country or area, and they reflect human perceptions of the world during different time periods. They are mirrors of culture and civilization.

This past year the University of Arizona Map Collection has promoted the collection with funding from a number of grants and outside sources. Several of these projects can be described by the theme "Maps and Culture." These include the purchase of an antique map to commemorate the 35th anniversary of the Map Collection, a Columbus Quincentenary map exhibition, and a lecture held as part of the spring meeting of the Western Association of Map Libraries (WAML). In addition, the Map Collection has received a \$70,803 grant to provide bibliographic access to the Latin American collection.

The University of Arizona Map Collection has promoted the collection with funding from a number of grants and outside sources.

An original Vincenzo Coronelli globe gore was purchased to commemorate the 35th anniversary...



Vincenzo Coronelli, Map of Eastern North America, from Hudson Bay to the Gulf of Mexico (in Italian) from *Libro dei Globi* (Venice, ca. 1690). "The Mary Blakeley Memorial Map" in the Map Collection, Main Library, University of Arizona.

In March 1990, when the spring meeting of Western Association of Map Libraries was held in Tucson, the Map Collection staff served as host and program planners, and made local arrangements. One invited speaker was Dr. James Byrkit, Professor at Northern Arizona University. In his lecture/slide show, "Legend of the Sierra Azul: Central Arizona's Lost Apache Gold Mine," he showed a variety of maps from the late 1600s to late 1800s.

These maps, mainly by European cartographers, explorers, and settlers, trace the change in geographic knowledge of Central Arizona. His lecture was sponsored by the Arizona Humanities Council (AHC). Conditions of receiving the grant from the AHC were that the lecture be open to the public and that matching funds be provided in the form of organizing and publicizing the lecture.

Also in conjunction with the spring meeting of WAML, the Map Collection celebrated its 35th anniversary. An original Vincenzo Coronelli globe gore was purchased to commemorate the 35th anniversary and was dedicated to the first map librarian at the University of Arizona Library, Mary Blakeley. This globe gore, circa 1690, depicts what the European explorers at that time believed eastern North America looked like. Coronelli, in drawing his globe gores, used all available sources of geographic information including explorers' notes and earlier maps. In addition, Coronelli drew pictorial images on this globe gore of his perceptions of Native Americans. The purchase of the globe gore was partially subsidized; additional outside funding is currently being solicited from individuals and groups.

The Map Collection will host a travelling exhibit, "Maps and the Columbian Encounter, 13th to 17th Century," for the month of September 1991. The exhibit commemorates the 500th anniversary of the first voyage of Christopher Columbus and is an official Quincentenary Project. The voyage of Columbus in 1492 is viewed by many historians as the beginning of the modern world. The maps in this exhibit show the

National and international access to the collection will be provided through the OCLC and RILIN databases.

transition from medieval to modern cartography, trace the changes in geographical knowledge, show expressions of religious beliefs, and depict conflicts between European and Native American cultures. In order to fund the exhibit, the Library has applied for grants through the AHC and the University's Quincentenary Small Grants Program. The AHC will assist with the cost of renting the exhibit. The library will match this grant by providing one or more public programs that include humanities scholars. This exhibit has drawn the attention of the University's Quincentenary Planning Committee and is being considered as a kickoff event for the University's two-year celebration of the Columbus Quincentenary Program.

Last fall, Charlene Baldwin, Head of the Map Collection; Miriam Nickerson, the Library's Development Officer; and Chris

Kollen, Map Cataloger, wrote a proposal for a Department of Education Title II-C grant. The project will provide bibliographic control of the Latin American collection. National and international access to the collection will be provided through the OCLC and RILIN databases. The progress, results and summary of the project will be contributed to scholarly journals and presented at professional conferences. Final products as a result of this grant may include an informational brochure summarizing the scope, content and access to the Latin American collection to be distributed to other research libraries, Latin American and Hispanic collections, and individuals on request. Recently, the Map Collection was informed that the project has been funded for \$70,803 and is scheduled to run from 1 January to 31 December 1991.

## Teaching Maps: A View From the North of England

Chris Perkins

Map librarians ought to be more active in the promotion of the use of their collections. A very effective form of promotion is *map teaching*: formal or informal courses and talks about maps, mapping, and map libraries. This brief note introduces my experiences in the University of Manchester map collection.

We need to enthuse and educate in order to improve the level of cartographic awareness amongst our customers. In Britain for the last ten years university collections have fought rear-guard actions against resource cutbacks. In such an atmosphere an active and supportive map-using community can help prevent cutbacks; a teaching map librarian enhances the status of the resource and demonstrates its worth to funding agencies. In Manchester over the last five years I have been involved in a wide variety of teaching and map related discussion, which has I hope benefited the library. Some teaching has been vocational, aimed at day release planning technicians. Other courses have been offered in the University. This has included mainstream geography undergraduate units, such as an extended course

on maps as source material for geographic research, in addition to less extensive and tailored introductions for specific subject areas. Of wider interest have been evening classes offered through extramural programs to the general public. Here my emphasis has been practical and task based courses have been either day schools or evening classes, on a particular theme. There are also the rather more informal slide shows to local societies. All this teaching is with the intention of enthusing people about maps—if possible they have been tied in to other media such as exhibitions, events, or current news stories. Plans for the forthcoming year include an historical course to catch the forthcoming Granada TV documentary on the history of cartography and a course focusing upon contemporary map production to tie in with the bicentennial celebrations of the Ordnance Survey.

Preparing courses on mapping can be time consuming, but is fun. We all need to do it. If you do, I am sure you will find it as rewarding as I have. It does not pay well but the people want to know and we need to tell them!

...a teaching map librarian enhances the status of the resource and demonstrates its worth to funding agencies.

# Clark University

Beverly J. Presley

The Clark Map Library opened in 1921 as an integral element of the newly established Graduate School of Geography. The use of maps figured prominently in the program of study which was initiated by Wallace W. Atwood. Although the first full-time librarian would not be hired to oversee the collection for half a century, the collection grew steadily under the guidance of the faculty cartographer, Guy H. Burnham. The library was dedicated to Mr. Burnham in 1971, on the occasion of the 50th anniversary of the Graduate School of Geography.

Since its inception, the collection was intended to be a "working" rather than an antiquarian collection, consisting primarily of 20th century materials. An active collection was necessary for the training of the numerous American and foreign geographers who have received their educations at the Graduate School of Geography; Clark has awarded more Ph. D.'s in geography than any other institution in the United States. The map library has benefited from this corps of graduates and faculty who, having undertaken research throughout the world, have subsequently donated materials to the collection.

Within the University, the map library serves as a resource for a wide spectrum of users. It provides instructional and research materials for geography and for other departments and programs such as International Development, CENED (The Center for Technology and Economic Development), ETS (Environment, Technology and Society), Peace Studies, history, government, economics, and foreign languages, as well as less traditional users such as English and art. In addition to the graphic arts students who use the collection on a regular basis, the Visual and Performing Arts Department recently developed from the collection a traveling exhibit of maps as examples of design.

The map library also provides service to a diverse array of patrons outside the University. As the largest, readily available collection in central New England, its outreach extends to scholars from other institutions (some with extensive collections of their

own), as well as to students and teachers from primary and secondary schools. Additional users include members of the business and industrial communities, cultural institutions, government agencies, local historians and genealogical researchers. Interest in the outdoors prompts inquiries from patrons ranging from environmentalists to developers.

Since the arrival of a full-time professional librarian, a number of programs and cooperative efforts have been undertaken to improve service and to increase the visibility of the map library. Map cataloging using OCLC began in 1988. Because Clark belongs to a regional library network, records for cataloged items are now available on-line to academic, public, and special libraries in the area, in addition to the participating institutions of OCLC.

Ten years ago, *Geophile* was inaugurated to promote interest in both cartographic materials and the map library. This selected acquisition list, published 2-3 times yearly, is distributed nationally. Although *Geophile* did not appear in the academic year 1989-90, it is scheduled to resume publication in 1990-91.

Exhibits are an effective way of bringing maps to the public's attention. Monthly, during the academic year, displays of cartographic materials illustrating topics of current interest are mounted in a high traffic area in the Geography Building. During February 1991, the map library will host the American Geographical Society's facsimile exhibit, *The Columbian Encounter*. A series of public lectures by scholars of various disciplines, as well as a concert of period music, is being planned to explore the significance of the voyages of Columbus to both Europeans and Native Americans.

In an environment dominated by large academic libraries, smaller institutions, nevertheless, have contributions to make. The Guy H. Burnham Map and Aerial Photograph Library of Clark University has a global collection of considerable depth and a seventy-year record of serving a broad clientele. The constant stream of inquiries which it receives is testimony to its accessibility and responsiveness.

...intended to be a "working" rather than an antiquarian collection, consisting primarily of 20th century materials.

Map cataloging using OCLC began in 1988...items are now available on-line to academic, public, and special libraries in the area...

# University of Minnesota

Brent Allison

**I**t doesn't hurt to have John Borchert in your midst. The ceremony to name the University of Minnesota Map Library in honor of such an august geographer attracted nearly four hundred faculty, library staff, and friends. With the University President, the Dean of the College of Liberal Arts, the University Librarian, and the President of the Association of American Geographers offering testimonials, the visibility of the event, and hence of the map library, was ensured.

In addition, we reprinted a 1909 Twin Cities street car map for the occasion; the

original was given to Dr. Borchert. Not only was the map distributed at the dedication, but an advertisement was placed in the alumni magazine offering a copy of this full-color map as a premium for donations to our "Friends of the Map Library" Fund. The advertisement appeared in the November/December issue, in time for holiday gift giving, and the response was overwhelming. It brought in \$2,500, enabling us to purchase needed software and other equipment. We are planning another map reprint, with an advertising campaign, again this year.

...the visibility of the event, and hence of the map library, was ensured.

## The OPAC Highway: An On-Ramp for Map Collections University of Texas: Dennis Trombatore

**T**he era of isolation is over for special format collections. The first day the on-line catalog and the automated circulation system appear in an academic library system is the last day that once remote collections can blame lack of broad based support on isolation, provided they make the effort to participate, to set performance goals, and to seek wider audiences.

For users, the on-line catalog is like an interstate highway: Once on it, there is no reason to get off until they reach their destinations. For branch and special format collections that have languished in obscurity, away from access to central records, equity is now within reach. Staff at remote sites are now capable of providing assistance, and collections that have been the private preserve of the cognoscenti are suddenly accessible to one and all.

The on-line catalog screen is like a free billboard. Now all system users can find where you are and what you offer. If potential customers see your "products" on the screen, and can tell that what they want is "in stock," and that you "take plastic," they will find your collection. Make no mistake about it. First, however, collections must be included systematically in database development.

