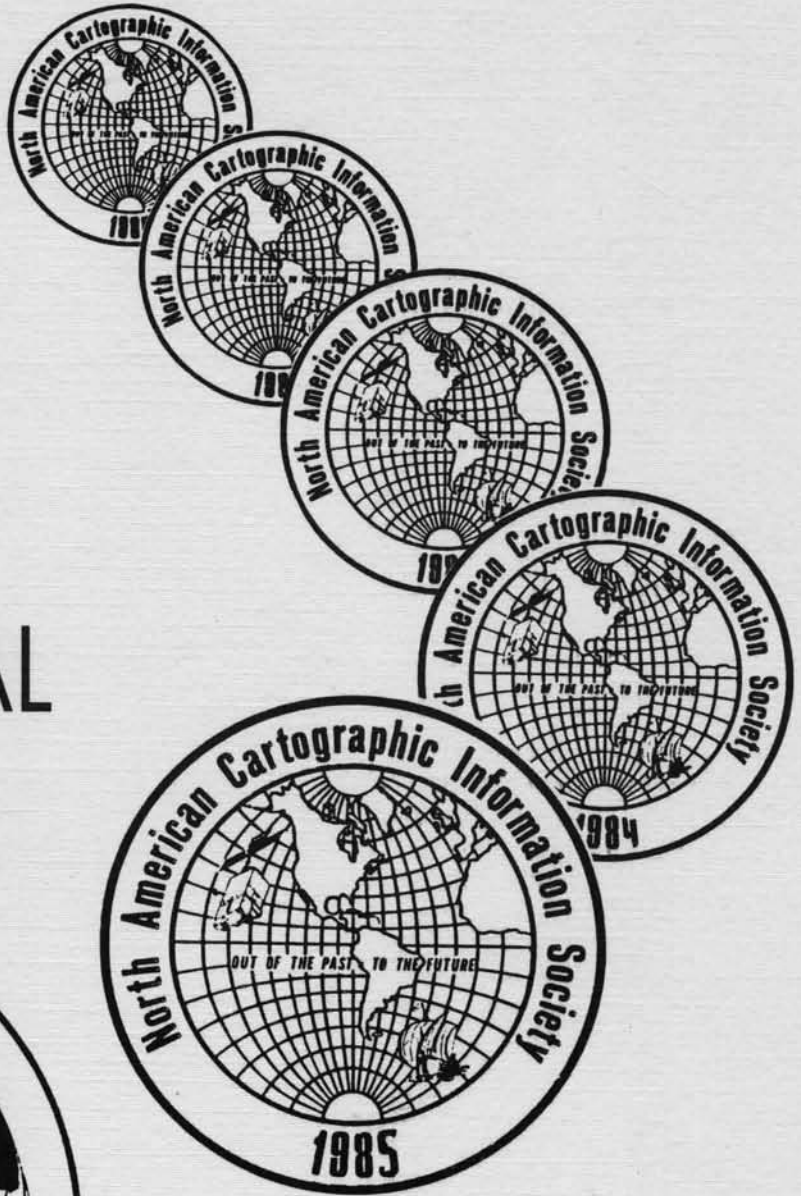


**NORTH
AMERICAN
CARTOGRAPHIC
INFORMATION
SOCIETY**

CONFERENCE PROGRAM AND ABSTRACTS

**MAPS & CHARTS
FOR ALL AGES**



**th
ANNUAL**



**PHILADELPHIA HILTON
OCTOBER 15-18, 1986**



NORTH AMERICAN CARTOGRAPHIC INFORMATION SOCIETY

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NORTH AMERICAN
CARTOGRAPHIC INFORMATION SOCIETY

NACIS
VI

MAPS AND CHARTS FOR ALL AGES

October 15 - 18, 1986

NACIS VI PROGRAM

Wednesday, October 15.....	2
Thursday, October 16.....	3
Friday, October 17.....	6
Saturday, October 18.....	7

NACIS ABSTRACTS

Wednesday, October 15.....	9
Thursday, October 16.....	9
Friday, October 17.....	14
Saturday, October 18.....	17

CONFERENCE NOTES

Registration Hours.....	22
Exhibits Program.....	22
Field Trips.....	23
IMDA Preliminary Program.....	24

The Philadelphia Hotel
Philadelphia, Pennsylvania
October 15-18, 1986

Conference Participants:

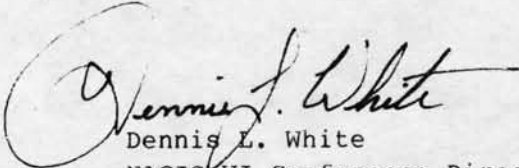
Welcome to the City of Philadelphia, the site for the Sixth Annual Meeting of the North American Cartographic Information Society (NACIS). This year we are privileged to share our conference with the Sixth Annual International Map Dealer's Association (IMDA) Convention, and we look forward to this joint effort. I believe that you as the participants, will be the beneficiary, as we share a common interest in cartographic information and communication.

The theme of this year's meeting, "MAPS AND CHARTS FOR ALL AGES" is reflected in the various presentations and poster sessions available to you this week. What is the role of maps in teaching? What type of intellectual needs and uses maps? What type of maps will we use in the future? What are the cartographic needs of Latin America? How has historical maps changed the way we visualize the world today. What was John Bartholomew's contribution to Allied Forces escape using maps on silk? These are just a few of the questions we will be finding answers to during the next few days. And remember, during all of this, be sure not to forget visiting Philadelphia. It's a city of unmeasurable historical heritage. I hope you will have the opportunity to get to know the city. Its been here a long time, 304 years to be exact, just waiting to show off its past. Check your registration packet for maps and information about the city.

