

Mississippi Rolls On; 1785 Record Broken

"We had just taken a deep breath after the March 31st flooding," said a Facilities Engineering worker, April 23, "and now we're working night and day to try to hold back this new crest."

The new crest which reached 43.3 feet was the granddaddy of all recorded flooding along the Mississippi.

The March 31st flood had come within 7 1/2 inches of the building 4 floor level at S. Annex. Monday, April 23, a crest of 41.5 feet was predicted, 1.6 feet over March 31st. It was quite apparent that flooding would take place at the Annex and decisions had to be made rapidly. Before the day was over the flood crest prediction was revised to 43.5 feet.

Contingency plans formulated for evacuation of personnel were

put into operation. Government Service Administration space at 4300 Goodfellow Blvd. was acquired. Contracts were issued to three commercial moving companies to completely relocate the Aeronautical Information Department and portions of the Printing and Distribution Department. A total of 16 vans were used in those moves and the movement of other items from S. Annex to highground areas.

Engineering issued a call for volunteer workers to aid in the sandbagging operations. Response was tremendous. Secretaries, cartographers, lithographers, photographers, illustrators, administrators, and a host of personnel from other host of personnel from other disciplines answered the call.

According to Bob Wolverton of

FE, "Personnel volunteered from every organization in DMAAC. Three eight hour shifts were established working approximately 120 on the first shift, 80 on the second and 60-75 on the third. FE pump crews worked 16 hour shifts throughout the week."

Sandbag levees were reinforced along the eastern edge of the installation and a four foot high levy constructed along the entire 1600 foot length of building 4 near River Des Peres. Additional sandbagging was also done around building one. Pumps were located at strategic points in an effort to pump the seepage water from behind the sandbags.

"We got great cooperation from every government agency we called for assistance," states Maj. Darrell Bittle, director of FE.

Twenty stationary pumps were borrowed from the Veterans Administration hospital at Jefferson Barracks, St. Louis City Fire Department, and Army Corps of Engineers. Some additional equipment was rented from private concerns.

or in the Technical Library. "We're cramped but we'll make it," added Seppelin.

For the Cartography Department most of the move involved the precious reproducible copy. "This was loaded into five vans and moved out of the threatened



Cooperation and hard work key factors. . .
(Photo by Ed Mullen)

Two truck mounted pumps with operators were driven to the Center from Chanute AFB and one from Scott AFB, Ill.

A total of 45 rolls of plastic sheeting had been used by April 27th along with 150,000 sandbags and 2,000 tons of sand. The sandbags came from everywhere—65,000 airlifted by the 913th Tactical Airlift unit (reserve) Willow Grove, Pa. from Defense Supply in Virginia; 25,000 from GSA in Kansas City and some procured locally.

One hundred and twenty pairs of

area," said Harold Bartels, assistant chief of Carto. "A great many of our people helped with the sandbagging efforts, working long hours," said Bartels.

For Logistics their job was to not only help procure the needed emergency equipment but at the same time to keep a watchful eye on the supplies in current warehouse. "In supply, we lifted all stock off the floor," reports Maj. Engles, head of Logistics, "and transferred some items to 2nd Street." The motor pool equipment and personnel were relocated to building 3 at South

Orienteer

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Skylab Ready; Cartographic Support Complete

Man's look at his world—the Skylab program begins May 14th with the launch of an unmanned canister. On May 15th a three man crew will be placed in orbit to link with the canister beginning a three part, eight month, space venture.

Cartographic support of the NASA mission is being provided by DMAAC in the form of hundreds of items ranging from launch recovery

RADM Carnahan To DMA Staff

Rear Admiral Ralph H. Carnahan, USN, has been named Deputy Director of DMA for Plans, Requirements and Technology. The announcement was made public by Lt. Gen. Howard W. Penney, DMA Director.

Until receiving his new assignment, Admiral Carnahan was Special Assistant to the

DMAAC in the form of assignments and assignments to science site graphics for use during the various Skylab experiments.

For DMAAC the launch will culminate almost two and one half years of planning and production in support of the program.

According to NASA, "Man will be taking a long, discerning look at the orb that is his home, measuring it a number of ways and deciding how he can improve life thereon. He will also be probing the Sun, his ultimate source of strength, to an unprecedented extent. And he will be looking inwardly at himself, evaluating his own ability to work and live satisfactorily in space over a long period."

To accomplish its mission, Skylab will be placed in Earth orbit (235 mile altitude from 50 degrees North to 50 degrees South) and will be visited and inhabited by three different crews during an eight-month period. The first crew will remain only 28 days and has the primary task of getting things ready for the remainder of the mission. The launch of the workshop will occur at 1230 CDT on the 14th with the crew launching at 1159 CDT on the 15th. A new crew will be launched in July for a 56 day mission. The final crew begins its 56 day tour in October.