In the new post-OPAC era of high visibility and tight budgets, map collection managers must be able to demonstrate a broad base of user support for their collections of "actual" maps. Before the promising new technology for geographical information systems can deliver the hoped for revolution in on-screen map availability and utility, relatively large capital investments will be needed. More staff and greater expertise will be essential to take full advantage of this rapidly developing field.

Nevertheless, library administrators must be cautious about committing significant sums of money in the absence of evidence that the investment will be balanced by use. With distributed processing systems, automated circulation, and OPACs, every collection that remains an isolated preserve has made a decision not to participate, and cannot expect to have access to scarce equipment funds for expensive items like GIS systems.

Map collections take up an inordinate amount of floor space. Maps are awkward, highly specific, and present literacy problems to the non-specialist. Although most maps in a working collection are not expensive by information cost standards,

The on-line catalog screen is like a free billboard: Now all system users can find where you are and what you offer.

Before the promising new GIS technology can deliver the hoped for revolution in on-screen map availability and utility, relatively large capital investments will be needed in map collections.

the total cost of maintaining any map collection is high. A glance at the current literature on performance measures will demonstrate that the race to justify expenditures is on, and the checkered flag can only go to those collections that participate.

Maps are available in several facilities at the University of Texas at Austin. The two primary working map collections are in the Perry Castaneda Library (PCL) and in the Walter Geology Library. For several years, both PCL maps and Geology have been including map materials in UTCAT, the on-line library catalog.

In the Geology Library, the Tobin International Map Collection contains more than 42,000 maps primarily on geological topics and Texas topographic maps. Because the Tobin collection contains many USGS depository map series, and has neither been classified nor cataloged except for a local card file, we made the decision to begin by entering brief author/title records for all USGS series maps in UTCAT, using a local call number. This seemed wise because we could use in-house staff to create circulation records as the basis for later enhancements by tagging on OCLC, overlaying the brief records with full catalog records.

The PCL collection is also adding their materials to UTCAT, including vertical file materials, and use figures have gone up abruptly, largely due to the success of keyword searching on UTCAT. While general maps will always be more widely used than geology maps, we intend to make sure that the Tobin International Map Collection meets the same use standards as the monographs and serials in the Walter Geology Library.

In the meantime, thousands of brief records for USGS maps are available to everyone who uses UTCAT, either in a General Libraries unit or through the UT computation center's dial-up ports. This is an extremely valuable "billboard," since two large earth science research groups are located eight miles from the main campus. Inseparable from our desire for local control was our desire to accomplish two other in-house goals: 1) to set the circulation counters quickly for map materials (enabling us to establish an activity baseline for later performance studies), and 2) to streamline the circulation of maps.

It has been more than five years since the Geology Library instituted automated circulation, and now that most manual charge card transactions are a relic of the past, users are unwilling to tolerate the procedure. Staff also, especially student workers, now have difficulty recalling the routine. We had to establish a more compatible circulation procedure, for which UTCAT records and bar codes are perfectly designed.

This year we began OCLC cataloging and LC classifying of our flat maps, beginning with U. S. states. Now that we have OCLC dial-up on a personal computer, we again have local control over the process, and we can continue the enhanced tagging and coding process with available staff. Fortunately, we had a part-time volunteer cataloger in this phase of the project to help set precedents and procedures. One other change we plan to make as we move through the collection is to use a normal loan period for map materials. This will reiterate to our users that we want them to **actually use** the information available in our collection, without artificial restrictions.

As map collection managers we must consider whether it is our own bias against troublesome formats that puts potential users at a disadvantage. If cataloging departments do not want maps because of their strangeness and bulk, if stacks supervisors want them in another part of the building because of the weight and shelving problems, if no one wants to be responsible for the tedious processing requirements, if those who **do** prefer not to deal with the general user, if reference staff consider users who habitually want eccentric materials to be eccentrics, if interlibrary loan staff are uncomfortable with mailing tubes, then maybe low use and isolation are not **map** problems at all.

With "interstate" access through the on-line catalog and easy circulation procedures, we want geology maps to be irresistible. We also hope to demonstrate and enhance the collection's utility, to improve our purchasing and collection development decisions, and to lobby for increased staff and equipment support. At the very least, we will find out how much user interest we can create, and we will know that we did our best to market the collection.

...we want them to actually use the information available in our collection, without artificial restrictions.

# Too Many Map Users: Marketing Can Help

Philip Hoehn

Not all cartographic information centers have a need to attract new users. On the contrary, some already have too many clients with demands that exceed the capacity of the staff, collections, and facilities. In part, these map collections may be the victims of their own successful marketing schemes, including one of the most powerful advertising tools: the public on-line catalog, which can bring information about a map collection's holdings into the homes and offices of a multiplicity of potential users. Map collections in publicly supported research university libraries, particularly those in large urban areas, seem to be most prone to the problem of excessive use. In some instances, marketing techniques might be used effectively to continue or even increase the awareness of services by on-campus (primary) clientele, while diverting off-campus users to their "home" public or academic libraries whenever that is appropriate.

Throughout the 1970s and 1980s not only did the number of users in these institutions increase, but cartographic information became much more diverse and complex. During this period many map collections acquired their first microform and digital products, saw mushrooming of their remote sensing holdings, and gained the ability to access catalog records in on-line local and national databases. These developments required more user training, classroom teaching, individual assistance, and in some cases an enhanced sensitivity to the needs of an increasingly multi-cultural clientele. The need to create machine readable catalog records became a considerable expense, and for institutions which did not catalog maps previously represented a significant additional workload. At the same time that the need for staffing increased, budgets generally remained flat and in some instances actually decreased.

As a result, a number of map libraries found it increasingly difficult to meet the needs of their own faculty and students, let alone users from other academic institutions, government agencies, private companies, and environmental investiga-

tors, home buyers, lending institutions, and members of the general public.

Map curators who find themselves in this dilemma must seriously examine the problem and its possible solutions: to identify what services can be provided and to whom, and to weigh the prospects of obtaining additional funding.

It was just such problems, that are not limited exclusively to the map collection, which prompted the University of California at Berkeley to hold a conference in January 1989. "Target '95," as the staff gathering was called, identified, proposed solutions, and set up a mechanism to resolve major problems. The conference's operating assumption was that any changes in programs or services needed by the year 1995 would come primarily from eliminating or curtailing existing ones.

A major finding was the Library's inability to provide a satisfactory level of service to its primary clientele, in part because too much time and effort was going into serving off-campus users. Since the state of California provides funding to the Library to collect materials and provide information services to its primary clientele, any services to outside users comes at the expense of on-campus users. It was recommended that primary clientele be more precisely defined, that services for them be enhanced, and that those for secondary clientele be curtailed where feasible.

Building on the conference recommendations, the UC Berkeley Map Room is developing a two-pronged marketing program. The first is aimed at off-campus users. In what might be described as "negative marketing," off-campus users will be advised they are more than welcome to use the Berkeley collection, but only after having exhausted the resources of their own public or academic library, preferably with the help of a map or reference librarian.

The second approach will be enhancing the presently insufficient attempts to advertise our collections and services to our primary clientele. If some outside users can

Map collections in publicly supported research university libraries, particularly those in large urban areas, seem to be most prone to the problem of excessive use.

The conference's operating assumption was that any changes in programs or services needed by the year 1995 would come primarily from eliminating or curtailing existing ones.

If some outside users can be channeled to other institutions, staff time should be freed to focus on improving and publicizing services for primary users.

Developing a directory of Bay Area map repositories which could be distributed to many libraries and possibly to patrons is being considered.

be channeled to other institutions, staff time should be freed to focus on improving and publicizing services for primary users. Among the marketing devices employed will be such time-tested ones as exhibits, new acquisition lists, announcements of new services and equipment, more bibliographic guides and leaflets, orientation tours, talks to classes, and perhaps workshops and after-work social events aimed at particular client groups.

To be more specific, the Map Room is considering or has implemented the following policies and marketing activities:

1. Giving priority reference assistance to primary clientele during busy periods, and allowing primary clientele to have preferential use of microform, computer and other equipment. Signs have been posted advising clients: "During busy periods priority for reference service and equipment use will be given to UCB faculty, students and staff. You may be asked to show a campus ID."

2. Some services, such as interlibrary borrowing of materials from other libraries, have been restricted to primary clientele; outside users are directed to their "home" public or academic library's interlibrary borrowing service. The Map Room's orientation leaflet spells this out.

3. A number of outside clients come to UCB's Map Room to consult material which is readily available in local public and other academic libraries, *e.g.*, current topographic quadrangles of California, forest service maps, and general world atlases. For non-primary clientele, UC Berkeley should be viewed as a library of last resort, one which is happy to provide assistance to outside users when they have exhausted the resources of their home institutions. To this end, the Library is considering requiring outside users to be referred from their public or academic libraries, perhaps by use of referral forms. Having reference questions funneled through the Bay Area Library Information Network rather than having them come to UC Berkeley directly is also being consid-

ered. This new policy would have to be widely advertised to outside users by the Map Room and by local public libraries.

4. The most effective and constructive diversionary scheme, but one which will require a substantial initial investment of Map Room staff time, is to work more closely with public and other libraries. The aim is to help them develop stronger and more widely publicized map collections, preferably with on-line catalog records, in order to attract and serve larger numbers of their own clientele. Some ideas along this line include workshops for local libraries which would provide them with information on Berkeley's holdings and suggestions for what we believe each should hold (for example, copies of fire insurance maps and strong collections of historic maps for their own communities, and current topographic and geologic maps of the Bay Area). Discussing ways that UC Berkeley and these map collections could work more closely together would be a primary topic. Developing a directory of Bay Area map repositories which could be distributed to many libraries and possibly to patrons is being considered. A spin-off on this would be a poster or display, possibly suitable for multi-type library use, that would advertise the many existing map collections in the area with some indication of the collections and services provided by each.

The Map Room has also been trying for several years to make all its users more self-reliant by providing them with instructional leaflets and guides. Three of the most helpful have been: "How to Find Maps in Books and Periodicals," "Retail Sources for Maps," and "Sanborn and Other Fire Insurance Maps." Some of these, and additional ones to be developed, might be turned into leaflets for use by several libraries.

While it is too early to measure the effectiveness of these new marketing strategies, they should be effective since they employ some techniques used in map libraries previously.



A high-ranking historical document · A sumptuous work of art · A splendid collector's item

# Portolan Maps and World Atlas of Antonio Millo

The masterpiece of Venetian cartography from 1586  
now as facsimile limited to 800 copies.