I would like to thank all the members of the 1986 Conference Committee and the Executive Board, who assisted in the planning and organization of NACIS VI. Certainly included in the thank you is the cooperation and enthusiasm that has been give to us by the planning committee of IMDA. They have been extremely helpful this past year.

Finally, I want to thank you, because it is you who enable a conference like this to go on. Without your support in presenting papers, planning sessions, displaying posters, and attending the annual meeting, none of this would be possible.

Thank you for attending and participating in NACIS VI.


Dennis L. White
NACIS VI Conference Director

NACIS VI

MAPS AND CHARTS FOR ALL AGES

WEDNESDAY, OCTOBER 15

1:00 p.m. - 5:00 p.m.
Noon - 7:00 p.m.

REGISTRATION - Hotel Foyer
EXHIBITS SETUP - Assembly Room
- Salon B, C, & D

1:00 - 3:00 p.m.

NACIS COMMITTEE MEETINGS

HANCOCK PARLOR
4th Floor

o NACIS BOARD OF DIRECTORS

3:00 - 5:00 p.m.

NACIS COMMITTEE MEETINGS

HANCOCK PARLOR
4th Floor

o LOCAL ARRANGEMENTS
o Inter-American Co-Operation Committee

ADAMS PARLOR
4th Floor

MAPS AND CHARTS FOR ALL AGES
OPENING SESSION - SALON A

7:30 a.m. - 9:00 p.m.

- o WELCOME
Dennis L. White - Program Chairman
Elaine F. Bosowki - Local Arrangements
- o OPENING ADDRESS
Ruth Anderson Rowles - President
University of Kentucky
- o KEYNOTE SPEAKER
Barbara Bond - British Liaison Officer
Defense Mapping Agency

NACIS RECEPTION

9:00 p.m. - 11:00 p.m.

Hotel Foyer

o NACIS Reception and Cash Bar

THURSDAY, OCTOBER 16

8:00 a.m. - 5:00 p.m.	REGISTRATION	Hotel Foyer
9:30 a.m. - 5:00 p.m.	EXHIBITS OPEN	
Salon B,C,& D Assembly Room	NACIS and IMDA Exhibits are Open to Conference Attendees	
8:45 - 10:30 a.m.	PAPER SESSION	
WHARTON ROOMS	o MAPS AND WAYFINDING SESSION	
Chair: Howard Diamond, NOAA/NOS		
	STRIP FORMAT MAPS Alan M. MacEachren, Pennsylvania State University	
	SKILLED AND UNSKILLED WAYFINDING FOR AN UNFAMILIAR ENVIRONMENT Jeremy Crampton, Pennsylvania State University	
	DIGITAL MAPS FOR LAND VEHICLE LOCATION AND NAVIGATION Donald F. Cooke, Geographic Data Technology, Inc.	
	ROUTE PLANNING CAPABILITIES OF THE AUTONOMOUS LAND VEHICLE Linda M. Hoehn, U.S. Army Engineer Topographic Laboratories	
10:30 - 10:45 a.m.	BREAK	
10:45 a.m. - 12:30 p.m.	PAPER SESSION	
WHARTON ROOMS	o GENERAL PAPER SESSION	

Chair: Leonard S. Dinder, NOAA/NOS

IMPLEMENTATION OF NORTH AMERICAN DATUM OF 1983 INTO THE NOS CHARTING PROGRAM
Ronald M. Bolton, NOAA/NOS

THURSDAY, OCTOBER 16

WHARTON ROOMS

GENERAL PAPER SESSION (continued)

RELIEF SHADING

Thomas Patterson, University of Utah

USGS/DEM SHADED RELIEF DATA FOR NOS ALASKA
VISUAL AERONAUTICAL CHART PRODUCTS

Russel A. Hoover, National Ocean Service

12:30 - 1:30 p.m.

LUNCH BREAK

1:30 - 3:00 p.m.

SPECIAL PAPER SESSION

WHARTON ROOMS

o INTER-AMERICAN CARTOGRAPHIC INFORMATION

Chair: Jerry Thornton, University of Michigan

INSTITUTIONAL COLLECTIONS OF LATIN AMERICAN
CARTOGRAPHIC MATERIALSDiana Huizar Rivera, Michigan State
UniversityACQUISITION OF CENTRAL AND SOUTH AMERICAN
MATERIALS

Bill Stewart, University of Michigan

LATIN AMERICAN MAPPING

Hull Mclean

2:00 - 5:00 p.m.

FIELD TRIPS*

- o Temple University Cartographic Lab.
- o PHILADELPHIA WALKING TOUR
Dr. Hal Leaman, Villanova University

*Field trip information will be at the
registration desk

THURSDAY, OCTOBER 16

6:00 - 8:00 p.m.

SPECIAL POSTER SESSIONS

WHARTON ROOMS

o Products and Resources of University
Cartographic Laboratories

Organizer: Donna G. Schenstrom, University of Wisconsin-Milwaukee

PARTICIPANTS:

University of Akron
Deborah King

University of Kentucky
Gyula Pauer

University of Waterloo
Gary Brannon

University of Utah
Thomas Patterson

Michigan State University
Ellen White

University of South Carolina
Jerry Ulrey

University of Wisconsin-Milwaukee
Donna G. Schenstrom

Florida State University
James K. Anderson, Jr.

