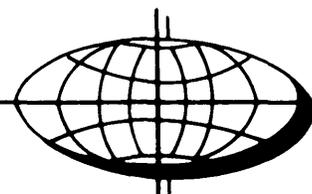


NATIONAL
CARTOGRAPHIC
INFORMATION
CENTER



NEWSLETTER

U.S. DEPARTMENT OF THE INTERIOR/GEOLOGICAL SURVEY
WINTER/SPRING 1976

National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, Virginia 22092
703-860-6045

Winter/Spring 1976

National Cartographic
Information Center Newsletter No. 4

Last week, the editor of this publication was told to start signing the introduction. Something to do with credit given for work done. We look at it in the unfortunate light of accountability; our days under the bushel of anonymity are over.

Speaking of accountability, it's about time we gave some recognition to the Newsletter's unknowing progenitor, John Wright, of the British Directorate of Overseas Surveys. Editorially and stylistically, the NCIC Newsletter owes him a large debt.

Last month we received a suggestion from a reader that the Newsletter begin consistently listing prices for new products. In the publishing business, however, there is an infallible law of inflation--prices increase as soon as they appear in print. We do try to quote exact prices where possible, and as our reader suggested, ballpark figures when we have to. In nearly all cases, additional information is available either by contacting the addresses listed in the article or indexed in the back or by calling NCIC's User Services Section.

Numerous bits and pieces of information make up the bulk of this issue. Among them are the possibility of the Geological Survey issuing readable indexes to available topographic maps, the development of an NCIC classification system for U.S. cartographic data, and information on the publication of prototype topographic-bathymetric maps.

Lastly, here is our quarterly solicitation for suggestions, comments, criticism, notes, and information for publication. Call it your bicentennial contribution to participatory democracy.

N.B. Faries

INTERAGENCY NEWS

U.S. Geological Survey Indexing Committee

A friend of ours is the manager of a camping-goods store that stocks USGS topographic maps between the sleeping bags and down parkas. He frequently complains that his customers have difficulty under the best of circumstances deciphering the index guides to the maps and that when hikers crowd around the indexes posted on the wall, mild profanity fills the air.

A joint committee of representatives from the Survey's Topographic and Publications Divisions is trying to alleviate the problem by revamping the indexes and compiling descriptive catalogs for USGS topographic maps and related products.

Currently, each State index contains a base map showing stream and river networks, county names, railroads, and innumerable villages, towns, and cities all printed in a pastel green that fades nicely into a white background. The green base map is overprinted with 7.5- and 15-minute quadrangle outlines, and the name of each quadrangle map, its survey date, revision date, photorevision date, and up to four additional items of cartographic information. The back of the index describes other types of Topographic Division maps and gives instructions for ordering.

Besides poor readability, there are several economic disadvantages in the present system. Index maps must be revised almost yearly. Each revision requires eight months of cartographic, photographic, and printing work and costs \$5,000. And not all of the map products available are listed on the indexes. As an additional difficulty, 40 different paper sizes resulting in 11 folded index sizes are now being used to print the indexes.

The committee has proposed a simplified index map for each State, showing only the basic information needed for orientation and listing only the map quadrangle names. Two catalogs for each State, describing all the maps and mapping data produced by the Topographic Division, will accompany each State index. The map catalog will include a complete list of published maps with dates of publication and revision. This catalog will be revised frequently, with monthly updates printed in the Survey's New Publications List. The mapping data catalog will describe the aerial photographs, unpublished orthophotoquads, geodetic control, advance map copies, map separates, digital terrain tapes, etc. available from NCIC and other Topographic Division offices. Both catalogs will have detachable order forms, and in the case of large orders the map catalog itself can be used as an order form. The State of Virginia has been selected for a trial of the new information system. The new index for the State is nearing completion and, along with the catalogs, is scheduled for publication during the summer.

An in-depth study of user reactions and distribution problems will be made then to guide the modifications of other indexes

Our personal measure of success for the new system will be to see if the air around the camping goods store clears.