About 270 different scientific and engineering investigations, using 54 different pieces of experimental hardware, will be conducted as part of this first manned orbital research facility. The investigations to be conducted cover almost every discipline that can take advantage of the unique

properties of Skylab's orbital environment—its broad view of Earth, weightlessness and its freedom to measure and monitor the entire solar and celestial electromagnetic spectrum from above the Earth's restrictive atmosphere.

At DMAAC the charting work has been divided into two primary categories—launch and general orbital missions, and recovery graphics and graphics to assist in the scientific mission objectives.

"The program has been one of the most interesting I've worked on," claims Charlie Miller, DMAAC NASA Program Manager. "The massive facets of the program cartographically surpass the previous Apollo programs."

New techniques were developed by the Center for color photography using large sized transparencies. Processing of color transparencies presented problems since previously most of the color work had been geared to no larger than 70 mm format. The Skylab program required transparencies 24 inches in width and at least two feet or more in length.

The transparencies, which were used for both simulator training and mini-zoom photo maps, were made from large scale color photographs taken from aircraft. The photos, which arrived at DMAAC in large rolls containing several 9 in. x 9 in. prints, were selected based on tone and com-

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Admiral Carnahan was Special Assistant to the Director, Navy Program Planning Office of the Chief of Naval Operations. He is a native of Pittsburgh, Pennsylvania, attended Carnegie Institute of Technology, graduated from the U.S. Naval Academy, and has an MS in Political Science from Auburn University.

Admiral Carnahan has commanded two nuclear submarines, USS ROBERT E. LEE (SSBN-601) and the USS JOHN MARSHALL (SSBN-611).

Admiral Carnahan replaces Rear Admiral James B. Hildreth, who has served with the Defense Mapping Agency since June 19, 1972. Admiral Hildreth retired on the first of May.

Admiral Carnahan is married to the former Betty Jeanne Shakespeare of New Haven, Connecticut, they have one son, Steven Bruce Carnahan.

ION Officers

The St. Louis Section of the Institute of Navigation will install officers for the 1973-74 season at the meeting to be held at the Coast Guard Club, Wednesday May 23, 1973.

The meeting will be open to ION members only. Strip steak dinner will be served at 5:30 p.m.

For tickets contact Adolph Wuenschler, Larry Knopfel, Wally Haviland, Vaughn Harrington, Norm Walker, June Hawkins, Dorothy Williamson, or Emma Kaiser. Cost of each ticket is \$3.50.

One hundred and twenty pairs of gloves were used by the volunteer workers, exchanging at each shift.

The move of the Aeronautical Information Department was the largest single move of the emergency, requiring the relocation of 300 people. Beginning at 1:00 PM the 23rd and working throughout the night personnel were ready to resume operations the next morning at 4300 Goodfellow.

"The department expended 3600 manhours in the move," said Ed Thompson, AD Chief, "and despite the crowding and other inconveniences, including the limited parking, our morale is excellent." Thompson went on to add, "Some of our people found themselves working around the clock in an effort to minimize the disruption to production. The team effort and the can-do attitude displayed by our people has been exemplary."

For the Research Department a relocation of approximately 60 people to 2nd Street was required. That included the entire Gravity Division and several people from the library area.

"Our people assisted with the move until 3:30 AM," said Tom Seppelin, Research Chief. "What they couldn't move they raised as high as they could in the buildings or they helped with the sandbagging. Such spirit and cooperation doesn't exist anywhere else," Seppelin heralded.

Research personnel are now housed within offices at 2nd Street

equipment and personnel were relocated to building 3 at South Annex which was not expected to inundate.

According to Larry Held, assistant chief of the Printing and Distribution Department, "We relocated the entire Requirements Branch, and part of the finishing operation to Goodfellow." In the warehouse all printed material was raised to the third shelf. Motors and equipment that could be harmed by water were raised or protected in some form. Bulk printed materials were forklifted to the top of skids of blank paper for safekeeping.

"All together we relocated 46 people in Requirements and six out of the Finishing Branch," said Held. "We kept the hand finishing operation and order filling going as long as possible. We would have even used boots to fill the orders, if necessary, that could not be filled at other depots."

Cooperation and hard work were the apparent key factors in the flood operation. "We had many people who worked their regular shifts and then spent many hours at the sandbag operation," praised Center Director, Col. Walter J. Chappas. "People from all work levels in the Center, secretaries to department chiefs, were down there organizing and working," added the Director. "You can't express enough appreciation for this type of extra effort. It is this very same effort and responsiveness that has characterized this Center and its personnel for many years."

Savings Bond Drive Underway At Center

The 1973 DMAAC Savings Bond campaign began Monday with a "kick-off" meeting.