University of Maryland
Ron Linton

Georgia State University
Frank Drazo

University of Western Ontario
Pat Chalk

WHARTON ROOMS

o Services and Products of the State
Affiliate Cartographic Information Offices

Organizer: James K. Anderson, Jr., Florida State University

6:00 - 8:00 p.m.

JOINT NACIS/IMDA RECEPTION

Assembly Room

Admission by Registration Badge

FRIDAY, OCTOBER 17

8:00 a.m. - 5:00 p.m.	REGISTRATION - Hotel Foyer
8:30 a.m. - 5:00 p.m.	EXHIBITS OPEN
SALON B,C, & D Assembly Room	NACIS AND IMDA EXHIBITS
8:45 - 10:15 a.m.	PAPER SESSION
WHARTON ROOMS	o CARTOGRAPHIC EDUCATION
Chair: Ruth Anderson Rowles, University of Kentucky	
	APPLICATION OF THE MDT TESTING METHOD FOR CARTOGRAPHIC INFORMATION EDUCATION Paul S. Anderson, Illinois State University
	THE ROLE OF MAPS AND GRAPHICS IN TEACHING AT A DISTANCE John R. Hunt, The Open University, U.K.
	A PERCEPTUAL APPROACH TO GEOGRAPHY THROUGH MAPPING Dr. Henry W. Castner, Queen's University
10:15 - 10:30 a.m.	BREAK
10:30 - 11:30 a.m.	SESSIONS CONTINUATION
WHARTON ROOMS	MAPS ON THE LANDSCAPE: CARTOGRAPHIC SYMBOLS IN THE ENVIRONMENTAL ARCHIVE. Dr. Donald J. Zeigler, Old Dominion University
	THE CURIOUS INTELLIGENT LAY PERSON WITH A MATURE INTELLECT Emma A. Kowalenko, Encyclopaedia Britannica, Inc.
11:30 a.m.- 1:00 p.m.	LUNCH
1:00 p.m. - 2:45 p.m.	SPECIAL PANEL DISCUSSION
WHARTON ROOMS	o NATIONAL STANDARD CARTOGRAPHIC NUMBER
Organizer: John D. Stephens, University of Miami	
	Barbara A. Fine, The Map Stop, Inc.
	Patricia Harris, National Bureau of Standards
	Edward W. Patton, Alfred B. Patton, Inc.
	James D. Minton, University of Arizona
3:00 - 5:00 p.m. Salon A	NACIS ANNUAL BUSINESS MEETING
5:00 p.m. -	"NIGHT OUT ON THE TOWN"

Special events will be posted at the registration desk

SATURDAY, OCTOBER 18

8:00 a.m. - 1:00 p.m.

REGISTRATION - HOTEL FOYER

9:00 a.m. - 1:00 p.m.

EXHIBITS OPEN - ASSEMBLY ROOM
SALON B, C, & D

8:45 a.m. - 10:30 a.m.PAPER SESSION

WHARTON ROOMS

o HISTORICAL AND FUTURISTIC MAPPING

Chair: Walt Wagner, U.S. Geological Survey

WILLIAM DARBY'S 1824 MAPS: FIRST OF
PENNSYLVANIA'S PAGE-SIZE MAPSDr. Donald M. Hoskins, Pennsylvania
Bureau of Topographic and Geologic Survey

THE FUTURE IS NOW

Alan A. Delucia - Intergraph Corporation

A MICRO-COMPUTER FRAMEWORK FOR WORLD WIDE
MAPPING

Christopher G. Heivly, Department of State

10:00 a.m. - NoonFIELD TRIP: Philadelphia Free Library

10:30 a.m. - 10:45 a.m.

BREAK

10:45 a.m. - 12:30 p.m.

PAPER SESSION

WHARTON ROOMS

o SPECIAL CARTOGRAPHIC ENDEAVORS

Chair: Dennis L. White, U.S. Geological Survey

THE GEOGRAPHIC NAMES INFORMATION SYSTEM
CARTOGRAPHIC APPLICATIONS

Roger L. Payne, U.S. Geological Survey

THE MATURATION OF THE COUNTY WISCONSIN
CARTOGRAPHIC SERIESChristine Reinhard, Wisconsin State
Cartographer's OfficeMARITIME LIMITS ON NATIONAL OCEAN SERVICE
NAUTICAL CHARTS

Charles E. Harrington, NOS

THE AERONAUTICAL CHART AUTOMATION PROJECT DATA BASE
Russell A. Hoover, NOS

12:30 p.m. - 1:30 p.m.LUNCH

SATURDAY, OCTOBER 18

1:30 p.m. - 4:00 p.m.

NACIS COMMITTEE MEETINGS

TEMPLE PARLOR
4th Floor

o 1987 NACIS VII Planning Committee
Ronald Bolton

HANCOCK PARLOR
4th Floor

o Educational Committee
Paul S. Anderson

1:30 - 3:00 p.m.