Geography and Map Division of the Library of Congress--exhibit news

The current exhibit at the Division reading room in Alexandria commemorates the 100th anniversary of the Centennial Exposition in Philadelphia and 19th and 20th century expositions in general. Marking the centennial celebration of American independence, the exhibit is a highly original concept for celebrating the bicentennial. Composed of 40 maps, it shows Philadelphia festivities from numerous angles and altitudes, along with maps of other expositions and world fairs held since then.

After the Centennial Exhibit 40 to 50 maps of the American Revolution, contemporary to 1776, will be displayed in the reading room from April 1 through July 30. The battlefield and scattered theater-of-war maps illustrate the colonies' military positions or lack thereof.

National Geodetic Data Base -- Chapter II

In the Summer 1975 Newsletter, we wrote optimistically about the impending merger of U.S. Geological Survey (USGS) and National Ocean and Atmospheric Administration (NOAA) geodetic control information to form a National Geodetic Data Base. Reality, as usual, has been a bit slow in coming to pass, but we can now report that the program is finally up and moving slowly. Specifically, the USGS Mapping Centers have been given the green light to proceed with preparation of horizontal geodetic data for transfer to NOAA. Action on vertical control data has been deferred pending more explicit guidelines from NOAA's National Geodetic Survey (NGS).

Observations and descriptions for about 40,000 horizontal control stations on file in four field Mapping Centers will be extracted and digitized. The effort is slated for completion in time for the data to lend support to the planned readjustment of the National Geodetic Control Network.

The actual flow of horizontal control data will probably not begin until after USGS geodetic experts gather at the Survey's National Center to coordinate their efforts and review pending specifications from NGS. This workshop, the second on the subject, is tentatively set for May 1976.

Don Arries
Cartographer, NCIC

EROS Data Center new computer system

A recent and major new development at NCIC's principal aerial photograph affiliate, the Earth Resources Observation Systems Data Center (EDC), has been the installation of a new Burroughs B6700 computer system. It is used to maintain the imagery data base and answer user inquiries about aerial and space imagery held at EDC. It also processes orders from remote sites, including the USGS Mapping Centers, and provides internal production control and management reporting.

The Burroughs system, installed in September 1975, replaced a much smaller and heavily overloaded computer. New software (programming) has been designed for the system, and will be phased in over five years. The new software will allow the growth of the size of the data base and the number of user terminals. Phase one, completed in early January, was a direct conversion of programs from the old computer system to the new. The conversion enabled users to continue using the same magnetic card selectric typewriter terminals (MCST) with the same input formats and output print-outs, while allowing growth of the data base and immediate connection with more user terminals.

Phase two, now underway, provides a completely new user input system as well as a new and more flexible imagery data base (Main Imagery File). The phase two data base will allow entry of different parameters for each type of remotely sensed imagery, for example, scale and geographic ranges. Cathode-ray-tube (CRT) terminals will be installed at many user locations. The new terminals will allow a much faster computer response time with inquiry results summarized on a screen, a best-scene selection, a built-in gazetteer, and an automatic conversion from inquiry to order entry.

The new Burroughs computer will also contain a fully automatic accounting system, which can be used to centralize accounting for aerial photographs and space imagery ordered from any organization on the terminal network. Later phases will provide in-house production control systems that will help EDC fill orders more rapidly.

Bert Horsted
M. Moralis
Systems Specialists
EROS Data Center

NCIC NEWS

First regional APSRS workshop

NCIC's first regional workshop on the Aerial Photography Summary Record

System (APSRs) was held in Menlo Park, Calif., January 27 and 28. APSRS was developed to quickly and systematically index a vast store of available and planned aerial photographs. The system has been automated to take advantage of the memory and speed of computers allowing rapid processing and display of aerial photographic information. The system contains enough descriptive data for each photograph to enable users to know not only who's on first but what's available from where.

The Western Mapping Center sponsored the January workshop to train interested users in the intricacies of APSRS. Participants learned how to code aerial photographs for inclusion in the system, retrieve information, and explore the system's capabilities. Representatives from the Bonneville Power Administration, Corps of Engineers, Bureau of Land Management, U.S. Forest Service, Bureau of Reclamation, and NASA-Ames attended the workshop. Two State offices from California and Nevada sent representatives, and a handful of private business and academic groups came as well.