Authorized reproduction of 2° Ms Ham. 446  
Staatsbibliothek Preußischer Kulturbesitz Berlin

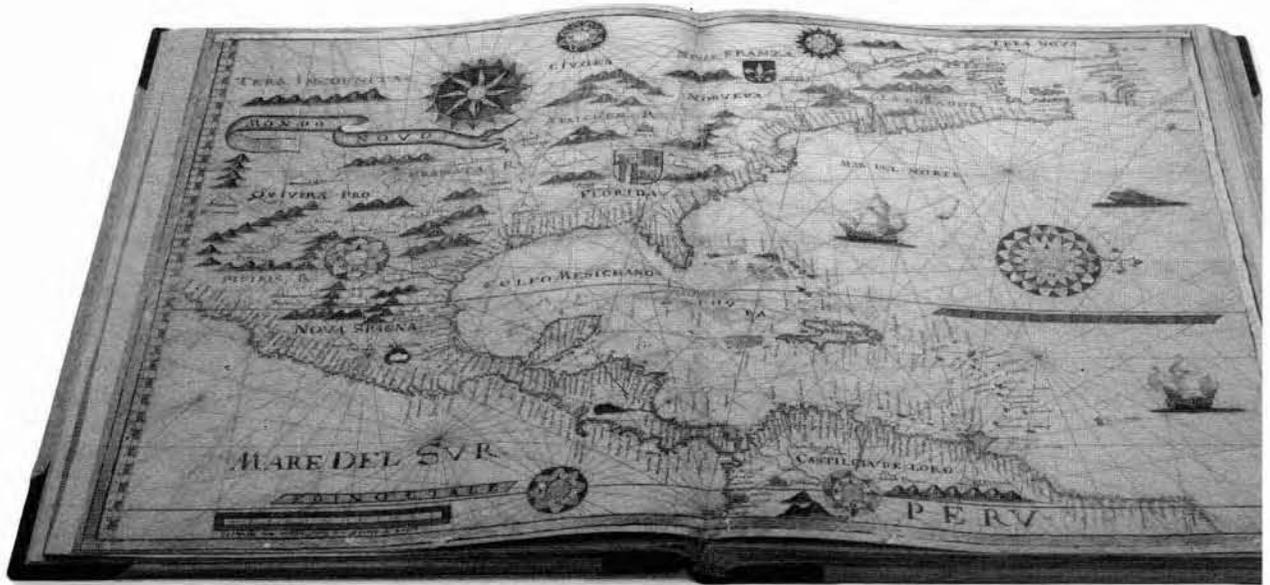
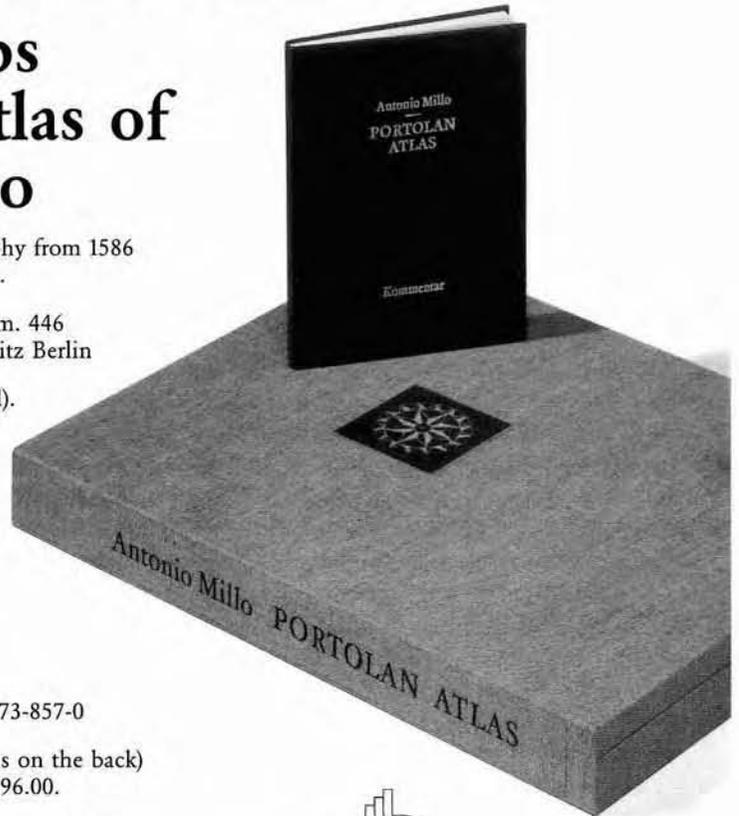
Large format: ca. 74,4x49 cm (opened).  
Gold and silver paintings on the  
14 double-page maps reproduced  
by a unique foil transfer method.  
Separate commentary volume  
in English.

**Luxury edition:**  
Halfleather binding \$ 1850.00.  
ISBN 0-89573-856-2

**Collector's edition:**  
Cloth binding. \$ 1498.00. ISBN 0-89573-857-0

All maps (without text and illustrations on the back)  
are available separately at a price of \$ 96.00.

Detailed information is available on request from:



# Exhibit Reviews

## *Portugal-Brazil: The Age of Atlantic Discoveries*

It was an age of wonder and daring, in which unknown seas were traversed and continents discovered and explored. It was an age of introspection, as the existing social and political orders began to find themselves challenged by new peoples and philosophies. It was, in effect, the Age of Discoveries.

On the five hundredth anniversary of that epoch, the Brazilian Cultural Foundation organized an exhibit entitled "Portugal-Brazil: The Age of Atlantic Discoveries," which ended display at The New York Public Library 1 September 1990. Through a wonderful sampling of charts, maps, treaties, manuscripts, books, illustrations and artifacts on loan from nearly fifty institutions worldwide, the Portuguese exploration of the circum-Atlantic world was presented as an example of the process of European expansion. In our modern, cost-effective practice of placing function above form in most aspects of our lives, it was a delight to look back upon a time when art and science worked together to create some of the treasures exhibited.

Cartophiles could follow the excitement that was felt by mariners and land-bound Europeans at the time. The first item in the exhibit was a 1325 portolan chart by Perrinus Vesconte in which the limits of European geographic knowledge are evident. A 1477 Bologna edition of Ptolemy's *Geographia* presented another depiction of the world as it was assumed to be until the voyages of discovery proved otherwise.<sup>1</sup> Later maps and charts in the exhibit reflected the new discoveries. The Canary Islands are included in a 1478 edition of Ptolemy. A map of Africa and the Atlantic by Pedro Reinell (ca. 1485) includes part of the newly-explored African coast plotted on the inland portion of the continent, which may have been an early attempt to prevent the map from becoming immediately obsolete. Details of the African coast were extended farther in a world map by Henricus Martellus (ca. 1489), drawn upon the completion of the

Bartolomeu Dias voyage that proved the Atlantic and Indian Oceans were connected. Africa beyond the area covered by Dias continued to reflect the Ptolemaic model. The New World (and Brazil in particular) gradually crept into view in Atlantic and world maps. Illustrations of Brazilian life were added to the inland portions of some maps, as in a 1565 map of Brazil and the South Atlantic by Sebastiao Lopes. The New World was finally presented as a whole (if not quite accurately) in works such as Abraham Ortelius's *Theatrum Orbis Terrarum* (1570).

The four sections of the exhibit were not arranged so that one could follow systematically the growth of geographic knowledge. Interspersed with the maps, but of no less interest, were documents relating to the discoveries. A highlight in this category was the 1494 Treaty of Tordesillas—the first attempt to define spheres of influence on a world level with its establishment of the line drawn along a meridian 370 leagues west of the Cape Verde Islands that assured Portugal control of the Atlantic and future control of Brazil. On a more mundane level is the 1501 letter from King Manuel I establishing a pension for the widow and descendants of the discoverer Bartolomeu Dias.

The exhibition looked also at the material foundation for these voyages, the interaction between the Portuguese and the indigenous peoples of Brazil and Africa, and the literary and cultural impact of Portuguese exploration. Works by writers like More, de Montaigne and Defoe were inspired by the discoveries and raised doubts about European political and social systems. Native Brazilian artwork began to incorporate Christian iconography. The Portuguese language spread so effectively that today it has more than 170 million native speakers, more than the number who speak Italian, German or French.

The exhibition's catalog is published jointly by Bertrand Editora (Lisbon), Franco Maria Ricci (Milan) and the

The Portuguese exploration of the circum-Atlantic world was presented as an example of the process of European expansion.

Cartophiles could follow the excitement that was felt by mariners and land-bound Europeans at the time.

The New World (and Brazil in particular) gradually crept into view in Atlantic and world maps.

A sumptuous volume with many excellent color reproductions on glossy pages...

Brazilian Cultural Foundation (New York). A sumptuous volume with many excellent color reproductions on glossy pages, every item in the exhibit is reproduced. Several maps that do not appear in the exhibit itself are included along with essays written specially for the catalog. The text has some mislabelling of illustrations and minor misspellings; the physical dimensions of the maps are not provided; and, at a cost of \$85.00, the paper binding may appear

inadequate. However, it is a satisfying, lasting record of an important exhibit.

#### NOTES

1. This edition of Ptolemy, incidentally, was the first printed edition to include maps.

**Michael Dulka**  
Map Librarian  
Dag Hammarskjold Library  
United Nations  
New York, New York

## *Charting the Chesapeake 1590–1990*

Opened on 11 August 1990 in the Calvert Marine Museum, Solomons, Maryland, this exhibit includes original maps and charts, equipment, and artifacts as well as reproductions of some maps and charts. A joint project of the Calvert Marine Museum, the Maryland State Archives, and the Huntingfield Corporation, the project was made possible with funds from the Maryland Humanities Council, Inc., through a grant from the National Endowment for the Humanities. Contributions were made by the National Ocean Service, National Oceanic and Atmospheric Administration, Intergraph Corporation, the Maryland Historical Society, and Zahniser's, Inc.

The exhibit is arranged topically, rather than chronologically. For example, "Charts and Marylanders" illustrate the important role in the state's history played by nautical charts. A section on "Chartmaking" shows not only past and present surveying methods but also chartmaking methods from copperplates to computers. A number of individuals who played prominent roles in charting are profiled in the section "Cartographers of the Chesapeake."

The core of the exhibit is formed by nautical charts from the Huntingfield Collection of the Maryland State Archives. Among these are the first map to name the Chesapeake Bay, the 1590 map by John White who was an artist and member of the 1585 Roanoke expedition, and a 1986 National Ocean Service experimental chart. John Thornton's 1689 chart, the earliest chart of the bay accurate enough to be used by navigators is present, as is a 1776 chart by St. Mary's County pilot Anthony Smith,

used by both British and American naval forces during the Revolutionary War and the War of 1812.

Accompanied by a volume entitled, *Charting the Chesapeake* (Morrison and Hanson 1990), this history of the charting of Chesapeake Bay grew from a 1988 idea of Russell Morrison and Owen Henderson, then owners of the Huntingfield Collection of maps and charts.

The 122-page history is liberally sprinkled with 75 color and black and white reproductions of maps and documents. It also has a four-page glossary of terms, a four-page chronology of significant events relating to the Bay and the mapping of it, a 14-page listing of U.S. Coast Survey and its successor agencies' charts of the Bay, a ten-page descriptive listing of the illustrations, and a three-page listing of works cited. There is a table of contents, but no index. The large print and the 21.5-by-28.0 cm format make for easy reading.