CARTOGRAPHIC LABORATORY WORKSHOP

WHARTON ROOMS

Organizer: James K. Anderson Jr., Florida State University

7:30 p.m. -

ANNUAL BANQUET

GRAND BALLROOM

o NACIS/IMDA BANQUET

BANQUET SPEAKER

Dr. Richard Randall
Secretary of the Board on Geographic Names

RECEPTION AND CASH BAR

Preceding and Immediately Following Banquet

ABSTRACTS

OPENING SESSION - SALON A

7:30 - 9:00 a.m., Wednesday, October 15

- o Barbara Bond
British Liaison Officer
U.S. Defense Mapping Agency

Barbara Bond is a Principal in the UK, Ministry of Defense, Directorate of Military Survey. She is a graduate geographer who specialized in cartography. Throughout her professional career in Military Survey she held a variety of posts in map production, liaison, map library, and research areas, and is currently the British Liaison Officer (Survey) with U.S. Defense Mapping Agency. She has served on the council of the British Cartographic Society and is a Fellow of the Royal Geographical Society.

Keynote Address: Cartographic Intrigue and Curiosity: The Story of M19's Production of Escape and Evasion Plans on Silk, 1939-45, and the Personal Contribution of John Bartholomew.

There is a historical significance of military maps on silk for escape and evasion purposes. During a period of World War II, M19 engaged in the covert production of escape plans, many on silk. These plans became an important accessory in their mission to aid Allied Forces escape from occupied areas. John Bartholomew, International Map Publisher, had a personal involvement.

PAPER SESSION - MAPS AND WAYFINDING

WHARTON ROOMS

8:45 - 10:30 a.m., Thursday, October 16

- o Alan M. MacEachren
Associate Professor
Department of Geography
The Pennsylvania State University

"STRIP FORMAT TRAVEL MAPS"

Strip Format Maps have been used as an aid in travel throughout recorded history. In spite of their continued use; however, cartographers have given little attention to this unique solution to the problem of wayfinding. The purpose of this paper is to present an overview of the role of strip format maps in land travel, from both a historical and a contemporary perspective.

Particular emphasis is placed on the range in abstractness, with which strip maps represent geographic reality, the contrast in kinds of geographic information provided by strip travel maps versus regional highway maps, and what strip maps popularity at various points in history tells us about changes in attitudes toward our means of travel. The role of strip maps, as a modern navigational aid is also considered along with questions that must be addressed to determine the applicability of strip maps to various kinds of spatial problem solving.

The popularity of strip format maps for land travel is demonstrated to be somewhat cyclical. Cycles of popularity correspond to certain driving forces and attitudes toward travel in different parts of the world at different times. Three factors that stand out historically are: (1) adequate roads for frequent travel, (2) the desire and ability to travel by large numbers of people, and (3) restrictions on travel, such as limited route selection, or a limited set of origins and destinations. Three situations considered that fit these criterias are; medieval religious pilgrimages using roads previously constructed by the Romans, the development of the Post Road System in 17th and 18th Century England, and its use for passenger travel, and the more recent Interstate Highway System for automobile travel in the U.S. In all cases, strip format maps are found to be common. In addition to considering factors leading to strip maps use for wayfinding, the role of strip maps in learning the environment traveled through is addressed.

o Jeremy Crampton
Graduate Assistant
Department of Geography
The Pennsylvania State University

"SKILLED AND UNSKILLED WAYFINDING FOR AN UNFAMILIAR ENVIRONMENT"

Although the orienteering map is not widely discussed in the cartographic literature, such maps are extremely interesting for what they have to reveal about human spatial expertise and understanding of maps. This is because of the specialized nature of the map and the fact that there has to be extensive experience with them before they can be used properly. Although orienteering maps are developed out of the more familiar medium-scale general topographic maps, it takes time to achieve expertise in understanding them. Novice users do not have automatic access to this expertise. This study, which is part of a larger study of wayfinding and spatial problem solving, begins with an introduction to orienteering maps and their use in the sport of orienteering. Symbolology and a brief history of the maps are discussed, as well as the purpose of the map--to show runnability of terrain--in orienteering. Discussed next are some of the results from a study involving expert and novice wayfinders in a novel environment ("Project Wayfinder").

Seven experts and eight novices were used in all; the experts were orienteers who had competed at elite top level events. Novices were males, who had little or no particular experience with maps or geography, and had ever done any orienteering. All subjects completed a simulated wayfinding task using an orienteering map and its legend. Subjects were instructed to "think aloud" (TA), as they imagined themselves in the terrain moving from point to point. These TA protocols were coded for content analysis according to psychological theory. The results, along with others from this study, show quite marked differences between expert and novice spatial problem solving. The differences and their relation to existing theories of cognitive processes are discussed.

o Donald F. Cooke
Chairman
Geographic Data Technology, Inc.

"DIGITAL MAPS FOR LAND VEHICLE LOCATION AND NAVIGATIONS RESOURCES AND STANDARDS"

Most computerized location and navigation systems require access to a digitized map database in order to function effectively. Projected markets for computerized location, tracking, routing, dispatching, and navigation systems all require a nationwide digital map at a reasonable cost.

Despite multi-million dollar federal map digitizing projects like the Census Bureau's TIGER and DIME programs and USGS, DLG program, there is not at present nor, will there be in the near future a cache of public sector digital maps suitable for these applications.

To exacerbate the difficulties of system designers, there is no agreed upon standard for creation or distribution of digital map databases.

This paper addresses the standards issue from a pragmatic and practical point of view, focusing on probable availability of various governmental paper, digital maps, and integrating information from formal and defacto standards efforts in Europe, Japan, and the United States. This section takes into account characteristics of location technology, likely to be employed and the demands of various applications.

In addition, a descriptive inventory of available and evolving digital map bases is presented and projected into the near future. This projection covers both government and commercial map digitizing programs.