Those attending were asked to send in suggestions for future workshops. For information on workshops to be held in other parts of the country, contact our Data Acquisitions Section.

Tom Burger
Chief, Data Acquisitions
NCIC

Classification system for cartographic data

One of NCIC's more interesting projects lately has been the initial development of a practical (for ourselves and our cooperators) classification guide for cartographic data. The guide will serve as a full definition of the types of cartographic data that NCIC is concerned with and as a means of organizing information about the data. Most classification systems are organized geographically, but NCIC requires a system that also considers the volume and nature of inquiries we receive.

Without a classification framework, similar products are invariably described in different ways by different people with inevitable duplication and confusion. The problem is particularly acute for NCIC since we hope to have data input from many different cartographic organizations.

As we've said, this classification system is our first attempt. We have raided several existing schemes for ideas, including those of the Defense Mapping Agency, the Office of Management and Budget, and the USGS

National Atlas. We are certainly open to further suggestions. If you have specific ideas for changes or improvements, contact the Office of the Chief, National Cartographic Information Center.

J.R. Swinnerton
Chief, NCIC

NCIC Proposed Classification System for Cartographic Data

A. Aerial and space imagery

Aerial imagery
(electronic origin)
Aerial photographs
Space imagery
(electronic origin)
Space photographs
Computer-compatible tapes
of imagery

B. General-purpose maps

National Topographic Series

1:24,000 scale
1:62,500 scale
1:100,000 scale
1:250,000 scale
1:1,000,000 scale

Special base maps

Local project maps
Orthophotomaps and
quadrangles
Urban area maps
County maps
Regional maps
State maps
United States maps
World maps
Polar-region maps
Satellite image maps
Lunar and planetary maps
Other

C. Special-subject maps and charts

Physical

Geophysical maps and charts
Geologic maps
Soil maps
Climate maps
Marine-related maps
Hydrologic and flood-related
maps
Landform maps
Other

Economic

Forestry and vegetation maps
Agriculture maps
Mineral- and energy-resources
maps
Transportation maps
Land-use maps
Utility maps
Other

Sociocultural

Census maps
Other

Administrative

Federal-land maps
State-land maps
Indian-reservation maps
Congressional-district maps
Standard Metropolitan Statis-
tical Area maps
Other

D. Navigation charts

Aeronautical

Visual charts
Instrument charts
Special charts

Nautical

Coastal and Great Lakes charts
Inland river and lake charts

E. Survey records

Cadastral surveys
Geodetic surveys
Engineering and mapping surveys
State and National boundaries

F. Related cartographic data

Atlases and gazetteers
Certified maps and photographs
Literature
Geographic names
Raised-relief maps
Globes
Elevations and distances
Other

G. Digital map and chart data

Same outlines as sections
B, C-D

H. Historical cartographic data

Same outline as sections A-F

NCIC regional centers

The principal office of NCIC is in Reston, Va., but since the Center's beginning, plans have been afoot for developing a national network of regional and State cartographic information units. On the regional level, final staffing plans are underway for converting the Topographic Division's Map and Field Data sections of the Mapping Centers in Virginia, Missouri, Colorado, and California into full-fledged information offices.

The Map and Field Data sections already resemble the anticipated regional NCICs in form and function. Originally organized as depositories and libraries for map-preparation data, the sections have gradually built up thriving sales offices for aerial photographs, advance map manuscripts, map color separates, and some published manuscripts. Unlike the planned regional NCIC offices, the present sections are primarily geared to deal only with USGS Topographic Division products. Little information is maintained or sought about the holdings of other agencies, and applications assistance and data acquisitions are minimal. In the transition each section will be organized into three units--Data Acquisitions, User Services, and Technical Information--with increased responsibilities assigned to each. For more information, the regional NCIC office addresses are listed in the Address Index section on the last two pages of this issue.

NEW PRODUCTS

Experimental maps of Fort Pierce, Florida

The National Ocean Survey, U.S. Geological Survey, and the State of Florida

have collaborated to produce 4 experimental topographic-bathymetric maps of the Ft. Pierce coastal area. USGS provided the topographic and planimetric details for the maps. NOS provided the mean high- and low-water lines and other water data, and Florida's Department of Natural Resources provided field surveying support.