The exhibit will be at the Calvert Marine Museum in Solomons, Maryland until April 1991. If you have the time it is well worth the trip.

#### LITERATURE CITED

Morrison, Russell and Hanson, Robert.  
1990. *Charting the Chesapeake*.  
Designed and edited by Edward C.  
Papenfuss and Ann Hofstra Grogg.  
Annapolis, Maryland: Maryland State  
Archives. \$25.00.

**Alberta Auringer Wood**  
Map Librarian  
Memorial University of Newfoundland  
Saint John's, Newfoundland, Canada

...a section on "Chartmaking" shows not only past and present surveying methods but also chartmaking methods from copperplates to computers.

The core of the exhibit is formed by nautical charts from the Huntingfield collection of the Maryland State Archives.

## Book Reviews

### *Atlas of Columbus and the Great Discoveries: Celebrating the 500th Anniversary of the Discovery of America*

By Kenneth Nebenzahl.  
Chicago, New York, and San Francisco:  
Rand McNally, 1990. viii, 168 pp.  
ISBN 0-528-83407-X. \$75.00.

The Columbus celebration has already given us some good books. This is certainly one of them. At first impression the *Atlas of Columbus* seems like another pretty coffee-table map book, for there are fifty full or double page reproductions of maps, and at least twice that number of other illustrations. It looks a little like an exhibit catalog. The public appeal is evident, since the Book of the Month Club will be offering the *Atlas of Columbus* to its membership. In contrast to that first impression, reading the text in conjunction with the maps results in a different view. The scholar can indeed profit from the book, and not only as a reference source. The text contains much solid information about the maps, the mapmakers and their techniques, and the purposes of the maps. It is more unified than it appears to be on the surface, and the commentaries build on and supplement each other. Almost any reader could learn a lot from the book.

Part One, "The Cartographic Tradition Inherited by Columbus," focuses on the three kinds of maps Columbus would have used and studied—traditional maps, particularly the 1474 Ptolemy map; the *mappae mundi*, with their background in religious beliefs, and the charts made by mariners based on their voyages. Columbus selected from these sources those elements that supported his own theories about sailing westward. One example of a superb melding of text and map is the section showing the 1482 Ptolemy map of "Hispania" as edited by Donnus Nicolaus Germanus, together with Nebenzahl's text on the life of Columbus. The reader follows the beautifully complementary text with the early map. Part Two has maps showing the Columbus discoveries first as extensions of

Asia and later as the New World. The sources are fragmentary. In the matter of the landfall on the first voyage, for example, Nebenzahl concludes it is "unlikely that a unanimous choice will ever be reached." Part Three, titled "Filling in the Features of the Earth," shows the deeper understanding of the geography of the earth as revealed by later explorations; Part Four, "Europe's Colonial Era Begins," changes the emphasis to the colonies of the European countries. The focus has shifted to empire rather than discovery; the first map is the Mercator world map of 1569; the end of the chapter is Wright's world map on the Mercator projection used by Hakluyt in 1598.

The book is recommended for the layman and the scholar. There are some criticisms, naturally, beginning with the color of the reproductions of some of the maps. In general the reproductions are good, but in several instances (La Cosa, the Cantino map, the Martellus, etc.), the maps are too yellow. This is distracting. Perhaps this is a problem with reproductions, but it may also be simply that people expect old maps to be yellow, and therefore a yellow color is fostered in the printing process. It is hard to persuade the general public—even on a sophisticated level—that old maps are not yellow maps. Since the publisher must have the best map reproducing facilities available, the problem may have been related to the paper—whatever the reason, the color is not always good. Some readers may quarrel with the choice of the area selected for reproduction, or for enlargement. For example, when the text is talking about the Behaim globe the reader would love to turn it to show the Atlantic and its islands instead of Africa and Asia. In the wonderful "Christopher Columbus chart" there is a fine reproduction of the circular map set in the chart, but as this is illegible on the big chart a larger reproduction of the center of the circular map would have helped.

The text contains much solid information on the maps, the mapmakers and their techniques, and the purposes of the maps.

The book is recommended for the layman and the scholar.

Ken Nebenzahl has shared some of his knowledge about early maps with the public through this book.

This is nitpicking, of course. The book is highly recommended. We who are librarians know about the store of knowledge that is involved in buying and selling books and maps. It is wonderful that Ken Nebenzahl has shared some of his knowledge about early maps with the public through this

book. We have respected him as a map dealer for decades; we congratulate him as an author also.

Carol Urness  
James Ford Bell Library  
University of Minnesota  
Minneapolis, Minnesota

## China's Natural Conservation Atlas (Zhongguo Ziran Baohu Dituji)

Beijing: Science Press, 1989. viii and 244 pages, maps, tables, diagrams.  
ISBN: 7-03-001492-8 p.285. 180.00 Yuan.

This atlas was prepared as the companion volume to the *Outline of China's Natural Conservation (Zhongguo Ziran Baohu Gangyao)*, published in 1987. These two volumes were created in response to the United Nations Declaration on Humans and the Environment as an effort to demonstrate the Chinese government's awareness of environmental problems. According to the preface, the atlas serves to "indicate achievements, but also to highlight mistakes and their consequences" (i).

The authors' objectives in producing the atlas are to make officials aware of the condition of the natural environment as a basis for future policy making and also to publicize awareness of natural resource conservation and promote the people's love and protection of the natural environment (iii). This second objective seems implausible, for the price of the atlas, approximately equal to two months of the average Chinese salary, makes it unlikely that many in the general public will ever see the atlas.

The atlas is divided into three sections of maps and is followed by a lengthy text section. Section One is an introduction to the major cultural features of China. It consists of a set of ten small-scale (1:25,000,000 to 1:12,000,000) maps showing political boundaries, population distributions, natural and historical sites, energy production and consumption, and environmental management and research sites. Of these ten maps, only the environmental management and research site maps are unique to this atlas.

Section Two consists of over 100 maps

which focus on elements of the physical environment, such as climate, landforms, land uses, and economically valuable, rare, and endangered species. Several of the maps found in Section Two are quite unique and remarkable. Most noteworthy among these are a carefully illustrated map of deserts and desertification; an assortment of endangered species maps displaying historical and contemporary distribution patterns; and remarkably detailed maps of forest cover and afforestation projects. Most of the maps are small-scale and symbolize a phenomenon over the entire country, although a few are larger-scale and focus on a regional theme. Many maps are accompanied by descriptive diagrams and color photographs.

The final map section contains large-scale maps of selected regional natural protection areas in addition to several maps and diagrams which define and describe the ecosystems found in China. Examples range from maps and cross-sections of habitats for particular species of birds, mammals and reptiles, to portrayals of broad vegetation types, such as the map of tropical monsoonal forest or the Landsat orthophotoquad and 3-dimensional model of an alpine region. Many of the species referred to in the maps and diagrams are described with photographs and illustrations.

The text section which follows the map section is the most unique feature of this atlas. 90 pages are devoted to a thorough explanation of every map in the atlas. Much of the information presented in this section is not ordinarily available to a map user. For each map, the authors identify sources of data, methods of data collection, techniques used to classify and categorize data, along with other background informa-

...to make officials aware of the condition of the natural environment as a basis for future policy making

...only the environmental management and research site maps are unique to this atlas.

90 pages are devoted to a thorough explanation of every map in the atlas.

...an outstanding example of the superb quality of cartographic products being produced in China today...

tion. There are many potential barriers to effective communication between cartographers and map users; by explaining many of the procedures used to produce these maps, the authors of this atlas have succeeded in avoiding many of these.

This atlas is an outstanding example of the superb quality of cartographic products being produced in China today, although it does have minor weaknesses. Most notable is the misleading use of area symbols on a few of the maps. Any variation in the area of a symbol should be proportional to the variation in the data it symbolizes; on a few of the maps, such as the urban population map and the forest and timber volume map, this relationship is clearly disproportionate. Also, symbols used to denote the location of a rare species should be consistent from

map to map; this is not always the case. The inclusion of locator maps would make the regional maps in Section Three much easier to identify. Aside from these minor complaints, there is little to detract from the general attractiveness of the atlas. Even those unfamiliar with Chinese characters would find this atlas easy to use.

Much of the information found in this atlas would be difficult or impossible to find elsewhere. *China's Natural Conservation Atlas* should prove to be a comprehensive and useful reference for anyone interested in China's physical environment.

**Alan H. Moore and Fan Jian**  
Department of Geography  
University of Kansas  
Lawrence, Kansas

## Envisioning Information

By Edward R. Tufte  
Cheshire, Conn.: Graphics Press, 1990.  
126 pages.  
ISBN: 0-9613921-1-8. \$48.00.

Even though not dealing exclusively with maps, this "metacartographical" work is important to the world of maps. It is the second of Dr. Tufte's works (there is a third in process) dealing with graphic data of all sorts. The first volume, *The Visual Display of Quantitative Information* (Tufte 1983), dealt with graphic excellence, graphic integrity, and how to achieve them. This volume is concerned with "escaping flatland," how multidimensional data can be presented. "Flatland" is both the surface of paper and a computer screen.

As a physical object, this book is impressive. Generally, each page has a large right margin into which are fitted notes (side notes?) and illustrations. The illustrations are good, many having been reproduced with color separation film provided by the original publisher. While sometimes the text may continue on to other pages, generally each double page spread is a unit of information. The illustrations rarely have captions, the text on the pages describing and elaborating upon the illustration. The effect is to give a sense

of "hypertext" to the page.

But this is not just a pretty book. Tufte examines the techniques used to allow a flat static object to give the impression of depth and dynamic movement. Maps, if not exactly central, are at least very important in this discussion. Eduard Imhof is heavily quoted. The discussion is arranged into chapters: "Escaping Flatland," "Micro/Macro Readings," "Layering and Separation," "Small Multiples," "Color and Information," and "Narratives of Space and Time." Aside from maps, which obviously fit into the chapter themes, visual displays ranging from timetables to dance notation are examined with examples of both good and bad. Tufte uses the word "chartjunk" for bad visual displays, usually typified by little or no content gaudily presented. While some "bad" maps are shown, cartography generally comes off with fair marks for design. Examples of Japanese design are often used to illustrate innovative techniques in other graphic forms. This is an exciting book both visually and conceptually.

The index is adequate in that everyone checked in a spot check who was cited in the side notes or in the text was listed, but there was no entry for "cartography" or "maps." The entry "ocean chart" noted

This volume is concerned with "escaping flatland," how multidimensional data can be presented.

...visual displays ranging from timetables to dance notation are examined with examples of both good and bad...

...conspicuous by its absence is any mention of the evolution of Richard Saul Wurman's graphic style or of his Access Guides...