- o Linda M. Hoehn
Physical Scientist
U.S. Army Engineer Topographic Laboratories

"ROUTE PLANNING CAPABILITIES OF THE AUTONOMOUS LAND VEHICLE"

In October 1983, the Defense Advanced Research Projects Agency (DARPA) initiated its Strategic Computing Program. This program is devoted to developing the next generation of computers and machine intelligence. Within this program, the Autonomous Land Vehicle (ALV) Project focuses on the development and demonstration of increasingly sophisticated autonomous land navigation capabilities. In order to achieve the ALV's milestone goals, which progress from autonomous road following to cross-country movement, the system must plan routes, execute the generated plan, and navigate around obstacles. The mission scenario of the ALV demonstrates the systematic nature of the operations required for autonomous navigation. While implementing the mission scenario, the vehicle must integrate its position, the location of the planned route, and the associated terrain data, with the imaging sensor data. This presentation provides a brief discourse of the methods and techniques that will be employed by the Autonomous Land Vehicle to accomplish these advanced route planning capabilities.

PAPER SESSION - GENERAL

WHARTON ROOMS

10:45 a.m. - 12:30 p.m., Thursday, October 16

- o Ronald M. Bolton
National Oceanic and Atmospheric Administration
National Ocean Service

"IMPLEMENTATION OF NORTH AMERICAN DATUM OF 1983 INTO THE NOS CHARTING PROGRAM"

The Aeronautical Charting Division (ACD) and the Nautical Charting Division (NCD) of the National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), jointly publish approximately 9,140 charts and 26 publications in support of recreational, military, and commercial aviation and marine navigation. The area of responsibility encompasses primarily the United States and possessions, in addition to portions of the free world, from the United States, west to the Philippines, southwest to Australia, north to Greenland, south to Argentina, and east to Eastern Europe.

The conversion of aeronautical and nautical products to the North American Datum of 1983 (NAD83) will require a tremendous cartographic and ADP effort by a currently heavily strained cartographic system. In addition to the conversion itself, considerable resources will have to be expended to educate the users on the impact of the change and how to apply it, and protracted coordination effort between the government mapping, charting and geodetic community, and the general public must be effected. This paper discusses the problems and considerations that must be addressed before an effective conversion plan can be implemented.

- o Thomas Patterson
Cartographic Lab. Manager
Department of Geography
University of Utah

"RELIEF SHADING" (no abstract)

- o Russell A. Hoover
National Oceanic and Atmospheric Administration
National Ocean Service

"USGS/DEM SHADED RELIEF DATA FOR NOS ALASKA VISUAL AERONAUTICAL CHART PRODUCTS"

Successful completion of a joint USGS/NOS pilot project in May, 1985, using 1:250,000-scale DEM data, covering a small portion of the Los Angeles Sectional Aeronautical Chart, confirmed that the USGS DEM data and the IDIMS software was capable of producing shaded relief of the quality and cartographic integrity necessary for aeronautical charting. It was determined at that time, that the next step would be to generate the digital shaded relief for an entire sectional aeronautical chart.

The area selected was the 100,000 square miles covered by NOS, Anchorage, Alaska Sectional Chart. This paper describes the joint effort by the USGS, EROS Data Center, Technique Development and Application Branch, and the NOS Aeronautical Charting Division to produce a production quality, press-ready shaded relief negative. Procedures developed during this effort will become the standard for future automated generation of this costly, manually depicted chart overlay.

SPECIAL PAPER SESSION - INTER-AMERICAN CARTOGRAPHIC INFORMATION

WHARTON ROOMS

1:30 -3:00 p.m., Thursday, October 16

- o Diana Huizar Rivera
Map Librarian
Michigan State University

"INSTITUTIONAL COLLECTIONS OF LATIN AMERICAN CARTOGRAPHIC MATERIALS"
(no abstract)

- o Bill Stewart
University of Michigan

"ACQUISITION OF CENTRAL AND SOUTH AMERICAN MATERIALS"
(no abstract)

- o Hull Mclean

"LATIN AMERICAN MAPPING"
(no abstract)

PAPER SESSION - CARTOGRAPHIC EDUCATION

WHARTON ROOMS

8:45 - 11:15 a.m., Friday, October 17

- o Paul S. Anderson
Department of Geography-Geology
Illinois State University

"APPLICATIONS OF THE MDT TESTING METHOD FOR CARTOGRAPHIC INFORMATION
EDUCATION"

The MULTI-DIGIT (MDT) method of machine-scored educational testing increases academic rigor, while facilitating question writing and test scoring. By using lists of terms in an alphabetized "answer blank" of up to 999 numbered responses, the MDT innovation offers a computer-scored equivalent of "fill-in-the-blank" questions. Furthermore, any numerical answer, such as library call numbers or measurements from maps, can be directly marked on the scannable answer sheet. All previously existing scannable question types are still compatible with the MDT features. The paper describes appropriate applications for cartographic information education.

- o John R. Hunt
The Open University
Milton Keynes, England

"THE ROLE OF MAPS AND GRAPHIC IN TEACHING AT A DISTANCE"

This paper describes the main aspects of graphic communications, as used within the Open University distance teaching system. The paper looks at how the teaching system operates, the different media used, the type of student, and the technologies and resources available. A critical assessment is made of the graphic component (emphases on cartographic) of the published correspondence texts and associated supplementary materials and tasks, supplied to and required of the students.