NOAA is issuing one of the maps as a prototype for a 1:10,000-scale series. It shows low-, mean-, and high-water levels compiled from black-and-white aerial photographs. The apparent shoreline is indicated for coastal areas covered by vegetation. The 1:10,000-scale map is intended primarily as source data for selecting base-line points to establish coastal boundaries.

The other three maps were issued by USGS. All three depict approximately the same 61-square-mile (7.5-minute) area using three different mapping techniques. The first is a black-and-white orthophotoquad (a rectified and scaled aerial photograph) with contour lines and bathymetric data. The second is a standard, 6-color line-and-symbol map with bathymetric data. The third map is the most technically and visually interesting--a 4-color orthophotomap, which is essentially a combination of the first 2 maps. The land area is a color-enhanced orthophoto overprinted with contours, a road network, place names, and other natural and manmade features; in addition to bathymetric contour lines, which also appear on the standard topographic map, progressively deeper shades of blue have been added to emphasize increasing water depth.

All dimensions, elevations, and water depths on the maps are metric. The NOAA map has 1-metre topographic contours while the USGS maps have 2-meter basic and 1-metre supplemental contours. All the maps have 1-metre bathymetric contours with 0.5 metre supplements.

These prototypes are similar to another joint NOS-USGS product still in the planning stage--1:250,000-scale topographic maps of the entire U.S. coastal zone. The 1:250,000 maps will, of course, show regional overviews but lack the detailed local views of the 1:24,000 maps.

Only a limited number of the Ft. Pierce maps were printed, but as long as the supply lasts, copies can be obtained without cost from the Geological Survey's Topographic Division. Other sources of information about the experimental maps are the Director's Office at NOAA or the Florida Department of Natural Resources (see Address Index).

50-State U.S. map

The Geological Survey has published a new United States map that depicts all 50 States in their correct location and relative size. Since the admission of Alaska and Hawaii to the Union, cartographers have been faced with the problem of accurately drawing a true-scale map of a country that stretches over an inordinate (as projections go) area of curved space.

For the last 15 years Alaska and Hawaii were either omitted from U.S. maps or else tucked into smaller scale insets. Insets are the most practical method of depiction because they avoid both the distortion that occurs from projecting large areas of the Earth's surface onto two dimensional paper as well as large expanses of ocean and non-U.S. territory. Without insets, the maps are generally too large to be used easily or too small to show many of the cities, rivers, and roads found on most 48-State maps.

The design for the new 50-State map minimizes these difficulties. Distortion of position and perspective is reduced by using a specially computed Lambert conformal projection. The new map is small enough to handle easily yet large enough to show State boundaries, major rivers, a number of cities and towns, main railroads, national parks, interstate and major high ways, and the new Alaska pipeline. The map is published in two scales, 1:6,000,000 (\$2) and 1:10,000,000, (\$1.50).

NEW PUBLICATIONS

Newberry Library cartographic newsletter

Word came the other day that the Newberry Library in Chicago has decided to start a cartographic information newsletter, Mapline. According to editor Patricia Moore, Mapline will carry reports on recent meetings, research notes, publication reviews, collection and exhibit news, light cartographic history, and a calendar of upcoming lectures and conferences. Mapline will be issued quarterly (from our own harried experiences we wish them luck) and tentatively will cover international as well as national cartographic news slanted toward the interests of the private map user and collector. The first issue should be out shortly.

New York State inventory of aerial photography

"The Inventory of Aerial Photography and Other Remotely Sensed Imagery of New York State-1975" is just that. Compiled by the N.Y. Department of Transportation, the inventory comprises information charts for projects since 1968 and for planned flights. The charts list camera focal length, scale, date, film type, area of coverage, purchasing information and where the photographs can be inspected. The inventory is unusually comprehensive, covering holdings of Federal, State and local government, and public utility, and commercial companies.

Divided into four sections, the inventory first describes available and planned photographs for each county. Part two lists multi-county projects, and part three covers small-scale and extended coverage of high-altitude and satellite imagery. Part four is a discussion of site and

corridor photographs with suggestions for obtaining additional information. Some photographic coverage is available for every area in the State and for many areas the inventory shows multiple coverage.