...map librarians should be familiar with this book...

only page 91, yet there was also a reproduction on page 94. "Aerial photography" cites only page 109, yet pages 17 and 38 also have examples—though page 17 is a stereogram and is picked up under that term. The index must be used with caution, but it can be used.

It is always dangerous to talk about omissions when one knows another volume is in the works, but it must be noted that conspicuous by its absence is any mention of the evolution of Richard Saul Wurman's graphic style or of his Access Guides.<sup>1</sup> One can agree or disagree with Wurman's approach, but he should not be ignored.

A very minor cavil is the lettering on the spine. It is bland and does not begin to even hint at the excitement found between the covers.

Excitement? Yes, this is an exciting book, both visually and textually. It speaks to designers (and users) of maps as much to

the designers of other graphics. If a map collection directly supports a cartographic production unit, this is an essential purchase. If this is not the case, as long as there is a copy (or copies) elsewhere in the organization, map librarians should be familiar with this book, but need not have it in their collections.

#### LITERATURE CITED

Tufte, Edward R. 1983. *The Visual Display of Quantitative Information*. Cheshire, Conn.: Graphics Press.

#### NOTES

1. See for example *Hawaii Access, LA Access, London Access, San Francisco Access, or Rome Access*. New York: Access Press, 1987-.

J.B. Post  
Print and Picture Curator  
Free Library of Philadelphia  
Philadelphia, Pennsylvania

## A Cartobibliography of Separately Published U.S. Geological Survey Special Maps and River Surveys

By Peter L. Stark  
*Occasional Paper No. 12*  
Santa Cruz, Calif.: Western Association  
of Map Libraries, 1989. xxii, 336 pages.  
ISBN: 0-939112-15-9. \$40.00

As the vast majority of map librarians are quite aware, the U.S. Geological Survey has published a variety of topographic maps in both its standard-quadrangle format as well as in special non-quadrangle formats (*i.e.*, maps with rarely used scales, and/or covering an administrative area or geographic region). Libraries have been collecting U.S.G.S. maps throughout its long publishing history, but few have made an attempt to collect all of its maps in all their variant editions. The idea of compiling a cartobibliography of them all would seem to be quite a mind-boggling effort, if not impossible.

A cartobibliography of U.S.G.S. maps is becoming reality, however, by taking it on in large chunks, as it were. Riley Moffat achieved the first accomplishment by providing a cartobibliography for topographic quadrangles (Moffat 1985). Now

Peter Stark has done the same for non-quadrangle maps in *A Cartobibliography of Separately Published U.S. Geological Survey Special Maps and River Surveys*.

To provide us with this bibliography, Mr. Stark first gathered citations from lists of maps in several U.S.G.S. publications. He took the resulting list of citations to large map collections in California, as well as to the U.S.G.S. Earth Science Information Center's Menlo Park office, to correct, improve and add information to his citations. Lists of special maps for each state were then compiled and sent to the people responsible for large map collections in their respective states for review. New information provided by reviewing institutions was then incorporated into the final revision. Mr. Stark chose not to send state lists of river surveys to reviewing institutions, apparently satisfied that U.S.G.S. publications provided sufficient bibliographic control of them.

Stark's resulting publication is divided into two parts. Part One lists special maps compiled from 1882 to 1961 of North America, the U.S. as a whole, U.S. regions,

A cartobibliography of U.S.G.S. maps is becoming reality by taking it on in large chunks...

Mr. Stark has taken the seemingly overwhelming task of providing control to U.S.G.S. special maps and river surveys, and has provided us with an exhaustive listing...

followed by an alphabetical arrangement of maps of U.S. states and areas within them. Included in each citation are the title, scale, compilation date, publication and reprint date(s), contour interval, number of sheets, and descriptive notes. Citations for regional and large scale special maps also include geographic coordinates. Mr. Stark states he chose 1961 as the cutoff date for special maps so that the list would be compatible with the bibliography *Publications of the U.S. Geological Survey, 1879-1961*. He also felt that after 1961, the record on state topographic index maps of special map publishing becomes much clearer. The 1961 cutoff was not applied to shaded relief quadrangles since publication of these maps was technically closed in 1979. All shaded relief quadrangles published by U.S.G.S. are therefore listed in this publication.

Part Two lists all separately published river surveys, from 1909 to 1979, the year the last sheets of this series were published. The citations are arranged alphabetically by state and map name, and each includes a short title, survey/compilation date, printing and reprinting dates, scales, contour intervals, description of sheets, description of survey, and notes. A name index to special maps and shaded relief maps follows Part One, and a name index to river surveys follows Part Two.

Something not found in this cartobibliography are index maps for each state showing the location of special maps and river surveys. Given the confines of a book format and the large scale of many of the maps, providing index maps would probably prove impractical. A few map indexes to large series of special maps, such as the Los Angeles six-minute series, the Upper Peninsula of Michigan, and shaded

relief quadrangles of Alaska are provided.

This cartobibliography is quite an impressive work. Mr. Stark has taken the seemingly overwhelming task of providing control to U.S.G.S. special maps and river surveys, and has provided us with an exhaustive listing with which we can compare our holdings and which we can use to identify and obtain those sheets we lack. He has even included a section on where to find these maps (most are included on U.S.G.S. historic map microfilm).

The remaining chunks of U.S.G.S. maps for which cartobibliographies need to be compiled (*i.e.*, those which were excluded in Mr. Stark's work) are U.S. Geological Survey special maps appearing exclusively as plates illustrating the Survey's book publications, specifically Annual Reports, Bulletins, Monographs, Professional Papers, and Water Supply Papers, as well as separately published thematic maps such as land classification maps, geologic maps, state transportation maps compiled by the U.S. Geological Survey in the 1930s for the Bureau of Public Roads, mineral resource maps, or maps published in the Survey's lettered series (GQ, GP, I, etc.). When compiled, one hopes they will match the high quality of Stark's work.

#### LITERATURE CITED

Moffat, Riley Moore. 1985. *Map Index to Topographic Quadrangles of the United States, 1882-1940*. Western Association of Map Libraries Occasional Paper no. 10. Santa Cruz, Calif.: Western Association of Map Libraries.

**Jim Coombs**  
Map Librarian  
Southwest Missouri State University  
Springfield, Missouri

## Helping Your Child Learn Geography

By Carol Sue Fromblut  
Washington, D.C.: U.S. Department of  
Education, Office of Educational  
Research and Improvement, 1990.  
26 pages, maps, figs.

For sale by Geography, Consumer Information Center, Pueblo, CO 81009. \$.50.

This short and inexpensive booklet is rich in illustrations and practical suggestions for introducing geography to children. Contributors include the National Geographic Society, the National Council for the Social Studies, the U.S. Geological Survey, Hammond, and teachers proficient with

...rich in illustrations and practical suggestions for introducing geography to children.

geography and early childhood education. The booklet proceeds from two fundamental ideas. Young Americans should be more geographically literate, and children can learn geography through everyday experiences fostered by adults.

Although the booklet is directed toward parents whose children are under 10 years of age, it is also a resource for teachers. Suggestions for learning geography are organized around five fundamental themes stated clearly and without resort to curricular jargon. For each of them, the booklet offers concrete activities that employ the child's own home and neighborhood, surrounding city, library books, and even globe or atlas kept close to the family television. For example, younger children might notice that the sun sets on the western side of the house, make paper cutouts of

living room furniture for an early mapping experience, or check atlas locations for the origins of food, clothing, music, or stories. Suggestions for observing, comparing, and speculating represent the kinds of activities teachers wish they could do more often with individual children. A concluding section about free and inexpensive materials is carefully annotated with lists of maps, magazines, pen-pal organizations, picture books for younger children, and books and atlases for better readers. The suggestions and materials are diverse, but their common aim is to broaden children's experiences with both nearby and faraway places.

**Carol Gersmehl**  
**Department of Geography**  
**Macalester College**  
**Saint Paul, Minnesota**

...their common aim is to broaden children's experience with both nearby and faraway places.

## *Atlas of the World. 6th edition*

*Washington, D.C.: National Geographic Society, 1990. 133 plates, 136 pages. ISBN: 0-87044-398-4 (standard softcover). \$59.95. ISBN: 0-80744-399-2 (deluxe hardcover). \$74.95.*

The arrival of any major new world atlas is something of an event. An atlas dated 1990, however, arrives to face something more than the usual level of curiosity. Given the amazing political changes starting in late 1989, the first question one asks is "Did they catch it?" The "it" on this reviewer's mind was the unification of the two Germanies with Berlin as the once and future capital. The answer, in the case of the National Geographic Society (NGS) *Atlas of the World*, is "Quite nicely, thank you."

The atlas went to print in July 1990, with all maps showing a unified Germany with two capitals, Bonn and Berlin. This was something of a gamble as there was the possibility that unification would not happen. In September 1990, as the atlas was being gathered and bound, the German parliaments designated Berlin as the capital of the new nation, effective unification day, 3 October 1990. Gilbert Grosvenor, NGS

President, authorized the reprinting of the large scale map of Germany (plate 61), to reflect that change. It was too late to change all the plates showing Germany, so they will show dual capitals. A few thousand copies of the atlas, including the reviewers, show dual capitals on plate 61. The final sale product will show Berlin only. It must have been a very tense time for the NGS atlas staff!

Aside from the down-to-the-wire German question, how does the atlas stack up? It is unmistakably an NGS product. The NGS cartographic style is probably the most widely recognized by the general public and scholars alike, and the sixth edition continues in that tradition. Compared to the fifth edition (1981) there has been a considerable amount of reorganization, extensive use of Landsat imagery (including a stunning double page, virtually cloud free, composite of the entire world), an increase in the amount of thematic mapping, and several nice new touches.

Organizationally the sixth edition opens with a section of thematic maps dealing with the entire globe, then moves to a series of thematic-general map sections based on continental areas. Each continental sequence starts with an article and Landsat

In September, 1990, as the atlas was being gathered and bound, the German parliaments designated Berlin as the capital of the new nation...

The biggest visual change from the fifth edition is the addition of actual imagery - Landsat and astronomical.

All maps are now gathered by continent, and the sections flow nicely from general to specific...

composite, then moves to a double-page plate of thematic maps; a physical map; a political map; the larger scale regional maps; and finally, selected city maps. Where possible the regional maps are drawn to show complete political entities. Parts of northern Ontario and Quebec are missing at the larger scale (1:2,980,000), and the Soviet Union has to be shown on two plates (with a lot of overlap), but these were the only major lapses I could locate. Sections on the oceans and outer space, which had been at the beginning of the fifth edition are moved to the end of the sixth.

The biggest visual change from the fifth edition is the addition of actual imagery—Landsat and astronomical. In addition to the world and continental plates already mentioned, there is a color temperature-gradient shot of the North Atlantic used in the oceans section. The outer space section includes photographic imagery of star clusters, and what look like space probe images of the larger planets.