- o Dr. Henry W. Castner
Department of Geography
Queen's University
Kingston, Ontario

"A PERCEPTUAL APPROACH TO GEOGRAPHY THROUGH MAPPING"

This paper will propose an approach for geographic education in the schools which provides an interactive, yet analytic way of examining the fundamental concepts of geographic thinking. Starting with our perception of the visual world, it is possible to relate the kinds of discriminations we make in looking at an image or a landscape, and to the kinds of intellectual identifications we make in geographic description and classification.

Central to this approach is the use of mapping activities, in which the term "mapping" involves the graphic expression of particular aspects of spatial relationships, especially the many neglected non-Euclidean ones, in a problem solving context (as opposed to simply a descriptive one). Thus it is a process approach to geographic thinking and cartographic information, not a study of maps as objects of study.

- o Dr. Donald J. Zeigler
Old Dominion University

"MAPS ON THE LANDSCAPE: CARTOGRAPHIC SYMBOLS IN THE ENVIROMENTAL ARCHIVE"

Maps have been liberated from their atlas abodes to become ever more important in the place-making activities of the twentieth century and ever more conspicuous components of the cultural landscape. They may be found in a wide variety of places from tourist sites and college campuses, to buildings and billboards, to flags and monuments.

Slides from North American and Europe will be used to illustrate the diversity of the cartographic landscape. The presentation will revolve around the basic models of cartographic communication, as they help us to understand the messages that maps on the landscape are trying to send to people of all ages. These maps often communicate more than the spatial information that cartographers think about. Sometimes by virtue of their stylized design, sometimes by virtue of the areas they portray, and sometimes by virtue of the sites where they are found, these maps may be seen as cultural symbols stored in the environmental archive. Many aspects of these maps may be interpreted as symbols of rebellion against placelessness, of competitive enterprise, of public purpose, of hospitality and friendship, of global destiny or responsibility, of evolving post-industrial society, of high-amenity environments, of regional distinction, and of civic boosterism. They serve to arouse geographic consciousness, they figure into the development of our mental maps and images of places, they provide necessary information at critical moments in our use of the environment, and they evidence the affection with which the public views.

o Emma A. Kowalenko
 Editorial Offices
 Encyclopaedia Britannica, Inc.

"THE CURIOUS INTELLIGENT LAY PERSON WITH A MATURE INTELLECT"

As a reference publisher, Encyclopaedia Britannica has the public to please and a long-standing tradition of quality to maintain. We do not receive specifications for maps from individual clients. We must therefore, set our own criteria and make assumptions regarding the best means of informing our readers via maps. This year's theme of MAPS AND CHARTS FOR ALL AGES is quite fitting for the concerns that we have in conveying a message cartographically at Encyclopaedia Britannica.

We carefully tailor our maps for our readership. The type and level of information and complexity vary from our MACROPAEDIA, to our MICROPAEDIA, to our COMPTON'S, to our YEARBOOK OF THE YEAR. In the presentation, I will concentrate on our MACROPAEDIA which is geared toward the "curious, intelligent lay person with a mature intellect".

The maps produced for the MACROPAEDIA can essentially be divided into two main categories: Complements to our text or Supplements to our text. Complements include our Historical, Science, and other Thematic maps. Our Country or Political-Physical maps fall into the supplements category while our City Maps are somewhere between the two.

SPECIAL PANEL DISCUSSION - NATIONAL STANDARD CARTOGRAPHIC NUMBER

WHARTON ROOMS

1:00 - 2:45 p.m., Friday, October 17

- o John D. Stephens
Department of Geography
University of Miami

PAPER SESSION - HISTORICAL AND FUTURISTIC MAPPING

WHARTON ROOMS

8:45 - 10:30 a.m., Saturday, October 18

- o Donald M. Hoskins
Pennsylvania Acting State Geologist
Bureau of Topographic and Geologic Survey
- o Sandra Blust
Pennsylvania Librarian
Bureau of Topographic and Geologic Survey

"WILLIAM DARBY'S 1824 MAPS: FIRST OF PENNSYLVANIA'S PAGE SIZE MAPS"

In 1824, William Darby, a self-taught geographer, surveyor and historian, published the first and only issues of a monthly periodical, the Geographical, Historical and Statistical Repository. Part 1 included several small "page-size" maps, folded and bound with the octavo sized text, two of which portrayed the political boundaries, topography and geology of Pennsylvania.

To prepare for the publication, Darby spent nearly 15-months traveling to nearly all of the (then) 51 counties of Pennsylvania. The maps and descriptions of the rivers and mountain he published, thus were based on his own observations.

For unexplained reasons, Darby did not use the topography portrayed on the 1822 edition of the Melish map of Pennsylvania. The Melish map, as did the Howell map of 1792, portrayed many of the linear mountain ridges of Pennsylvania in reasonably correct position. Darby's map is more fanciful in the location and extent of Pennsylvania's mountain ridges.

Darby's distrust of the Melish map may have resulted from other difficulties. Melish had published Darby's Map and Report of Louisiana, and later incorporated the information without permission or credit, on the 1816 Melish map of the United States of America.

Darby should be credited with being a forerunner of what is now a common cartographic practice, "page-size" maps designed to give concise overviews. As such, he may have been the first to create a type of State map useable for all ages.

o Alan A. DeLucia
Intergraph Corporation

"THE FUTURE IS NOW"

Modern communication systems have changed the geometry (size and shape) of the world. The so-called "information float" has been dramatically collapsed and thus the degree of separation between people and places is now only a small fraction of what it once was. The industrial age is rapidly turning into the information age.