The inventory measures 8.5 by 11 inches, is drilled for ring binders, weighs more we'd care to carry around for light reading (a hefty 116 pages) and costs \$5.

MEETINGS AND CONVENTIONS

In the fall issue we asked for opinions, pro or con, on running listings of international and national cartographic meetings. From the overwhelming reader response (one pro, zero con) and because the editor thinks the information is valuable, it's being kept on for the time being. Listings have been coming in at a fair rate, but we would like to include some State and local meetings. If you know of a meeting that you would like publicized, send us the title, date, and a word or two about its purpose.

Eighth Annual Offshore Technology
Conference

Houston, Texas
May 3-6

IV National Congress of Photogram-
metry, Photointerpretation and
Geodesy

Mexico City, Mexico
May 12-14

Canada Institute of Surveying
Annual Meeting

Winnipeg, Canada
May 19-21

XIII International Congress for
Photogrammetry

Helsinki, Finland
July 11-23

XXIII International Geographical
Congress and VII International
Cartographic Association Confer-
ence

Moscow, USSR
July 28--August 10

International Cartographic Asso-
ciation VIII Technical Conference
and V General Assembly

Moscow, USSR
August 3-10

International Geological Congress

Sydney, Australia
August 16-25

American Society of Photogrammetry
and American Congress on Surveying
Mapping Fall Technical Meeting

Seattle, Washington
September 28 - October 1

Scientific Committee for Antarctic
Research, Meeting of Working Groups
Geodesy and Cartography, Glaciology
and Logistics

Mendoza, Argentina
October 11-16

International Geodetic Symposium on Satellite
Doppler Positioning

New Mexico State Univ.
Las Cruces, New Mexico
October 12-14

VIII U.N. Regional Cartographic Conference
for Asia and the Pacific

Djakarta, Indonesia
POSTPONED

XIV Meeting of Scientific Committee for
Antarctic Research

Mendoza, Argentina
October 18-23

ADDRESS INDEX (by articles)

USGS Topographic Indexing Committee

c/o John McLaurin
NCIC, U.S. Geological Survey
507 National Center
Reston, Virginia 22092

NCIC regional centers

NCIC--Eastern
U.S. Geological Survey
567 National Center
Reston, Virginia
22092

Geography and Map Division--LC

Reading Room
Geography and Map Division
Library of Congress
8455 Pickett Street
Alexandria, Virginia 22312

NCIC--Mid-Continent
U.S. Geological Survey
1400 Independence Road
Rolla, Missouri
65401

EDC new computer system

EROS Data Center
Sioux Falls
South Dakota 57189

NCIC--Rocky Mountain
U.S. Geological Survey
510, Box 25046
Denver Federal Center
Denver, Colorado
80225

APSRs regional workshop

c/o Tom Lauterborn
U.S. Geological Survey
507 National Center
Reston, Virginia 22092

NCIC--Western
U.S. Geological Survey
345 Middlefield Road
Menlo Park, California
94025

NCIC classification system

c/o J.R. Swinnerton
NCIC--U.S. Geological Survey
507 National Center
Reston, Virginia 22092

Fort Pierce maps

Chief, Topographic Div.
U.S. Geological Survey
516 National Center
Reston, Virginia
22092

Fort Pierce maps cont'd

Director, National Ocean Survey
National Oceanic and Atmospheric
Administration
Rockville, Maryland 20852

Florida Department of Natural Resources
Bureau of Coastal and Land Boundaries
Tallahassee, Florida 32304

50-State U.S. map

U.S. Geological Survey
Branch of Distribution
1200 South Eads Street
Arlington, Virginia 22202

or

U.S. Geological Survey
Branch of Distribution
P.O. Box 25046
Federal Center
Denver, Colorado 80225

Newberry Library newsletter

The Editor, Mapline
The Newberry Library
60 West Walton Street
Chicago, Illinois
60610

New York aerial inventory

Map Information Unit
N.Y. State Department of
Transportation
State Campus
Albany, New York 12232