The world thematic mapping section includes new maps on biosphere, population, and climate. The thematic mapping in the continental sections include population, land use/land cover, resources and industry, transportation, and environmental stress.

Other changes from the fifth edition include the addition of an index to place names on the Moon; a new article on projections and mapmaking; a new red cloth place marker; and the deletion of a separate sheet of map symbols. The physical and political maps of the world are now fold-outs—increasing the scale from 1:67,000,000 to 1:39,000,000—and

are drawn on the Robinson, rather than van der Grinten, projection. There is also a handsome new physical map of the United States drawn at 1:7,965,000.

As demonstrated by the German episode, the NGS goes to some effort to make the atlas as up to date as possible. On less globally important issues than the new Germany we find, for instance, that the editors have included recent changes to the boundaries of Chaco Canyon National Monument in New Mexico, and very recent changes in the freeway pattern around Phoenix, Arizona.

To my eye, the new organization is an improvement over the old. All maps are now gathered by continent, and the sections flow nicely from general to specific. The new thematic maps are welcome, although one could wish for more of them. The Landsat images and space photography add a new and interesting dimension to the atlas.

While the sixth edition of the NGS *Atlas of the World* breaks no major barriers in concept or design, it is certainly a considerable refinement of an existing, and familiar, package. Purchase recommendations for this atlas are almost superfluous. Because of the almost unique public position occupied in North America by the NGS, all but the smallest North American libraries are going to buy this atlas, and it will be heavily used. Internationally, it is still a must purchase for most larger libraries.

Charles A. Seavey  
Graduate Library School  
University of Arizona  
Tucson, Arizona

## World and Man: Geographical Atlas

*Moscow: Main Administration of Geodesy and Cartography Under the Council of the Ministers of the U. S. S. R., 1988. 72 pages.*

This geographical atlas produced in the Soviet Union and published in English provides a variety of colorful and informative sections. The atlas's first section is devoted to the solar system, while the second

one features the U. S. S. R. Included in addition to maps are articles on plants and animals of various regions of the Soviet Union along with information about mushrooms, fruits and vegetables, and conservation. The concluding section of the atlas features other geographic regions of the world and includes drawings of related countries' flags, fauna and typical dress.

American readers will find this atlas

It utilizes a form typical of publications in the Soviet Union and translates it into English.

The physical format of the atlas features colorful and detailed graphics along with cartoon-like characters.

...this atlas should serve a variety of purposes in U. S. schools...

interesting for a variety of reasons. It utilizes a form typical of publications in the Soviet Union and translates it into English. The table of contents appears in the back, and no index is provided. Because the atlas is intended for use by young people, the text in certain sections begins with "Dear Children," or specifically asks readers to direct their attention to a particular area. This is not typical of American educational materials. Interspersed questions throughout the text are good for keeping the reader focused and participating. Readers will find that British spellings are often utilized and that hyphenation does not follow English language rules.

*World and Man* has a reading level of approximately third grade or higher. The physical format of the atlas features colorful and detailed graphics along with cartoon-like characters. This tends to make the text appear to be for young readers. However, a check of the vocabulary, content, and length of various text sections indicates that the atlas is also appropriate for older readers. Reading problems could be caused when dark colors mask some of the printed text, but most of the atlas is highly readable. Children in the atlas are depicted at much a younger age than the probable readers, but this could be an attractive aspect for some elementary school students. In the last

section of the atlas, peoples of the world are depicted in very stereotypical ways, however, this may be intended as a text for very young readers in the Soviet Union who have very limited information about various areas of the world.

In relation to social studies education in the United States, *World and Man* could be utilized at a variety of grade levels with differing purposes. While primary students may not be able to read at a high level, the atlas's coverage of information through use of detailed and colorful graphics could be applicable with young students. At the intermediate level it is typical for students in third or fourth grade to study geography of regions of the United States and similar regions elsewhere in the world. In those grades the atlas provides detailed information about the U. S. S. R. At approximately the sixth and seventh grade levels most students cover world history and world geography. Less advanced students could use the atlas as a resource while those who are more advanced might compare *World and Man* with other available atlases and evaluate its accuracy. Regardless, this atlas should serve a variety of purposes in U. S. schools.

**Ruth Ann Rapp**  
Social Studies Coordinator USD 497  
Lawrence, Kansas

## *The National Gazetteer of the United States of America. United States Concise 1990*

*(U. S. Geological Survey Professional Paper 1200US)*  
Washington, D. C. and Denver, Colo: U. S. G. P. O. 1990. xxxii, 526 pages.  
For sale by the Books and Open-File Reports Section, U. S. Geological Survey, \$80.00.

The U. S. Geological Survey (USGS) and the U. S. Board on Geographic Names (BGN) have been cooperating on *The National Gazetteer of the United States of America* for quite some time now. When completed, it will contain some 3 million names of places within the United States and its territories. However, since 1976, when the USGS began collecting names for

the current database from which the *National Gazetteer* will be produced, only six states have been officially published (the *National Gazetteer* is being published state by state as USGS Professional Paper 1200).

Until each volume is published as part of Professional Paper 1200, it is available as an "Interim Product." These "Interim Products" are listed together with ordering information in New Publications of the U. S. Geological Survey under the heading "Books—Miscellaneous and Special Books—Geographic Names Information System (GNIS)." Obviously most libraries or individuals will only be interested in the state or territory in which they reside, since

...the gazetteer "is a selected list of about 42,000 geographic names...

Florida is the oldest place name of European origin still in use in the U. S. (Ponce de Leon named it in 1513).

Preceding the tables is the "Outline Map of the States and Counties of the United States of America" is a useful addition.

...a much needed and welcome resource.

Aasu, American Samoa and Zwolle, Louisiana.

the whole interim set would be over 50 volumes and cost well over \$1,000.<sup>1</sup> Fortunately, as part of the "Interim Products," the USGS has also produced a volume called "Concise" (abridged U. S.). It is available as *The National Gazetteer of the United States of America. United States Concise 1990*, a published volume of the USGS Professional Paper 1200.

According to the "Introduction" in the *United States Concise 1990*, the gazetteer "is a selected list of about 42,000 geographic names in the alphabetical order for major places, features, and areas within the United States and its territories." The actual list of place names is preceded by an introduction and auxiliary information. The "Foreword" gives a short history of the cooperation between the USGS and the BGN on the *National Gazetteer of the United States of America* project.

The "Introduction" consists of a series of short essays. One of the topics included is a short history of both the BGN and the USGS. The section discussing "the geographic name heritage of the United States" provides information about the origins of place names used in the United States. One of the interesting facts mentioned here is that Florida is the oldest place name of European origin still in use in the U. S. (Ponce de Leon named it in 1513). Other essays in the "Introduction" cover the National Gazetteer database, the manner in which most geographic names have been constructed and the significance of place names on maps.

The "Guide to the Use of the Gazetteer" explains the meaning of each of the six columns that are listed on each page. Feature Name (first column) is "the proper name of a feature, place, or areas . . . listed in alphabetical order." Feature Class (second column) lists the terms that describe each feature. A glossary defining these terms precedes the gazetteer. The third and fourth

columns list the county and the state in which the feature is located, while the fifth column gives the geographic coordinates in latitude and longitude. The final column indicates the elevation in feet above sea level for many features.

Tables One through Twelve (pages XXV-XXX) contain "geographic data that are frequently requested from the USGS, "for instance the longest rivers in the U. S., state capitals, geographic centers of states, extremes in elevation, and so on." Preceding the tables is the "Outline Map of the States and Counties of the United States of America" which was taken from the *National Atlas of the United States of America* (revised sheet, 1987). Since the gazetteer gives both the county and the state in which a feature is located, the "Outline Map" is a useful addition.

My only criticism of the 526-page gazetteer concerns the presentation of the geographic coordinates. For instance, the coordinates of Abington, Pennsylvania, are listed as 400714N0759706W. Someone who has never used a BGN gazetteer (all of their gazetteers list coordinates in this format) or who is not very familiar with geographic coordinates may have a difficult time interpreting this string of characters. Despite this minor reservation, I find the *United States Concise 1990* gazetteer a much needed and welcome resource and I highly recommend it for inclusion in most library collections.

#### NOTES

1. This price reflects the cost of bound volumes. Approximately half of the states are available on microfiche for \$2.00 each.

Bart Austhof  
Map Librarian  
University of Nebraska-Lincoln  
Lincoln, Nebraska



# A Century of Service: The U. S. Board on Geographic Names

Bart Austhof

The United States Board on Geographic Names (BGN) is celebrating its 100th anniversary. The Board was created to deal with the lack of standardization in geographic names used by the Federal government. After the Civil War when the West was expanding it became evident that the U.S. government needed to standardize geographic names as much confusion arose over the fact that single geographic features were often given several different official names. The problem became serious enough that President Benjamin Harrison issued an Executive Order on 14 September 1890 creating the BGN to look at "unsettled questions concerning geographic names." The Board's responsibilities were extended by Theodore Roosevelt in 1906 "to standardize all new and changed geographic names for Federal use."

Initially the emphasis was the standardization of geographic names used in the U.S. and its territories; however, the Board became more heavily involved with foreign names as a result of the two World Wars. Many of the European geographic name changes caused by World War I were represented in the Board's "First Report on Foreign Names" (1927). During World War II the BGN standardized millions of foreign names including about 3 million Chinese, Japanese, and Korean names. The Board underwent a major reorganization when Congress passed Public Law 80-242 on 25 July 1947 creating the BGN in its current form.

Today, as in the past, the BGN has no budget or staff of its own. The members of the Board are representatives from other agencies and departments within the federal government who are concerned with the use of geographic names. Within the BGN there are two committees who are responsible for the standardization of domestic and foreign geographic names.

The Domestic Names Committee (DNC) is responsible for the standardization of all geographic names within the United States territories and the 50 states. The Board

only considers new names or changes that are brought to it by federal agencies, local authorities or individuals, and it will not initiate the naming of a geographic feature itself. As a policy the Board will not approve new geographical names "that honor or may be construed to honor living persons." Names will not be approved that are "derogatory to a particular person, race, or religion." Proposed domestic geographic names and changes are reviewed by a research staff at the U.S. Geological Survey (USGS) and are put on a list for consideration by the DNC. Decisions by the BGN are published as "Decisions on Geographic Names in the United States." These domestic names are being published in a continuing series of gazetteers, beginning in 1982 (as U. S. Geological Survey Professional Paper 1200).