Geographically and cartographically the surface view of the Earth symbolized by rectangular/cylindrical based world maps and the spatial relationships derived as a consequence of seeing that world view no longer represent global reality. Earth views from an aerial perspective, made popular 40-years ago by Richard Harrison and creative cartographic designers, have all but disappeared from the repertoire of atlas and map publishers in the commercial market.

Maps showing the Earth from the vantage point of space have not yet been provided in any significant way by those publishing maps for the general public. Except for the interesting, but limited efforts of some journalistic cartographers, the cartographic forms of portrayal of planet Earth at global scales are behind the times. They do not reflect the fact that modern technology has made traditional concepts (and mental images) of time and space inaccurate or that the functional separation between points on the Earth has been reduced to a minimum.

The challenge for cartography NOW to produce maps that reflect the acceleration of progress and technology is not being met. Some examples of alternative forms of global map displays to help meet his challenge of realistic global mapping in the space-electronic high tech age we live in are presented for your consideration and thoughtful contemplation.

o Christopher G. Heivly
Chief of Cartographic Applications
Office of Geographer
Department of State

"A MICRO-COMPUTER FRAMEWORK FOR WORLD-WIDE MAPPING"

The Office of the Geographer is responsible for producing maps for the Department of State at various scales and projections. In the past, this has been achieved using traditional cartographic methods. For the past three months, a micro-computer approach has been implemented which will aid the traditional cartographers in map production, and greatly enhance the research capabilities of the department.

The core of this micro-computer system is two IBM-AT's complete with color graphics boards, digitizer, plotters, and selected canned software. The interfacing of these devices, along with newly designed software and newly purchased hardware will be discussed at length. These new features include the use of World Data Bank 2 and the CAM mapping software.

PAPER SESSION - SPECIAL CARTOGRAPHIC ENDEAVORS

WHARTON ROOMS

10:45 - 12:30 p.m., Saturday, October 18

- o Roger L. Payne
Chief, Geographic Names Information Center
U.S. Geological Survey

"THE GEOGRAPHIC NAMES INFORMATION SYSTEM CARTOGRAPHIC APPLICATIONS"

The Geographic Names Information System (GNIS) was developed by the U.S. Geological Survey to meet requirements for a national names depository. The goal is to provide basic information for named features found in federal, state, and other sources, including historical material. GNIS is a multi-purpose toponymic tool that has specific and general applications to the cartographic community. The data are currently used in cartographic applications and research is being conducted for future specific applications.

- o Christine Reinhard
Assistant State Cartographer
Wisconsin State Cartographer's Office

"THE MATURATION OF THE COUNTY WISCONSIN CARTOGRAPHIC CATALOG SERIES"

As the Wisconsin County Cartographic Catalog series enters its tenth year of publication, it also enters the world of automation. The evolution of the series is apparent when early examples of catalog pages are compared to current ones. Years of trial and error, plus input from a diverse group of part-time employees, have resulted in a well organized, functional, and highly useable publication. Much of the series' clarity on accuracy is due to a comprehensive specifications book which has painstakingly been developed by the editing staff. While the specifications are tailored to the Wisconsin county catalog product, other states can generically apply them to their own situations. The production techniques are simple and inexpensive, making this type of information distribution economically feasible. Now that the cut-and-paste cartographic mechanics have been locked down, the State Cartographer's Office is devising a computer version to begin a revision cycle.

This series is unique in the United States. Wisconsin planners, engineers, and teachers, as well as city, county, and State officials find the catalogs to be convenient and valuable resources for cartographic information. The state Cartographer's Office will continue to support and improve these useful reference tools.

- o Charles E. Harrington
Nautical Charting Division
Charting and Geodetic Services
National Ocean Service

"MARITIME LIMITS ON NATIONAL OCEAN SERVICE NAUTICAL CHARTS"

The 1985 Geneva Convention on the Territorial Sea and the Contiguous Zone states that the normal baseline for measuring the breadth of the territorial sea is the low waterline along the coast as marked on large-scale charts, officially recognized by the coastal state. The National Ocean Service (NOS) is the lead agency for the portrayal of maritime limits of the United States because of its responsibility to chart the nation's coastal waters. Since 1976, NOS has been requested to show various maritime limits on its regular issue nautical charts. The paper will discuss the methods used in constructing the various maritime limits, the problems involved, the purpose of each of the limits, and how the limits are maintained on NOS nautical charts.

- o Russell A. Hoover
National Oceanic and Atmospheric Administration
National Ocean Service

"THE AERONAUTICAL CHART AUTOMATION PROJECT DATABASE CONCEPT"

The Aeronautical Charting Division (ACD), a major element of the National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), has begun implementation of the Aeronautical Chart Automated Production (ACAP) system. Full implementation of this system will yield not only a decrease in production time to maintain current chart products, but will provide for rapid response to new requirements, validation, and maintenance of aeronautical data, and automation of many critical review functions. The system will ultimately provide press-plate ready positives or negatives, thus drastically reducing manual negative engraving and photo-mechanical processing costs.

The ACAP system concept is based upon a cartographically validated chart-independent database and cartographically created chart-dependent database, both hardware independent. The chart independent data in geographic coordinates is accepted on a real-time, on-line basis through communications with the Federal Aviation Administration (FAA) and the Defense Mapping Agency (DMA), and offline through manual entry or magnetic tape. Both machine and human edit is performed and update and history files are created before the data is applied.