The Foreign Names Committee (FNC) standardizes foreign geographical names for Federal use. The FNC does not select new names for foreign areas. It usually uses names that appear on "maps, charts, or other official documents produced by official agencies." The two major exceptions are names that are not written with roman letters and "conventional" English names (such local official names as Wien, Roma and Venezia are conventionally recognized in English as Vienna, Rome and Venice). When a country does not use roman letters, a transliteration or transcription system is set up to convert the alphabet into roman letters. Since 1943 the BGN has prepared more than 175 foreign national and regional gazetteers. Even though a library might not own detailed maps of a particular part of the world, the appropriate gazetteer makes it possible to locate millions of places (and then guide acquisition of the appropriate large-scale map coverage).

As part of the centennial celebration, the BGN has produced new historical and bibliographic publications. A symposium was held in September and a major exhibition at the Library of Congress, "A World of Maps," was prepared.

During World War II the BGN standardized millions of foreign names including about 3 million Chinese, Japanese, and Korean names.

Since 1943 the BGN has prepared more than 175 foreign national and regional gazetteers.



# CONTRIBUTORS TO MERIDIAN 5

- Phillip Allen, History and Geography Department, Central Library, Birmingham, U. K.
- Brent Allison, Borchert Map Library, University of Minnesota, Minneapolis, MN 55455
- Brenda Boatright, Kansas City Chiefs, One Arrowhead Drive, Kansas City, MO 64129
- Erno R. Bonebakker, Map Link, 317 Spring Street, Portland, ME 04102
- Richard L. Branham, Department of Design, University of Kansas, Lawrence, KS 66045
- Dewitt Braud, Jr., Decision Associates Inc., 1276 Sharynwood Drive, Baton Rouge, LA 70808
- The British Library, Great Russell Street, London WC1B 3DG, England
- Rosemary Cann, Geographic Information Centre, Department of Geography, University of British Columbia, Vancouver, B. C.
- Larry Carver, University of California, Map and Imagery Laboratory, Santa Barbara, CA 93106
- Schera Chadwick, National Map Gallery and Travel Center, 6907 East Avenue, Chevy Chase, MD 20815
- Michael P. Conzen, Committee on Geographical Studies, The University of Chicago, 5828 S. University Avenue, Chicago, IL 60637-1583.
- Steven Cox, Earth Observation Satellite Co. (EOSAT), Public Affairs Office, 4300 Forbes Boulevard, Lanham, MD 20706
- Donald H. Cresswell, The Philadelphia Print Shop, Ltd., 8441 Germantown Avenue, Chestnut Hill, Philadelphia, PA 19118
- Donald W. Davis, Louisiana Geological Survey, Louisiana State University, Baton Rouge, LA 70803
- Ralph Ehrenberg, Assistant Chief, Geography and Map Division, Library of Congress, Washington, DC 20540
- Con Erickson, Rand McNally and Company, P. O. Box 7600, Chicago, IL 60680
- John B. Garver, Jr., Cartographic Division, National Geographic Society, Washington, DC 20036
- Jacqueline Grace, Grace Galleries, Inc., 75 Grand Avenue, Englewood, NJ 07631.
- Peggy Harper, NOAA Office of Legislative Affairs, Suite 105, 11400 Rockville Pike, Rockville, MD 20852
- Tom Hedberg, Latitudes Map and Travel Store, 3801 Grand Avenue South, Minneapolis, MN 55409
- Joan Henges, NIE/Educational Services, *The Kansas City Star*, 1729 Grand Avenue, Kansas City, MO 64108
- Francis Herbert, Map Room, Royal Geographical Society, Kensington Gore, London SW7 2AR, England
- Philip Hoehn, Map Room, University of California, Berkeley, CA 94720
- Alice Hudson, Map Division, The New York Public Library, Fifth Avenue at 42nd Street, New York, NY 10018
- Karen Hunter, Environmental Systems Research Institute, 380 New York Street, Redlands, CA 92373
- Margaret Hutchison, Cartographic Archivist, Saskatchewan Archives Board, Regina, Saskatchewan
- Glen Isaac, Cartographic Archivist, British Columbia Archives and Records Service, Victoria, B. C.
- Farrell W. Jones, CADGIS Research Laboratory, Louisiana State University, Baton Rouge, LA 70803
- Robert W. Karrow, Jr., The Newberry Library, 60 West Walton Street, Chicago, IL 60610
- Christine Kennedy, Chrismar Mapping Services Inc., 470 Sentinel Road, Unit 617, Downsview, Ontario, Canada M3J 1V6
- Christine Kollen, The University of Arizona, University Library, Map Collection, Tucson, AZ 85721
- Nina Lam, Department of Geography and Anthropology, Louisiana State University, Baton Rouge, LA 70803
- Mary L. Larsgaard, University of California, Map and Imagery Laboratory, Santa Barbara, CA 93106
- Anthony J. Lewis, Department of Geography and Anthropology, Louisiana State University, Baton Rouge, LA 70803
- Der-Tzong Liaw, The Ohio State University, Department of Geography, Columbus, OH 43210
- Kate Loggan, Oregon Episcopal School, 6300 S. W. Nicol Road, Portland, OR 97223
- Edward W. Lollis, National Map Gallery and Travel Center, 6907 East Avenue, Chevy Chase, MD 20815
- Duane F. Marble, The Ohio State University, Department of Geography, Columbus, OH 43210
- Stamps and Philatelic Center of the Republic of the Marshall Islands, 1 Uncover Center, Cheyenne, WY 82008-0021.
- Randolph A. McBride, Louisiana Geological Survey, Louisiana State University, Baton Rouge, LA 70803
- George F. McCleary, Jr., Department of Geography, University of Kansas, Lawrence, KS 66045-2121
- Robert W. McColl, Department of Geography, University of Kansas, Lawrence, KS 66045-2121
- Barbara B. McCorkle, Map Collection, Yale University Library, 1603A Yale Station, New Haven, CT 06520
- Michael P. McDermott, U. S. Geological Survey, 508 National Center, Reston, VA 22092
- Gary W. North, U. S. Geological Survey, National Center, Reston, VA 22092
- John R. Parsons, Eureka Cartography, 2161 Shattuck Ave., Berkeley, CA 94704
- Oliver G. A. M. Payne, Cartographic Division, National Geographic Society, Washington, DC 20036
- Shea Penland, Louisiana Geological Survey, Louisiana State University, Baton Rouge, LA 70803
- Chris Perkins, The University of Manchester, Geography Department, Mansfield Cooper Building, Oxford Road, Manchester M13 9PL, England
- Beverly Presley, Guy H. Burnham Map and Aerial Photography Library, Clark University, 950 Main Street, Worcester, MA 01610-1477
- John W. Reps, Publisher, Historic Urban Plans, Box 276, Ithaca, NY 14851
- Eric Riback, DeLorme Mapping Company, P. O. Box 298, Freeport, ME 04032
- George Ritzlin, Books & Maps, P. O. Box 6060, Evanston, IL 60204
- Tim Ross, Map Librarian, University of British Columbia Library, Vancouver, B. C.
- Ken Shain, GEOVISION, Inc., 5680B Peachtree Parkway, Norcross, GA 30092.
- Mark Smith, Chrismar Mapping Services Inc., 470 Sentinel Road, Unit 617, Downsview, Ontario, Canada M3J 1V6
- Frank Stern, 68 Lisbon Street, Providence, RI 02908-4704
- Henry R. Streifer, Decision Associates Inc., 1276 Sharynwood Drive, Baton Rouge, LA 70808
- Telemap, 1327 N. Main Street, Suite 101, Walnut Creek, CA 94596-4634
- Lee Thomson, IDRISI Project, Clark University, 950 Main Street, Worcester, MA 01610-1477
- Dennis Trombatore, Geology Library, The University of Texas at Austin, Department of Geological Sciences, P. O. Box 7909, Austin, TX 78713-7909
- Ron Whistance-Smith, William C. Wonders Map Collection, University of Alberta, Edmonton, Alberta.
- Margaret Wilkes, Map Library, National Library of Scotland, 33 Salisbury Place, Edinburgh EH9 1SL, Scotland
- S. Jeffress Williams, U. S. Geological Survey, 914 National Center, Reston, VA 22091
- Alberta Auringer Wood, Map Library, Memorial University of Newfoundland, Queen Elizabeth II Library, St. John's, Newfoundland, Canada A1B 3Y1
- Clifford W. Wood, Director, MUNCL, Department of Geography, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X9, Canada
- Frances Woodward, The University of British Columbia, Special Collections and University Archives Division, Library, 1956 Main Mall, Vancouver, B. C., Canada V6T 1Y3

# Tools of the Trade

Editor's Note: Everyone has "a favorite thing." For the couch potato, it is probably the remote control unit for the television set (and one for the VCR, another for the cable channel selector, ...). On the job, it may be a dictionary or some reference volume; others might rely on the telephone or the computer (with its word processor). In a word, this thing is invaluable—it is hard to manage living and working without it.

A collection of these should produce a unique catalog for MERIDIAN readers.

Not only would this list be suggestive to the reader—be he or she a librarian, archivist, cartographer, or—simply—a map aficionado, but such a list would provide insights into the "map subculture."

This section began with the results of an appeal to MAGERT members (in *baseline*) to help develop a gift list: "What would you most like to have in your collection? ... the kind of thing that you would give to a friend..." Here, then, are the first responses, two approaches to the Tools of the Trade.

## Tool Set 1: A Reference Collection for Western Canada

Frances Woodward, Rosemary Cann, Margaret Hutchison,  
Glen Isaac, Tim Ross, and Ron Whistance-Smith

There are a number of resources which this group of map librarians, working in Alberta, Saskatchewan and British Columbia depends upon heavily.

Thomson, Don. *Men and Meridians: The History of Surveying and Mapping in Canada*. (Ottawa: Dept. of Energy, Mines & Resources, 1966–1969).

Zaslow, Morris. *Reading the Rocks: The Story of the Geological Survey of Canada 1842–1972*. (Toronto: MacMillan; Ottawa: EMR, 1975).

These two works provide a history of the surveying of Canada. Based on various other historical works, including a history of hydrographic surveying on the west coast, Thomson's work in three volumes takes the story to 1947. Zaslow is more readable, but both are interesting, have lots of illustrations, and provide information about many mapmakers and surveyors.

Thomson, Don. *Skyview Canada: A Story of Aerial Photography in Canada*. (Ottawa: Department of Energy, Mines and Resources, 1975).

This book does for aerial photography what *Men and Meridians* and *Reading the Rocks*

do for topographic and geological surveying. This book provides a good introduction and summary of the history, technology, people and programmes of air and space photography in Canada. It is well illustrated.

Verner, Coolie and Stubbs, Basil Stuart. *The Northpart of America*. (Toronto: Academic Press Canada, 1979).

A history of the exploration and survey of Canada, this volume has extensive illustrations and bibliographic descriptions of selected maps representing the various regions of the country. Besides being interesting, it is useful in identifying the various states of the maps described. A beautiful book, it is one that the cartophile would no doubt like to have.

*Historical Atlas of Canada*. (Toronto: University of Toronto Press, 1987–). Volume I: *From the beginnings to 1800* (1987) and Volume III: *The Twentieth Century* (1990) have been published; Volume II: *The Nineteenth Century* is still in press. These are beautiful and informative atlases, a necessity for any school or library.

A beautiful book, it is one that the Cartophile would no doubt like to have.

Nicholson, N. L. and L. M. Sebert. *Maps of Canada*. (Hamden, Conn.: Shoe String Press, 1981).

Subtitled *A Guide to Official Canadian Maps, Charts, Atlases and Gazetteers*, this volume is critical for anyone working with Canadian government maps, past and present. It has the added quality of being very readable.

Wagner, Henry R. *Cartography of the Northwest Coast of America to the Year 1800*. (Amsterdam: N. Israel, 1988).

This is a reprint of the two-volume work published in 1937. The first volume summarizes the history of maritime exploration, and the second volume lists the maps chronologically. Included are lists of place names from this period which are still in use, along with one of names that are obsolete. The list of maps includes an (out-of-date) indication of the repositories holding both original maps and photocopies; this is particularly useful for locating early Spanish maps. There are reproductions of some of the maps.

*County Atlases of Canada: A Descriptive Catalog*. (Ottawa: National Archives of Canada, 1970).

One of the useful reference guides from the National Map Collection, this one includes a brief introduction to county atlases, a detailed listing of the contents of each one, and some representative illustrations. It is a useful guide for researchers, especially genealogists. *County Maps: Land Ownership Maps of Canada in the Nineteenth Century* (1976), another of these guides, covers wall maps which contain much the same information as the atlases.

*Maps of Indian Reserves and Settlements in the National Map Collection: Volume I: British Columbia*. (Ottawa: National Archives of Canada, 1980).

One of a series, this guide is invaluable for those looking for maps showing Indian reserves.

Farley, A. L. *Historical Cartography of British Columbia, with a separate appendix of maps*. (Ph. D. Dissertation;

University of Wisconsin, 1961). An excellent overview of the cartographic history of British Columbia.

In addition to these volumes which provide information for Canada, the following were also cited for their continuing usefulness:

Ehrenberg, Ralph. *Archives and Manuscripts: Maps and Architectural Drawings*. (Chicago: Society of American Archivists, 1982).

A "must" for anyone working in cartographic archives, especially government records.

Farrell, B. and Desbarats, A. *A Guide for a Small Map Collection* (Second edition; Ottawa: Association of Canadian Map Libraries and Archives, 1984).

A useful guide for the small map collection.

*Cartographic Materials: A Manual of Interpretation for AACR2*. (Chicago: ALA; Ottawa: CLA; and London: LA, 1982).

Absolutely essential for anyone trying to catalog a map or describe a cartographic collection.

*Cartographical Innovations: An International Handbook of Mapping Terms to 1900*. (Helen M. Wallis and Arthur H. Robinson, eds. Map Collector Publications, in association with the International Cartographic Association, 1987).

An interesting book for anyone interested in old maps, and very important for any curator of historical map collections.

Greenhood, David. *Mapping*. (Chicago: University of Chicago Press, 1964).

A handy book for a non-geographer working with maps.

Muehrcke, Phillip. *Map Use: Reading, Analysis and Interpretation*. (Madison, Wis.: JP Publications, 1978. Second edition, 1986).

For the university map librarian, handling a broad range of requests, this text has been invaluable.

Included are lists of place names from this period which are still in use, along with one of names that are obsolete.

# Tool Set 2: The Natural Scale Indicator

Frank Stern and Clifford Wood

In 1935, the Geographer of the U. S. Department of State, S. Whittemore Boggs, created the "Natural Scale Indicator." A 7.5-by-38.0 centimeter heavy-paper "ruler," the scale indicator was designed to help the map user read "natural scales"—representative fractions—easily.

There are four scales on the Natural Scale Indicator: statute mile, kilometer, one-degree latitude, and 1000 feet. The indicator can be used to ascertain the scale of any map on which parallels of latitude or any of the graphic scales of linear distance are shown. It can also be used to create a graphic scale for any map for which the representative fraction is known.

Boggs and Lewis, in *The Classification and Cataloging of Maps and Atlases* (1945), discuss scale on maps and describe the scale indicator in the "Technical Notes Concerning Maps:"

The simplest and the most widely accepted method of stating the scale... is to indicate it in terms of the "natural scale" or "representative fraction" ("R. F."). Regardless of differences of language and of units of measure, the natural scale is equally intelligible to all who read the same numerals... (79)

After discussing a number of other aspects of scale and its representation, Boggs and Lewis point out that

several such scale readers have been made and published in foreign countries. A "Natural Scale Indicator"... was prepared...in 1935....In addition to the full instructions for the use of the

device which are printed thereon, useful tables are shown which facilitate conversion from the natural scale to miles per inch, and vice versa. (80)

Larsgaard (1987) notes that the natural scale indicator is available from the U. S. Department of Commerce (there is no charge for a heavy paper copy) or in a plastic version from Clifford Wood of the Memorial University of Newfoundland. She notes that, in addition to being included in Boggs and Lewis (1945), the "Natural Scale Indicator" is found in *Foreign Maps* (1963); in this U. S. Department of the Army Technical Manual, the scale appears in a pocket with the reference "Figure 151" on it. The text of the work and the appendixes on scale and map measurement make no reference either to the scale indicator or to "Figure 151."

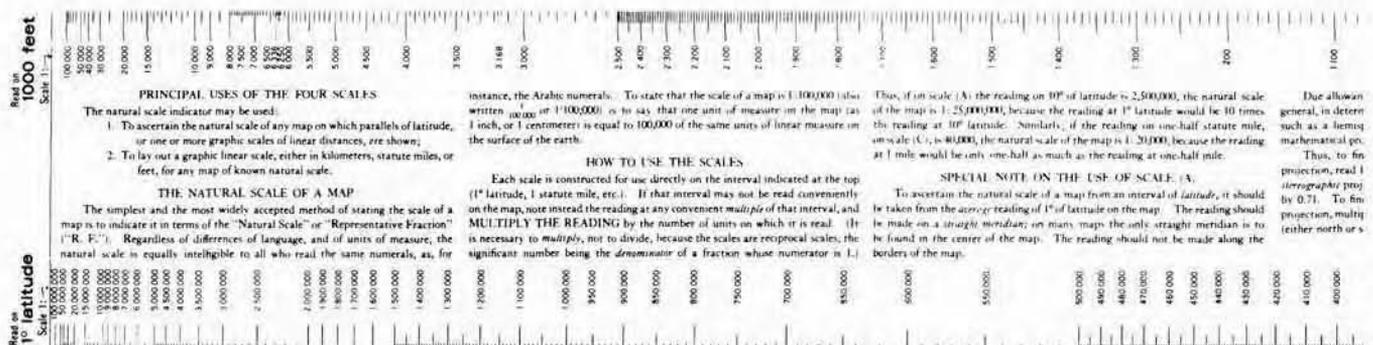
A device of more than passing utility to anyone who uses maps, it appears that the "Natural Scale Indicator" and similar devices were not extensively publicized in the geographic and cartographic literature.

## LITERATURE CITED

- Boggs, Samuel W. and Lewis, Dorothy Cornwell. 1945. *The Classification and Cataloging of Maps and Atlases*. New York: Special Libraries Association.
- Larsgaard, Mary Lynette. 1987. *Map Librarianship: An Introduction*. 2d ed. Littleton, Colo.: Libraries Unlimited, Inc.
- U. S. Department of the Army. 1963. *Foreign Maps*. TM 5-248. Washington: U. S. Government Printing Office.

A device of more than passing utility to anyone who uses maps, it appears that the Natural Scale Indicator and similar devices were never extensively publicized in the geographic and cartographic literature.

Portion of the original Natural Scale Indicator, 1935 (reduced).



# A Final Word

Jenny Marie Johnson  
University of Washington

Taking time to demystify both the map and our services is very important.

We must be part of a broader educational effort to expand and improve the role of maps in everyday life...

Our continuing task will be...to adapt to and to redefine our niche in the information environment.

A successful promotional campaign is never ending—only individual phases and events have concrete starting and finishing points. Whether winning the battle of the budget or succeeding in the clash of corporations, we extend our support, acquire more clout, and improve our chances of survival in different ways. Most important, cartographic “infophiles” need to do a lot of work to bring our products, services, and needs to the attention of the people relying upon and supporting or assisting us, because cartographic information often is in an inconvenient format or is perceived as being difficult to access and use.

Many who come to a library or a store (or even a mail order catalog) are first time users. Taking time to demystify both the map and our services is very important. Not only is the library or the map store an unfamiliar environment; a map is often an alien phenomenon.

There is, as well, the wider issue of geographic literacy, the familiarity of people with maps and map use in general. The conclusion reached by Liben and Downs, “that work on maps—both in the public schools and in academia—is assumed to be an expendable and irrelevant luxury” (1989, 197), suggests that there is more to promoting cartographic materials than those in “the map business” can handle alone. We must be part of a broader educational effort to expand and improve the role of maps in everyday life, in both business and pleasure. We must recognize that people may not be inherently graphically literate and that the map is not, either in content or structure, obvious to everyone. While it has been a long time since Balchin and Coleman (1966) argued the case for “graphicacy,” the problem appears to be no closer to resolution today.

At the same time that we increase the role of maps, we need to become more literate in, and more facile with, the emerging technology. The revolution brought about

by the computer is beneath the surface of all of the other problems which we face. This emerging niche will perhaps be an uncomfortable one for we shall be faced with an increasing array of data in unfamiliar formats necessitating the development of skills beyond those already acquired.

This larger information problem has arisen because the growth of information is accelerating at an ever increasing rate. Without the support of computer-based systems, both we and our patrons will be unable to gain access to or use much of the available data. A new generation of users, capable in computer use and dependent on both the technology and the data academically and vocationally, will generate a new variety of demands.

Promoted or not, cartographic information sources will become extremely important. No longer an afterthought or a choice stumbled upon by chance, the “map” is becoming something of increasing convenience and importance. As our clientele changes, so do we. Our continuing task will be not only to maintain a friendly, inviting operation and to promote the use of our resources and services but also to adapt to and to redefine our niche in the information environment. In this way, we shall not only be helpful, but we can also help people enjoy the strange and beautiful materials we work with; we can share the joys and pleasures that are embodied in maps.

## LITERATURE CITED

- Balchin, W. G. V. and A. M. Coleman. 1966. “Graphicacy Should Be the Fourth Ace in the Pack.” *The (Canadian) Cartographer* 3: 23–28.
- Liben, Lynn S. and Roger M. Downs. 1989. “Understanding Maps as Symbols: The Development of Map Concepts in Children.” In Hayne W. Reese, editor, *Advances in Child Development and Behavior* 22. San Diego: Academic Press, pp. 145–201.