The chart dependent data represents the "foundation, or blueprint" of the chart product and remains stable, requiring update only when new products are added or when major changes are made. This ACAP dual database concept has been thoroughly tested and has proved itself through over five years of parallel and interactive operations with the normal ACD production process. At the present time the ACAP system is supporting two graphic terminals, over forty alphanumeric terminals, and three precision plotters.

This paper discusses the ACAP system concept, and the unique approaches taken to make this relational database system work operationally.

NACIS-IMDA BANQUET

GRAND BALLROOM

7:30 p.m. -

Saturday, October 18

- o Dr. Richard Randall
Secretary
Board of Geographic Names

CONFERENCE NOTES

REGISTRATION HOURS

The registration desk is located in the foyer area of the Hilton of Philadelphia. Registration hours are:

Wednesday, October 15	1:00 p.m. - 5:00 p.m.
Thursday, October 16	8:00 a.m. - 5:00 p.m.
Friday, October 17	8:00 a.m. - 5:00 p.m.
Saturday, October 18	8:00 a.m. - 1:00 p.m.

The registration fee for NACIS VI Conference includes:

- Conference folder
- Conference program with abstracts
- Admission to NACIS and IMDA exhibits
- Admission to all formal sessions, including paper and poster sessions
- Field trips
- Opening keynote address
- Annual banquet with speaker
- Receptions

Individuals are responsible for their own expenses for the cash bars. Registration for field trips will be handled at the registration desk.

EXHIBITS PROGRAM

The exhibits will be set up in the Hotel's Salon B, C, D, and the Assembly room. The exhibits are a joint effort by NACIS and IMDA and will be open as follows:

Thursday, October 16	9:30 a.m. - 5:00 p.m.
Friday, October 17	9:30 a.m. - 5:00 p.m.
Saturday, October 18	9:00 a.m. - 1:00 p.m.

1986 NACIS VI EXHIBITORS

Organizer: Howard Diamond, NOAA/NOS

DEFENSE MAPPING AGENCY

U.S. GEOLOGICAL SURVEY

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

U.S. BUREAU OF CENSUS

PIKES PEAK LITHOGRAPHY

EOSAT

ERIM

FIELD TRIPS

NACIS has three field trips planned for the NACIS VI Conference

- o Temple University Cartographic Lab - Thursday, October 16
- o Philadelphia Walking Tour - Thursday, October 16
- o Philadelphia Free Library - Saturday, October 18

Please check your program, or at the registration desk for times and transportation arrangements.

IMDA PRELIMINARY PROGRAM

WED. OCT 15	9:00am-12:00pm	IMDA Board Meeting
	9:00am-5:00pm	Exhibit setup
	1:00pm-5:00pm	Registration
	1:45pm-5:00pm	Field Trip: Spherical Concepts, manufacturer of handcrafted acrylic globes - Optional event
	7:30pm	NACIS Opening Presentation - Barbara Bond, Keynote Address: World War II Escape & Evasion Maps
THU. OCT 16	8:00am-5:00pm	Registration
	9:00am-10:00am	Workshop: Sidelines: Reproductions of Antique Maps - Ed Patton, Alfred B. Patton, Inc.
	9:30am-5:00pm	Trade Show Exhibits Open
	12:00pm-1:30pm	Lunch break
	1:30pm-2:30pm	Workshop: Products and Services - Charles McKeown, Government Printing Office
	3:00pm-4:00pm	Workshop: Fundamentals of Map Finishing - Wayne Dunne, New Orleans Map Co.
FRI. OCT 17	6:00pm-8:00pm	IMDA/NACIS Reception
	8:00am-5:00pm	Registration
	9:00am-10:00am	Workshop: Sales Maps & Software, A Breakthrough - Lew Andrews, LMA Enterprises
	10:30am-11:30am	Workshop: Merchandising at Trade Shows - Tom Hennings, Canada Map Co.
	9:30am-5:00pm	Exhibits open
	12:00pm-1:30pm	Lunch break
	1:30pm-2:30pm	Workshop: Thematic Maps and Atlases - Joe Sullivan, Hammond, Inc.
	3:00pm-5:00pm	Field Trip: Panoramic Studios, custom raised-relief map maker - Optional event
SAT. OCT 18	6:00pm	IMDA/NACIS Riverfront Dinner Theater: "How to Succeed in Business Without Really Trying" - Optional event
	8:00am-1:00pm	Registration
	9:00am-10:00am	Workshop: Finding and Training Sales Clerks - Jerry Jones, Rand McNally & Co.
	9:00am-1:00pm	Exhibits open
	1:00pm-3:00pm	Exhibit breakdown
	1:30pm-4:00pm	Annual IMDABusiness Meeting followed by IMDA Board of Directors Meeting
	6:30pm-7:30pm	IMDA/NACIS Cocktail Reception - Cash Bar
	7:30pm	IMDA/NACIS Banquet - Speaker: Dr. Richard Randall, Secretary, Board on Geographic Names

NOTES

NOTES

NACIS VI CONFERENCE COMMITTEE

Dennis L. White <i>Conference and Program Director</i>	U.S. Geological Survey
Elaine F. Bosowski <i>Local Arrangements Director</i>	Villanova University
Norman Strasma <i>Registration Arrangements</i>	IMDA - Executive Secretary
Howard J. Diamond <i>Exhibits Director</i>	NOAA/NOS
Donna Schenstrom <i>Staff Cartographer Coordinator</i>	University of Wisconsin-Milwaukee
James K. Anderson <i>State Affiliate Coordinator</i>	Florida State University
Ronald M. Bottom <i>IMDA Liaison</i>	NOAA/NOS