Featured at the meeting, according to John I. Johnson, Center Project Officer, was an entertaining and informative film starring Sandy Duncan, with cameo appearances by many other movie and television stars. Kemble Tinsley of the Treasury Department's Savings Bond Division spoke to the keyworkers on the merits of the Savings Bond Program. Campaign materials were distributed to project officers and keyworkers for the various DMAAC organizational elements.

Arrangements are now being made to show the Sandy Duncan

film to as many DMAAC employees as possible during the course of the May campaign.

The Treasury Department's goal this year is 80% participation and an increase in bond allotments from at least 25% of those presently buying bonds.

DMA Director, Lt. Gen. Howard W. Penney has stated, "I believe the program is extremely important to the National economy and provides an excellent means for a personal investment program. Members of the Defense Mapping Agency should join other Federal employees in setting the example for others to follow by using the Federal Payroll Savings Plan."



Society Meet Tonight

Thomas C. Finnie, DMA Deputy Director, Management and Technology, will address a joint session of nine technical societies tonight at the DMAAC Dining Hall.

Speaking on the subject "DMA Research and Development Programs," Finnie is expected to emphasize the future demands for DMA services in supporting new navigation and weapon systems development, which cannot be met by using traditional mapping, charting and geodetic techniques.

The nine societies sponsoring the meeting are: American Society of Photogrammetry, American Congress of Surveying and Mapping, Institute of Navigation, American Geophysical Union, National Association of Lithographers Club, American Society of Quality Control, Society of Photographic Instrumentation Engineers, Society of Photographic Scientists and Engineers and the Association of Computing Machines.

Bits And Pieces

From the Black book:

It is quite apparent from our front page that the topic of the times is the flood. There are many individual stories that happen during a crisis, and because of the rapid sequences of events, never get reported. Stories of the sand-



Boyd Perry (left) and Siefert arrange negative special template for printing process is called "e... These three negatives will be placed in a vacuum frame for exposure on sensitized paper before being processed automatically.

patibility, and been identified.

"The most," said Miller, "could soak and aic, but not sc use a special w

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Behind the Scenes Of Skylab Production





No flood duty here our "sailor" Miss Roberta Staely (MD), is climbing the savings bond ladder to remind you to take stock in America through the payroll savings plan. (Photo by David L. Black)

Safety First

by George Donnell, Safety Officer

"Zero-In" is upon us, but what is it? Originally introduced in 1970, "Zero-In" is a safety program designed to reduce on-the-job injuries and work related health problems. This program has proven its effectiveness throughout civilian industry and in government agencies/departments that have employed it. In its two years, the "Zero-In" program saved an estimated \$15,000,000 and averted some 17,000 injuries.

Based on this success, President Nixon has extended the "Zero-In On Federal Safety" Program through 1973. In extending the program the President cited the need to further reduce job injuries in federal work places. The President also emphasized the need to provide a safe and healthful work environment for federal employees.

We recently received instructions from DMA to implement "Zero-In" here at the Aerospace

Center. The program will commence in May. As the name implies, the objective of the program is to "Zero-In" on those factors that cause on-the-job injuries and health problems. The program will concentrate on four target areas that account for well over 60 percent of our injuries: Slips, Trips and Falls; Health; Material Handling; and Struck By or Against.

Although we are getting off to a late start with the "Zero-In" program it can still be effective. By "biting the bullet" and applying the can do attitude that has typified past DMAAC efforts, we can meet the objectives of "ZERO-IN".

In Sympathy

Charles H. Lane (LOSAM) died April 23.

He was assigned as a parts expeditor warehouseman and had spent over 28 years at DMAAC.

get reported. Stories of the sand-bag volunteers who worked long past their regular shifts to do the job that had to be done; or those not physically able but who still made the effort to see if there was something they might do; of the high school students who volunteered to help with the operation; of the donations taken among employees to buy food for the workers; of the agencies who came to the Center's immediate aid with equipment; of the extra effort made by GSA people to make ready areas for relocation; of the painful waiting and watching as the flood waters edged their way upward on the levees; of the moving companies who provided immediate assistance; of the office workers who toiled to relocate. Some stories will be reported, some not, but all who were involved know they happened and recognize the great importance of those little individual extra efforts that came just at the right time. Thanks.

dlb.

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Col. Walter J. Chappas

Director

David L. Black

Chief, Office of Information
Editor



The airbrush technique is used to create 3-dimensional relief of the cartographic product. Here Melvin Muramoto (left) and Fred Paris (right) use the airbrush as Raymond Anderson looks on.

Photos by Ed Mullen



Mosaicing special color photography for use in making color transparencies are (left to right) James Cannon, John Snipes and Carl Lam (at the waxing machine).

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the color photography. We had to
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designated series of graphics, 8 x 10
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The launch and general orbit
category of charts is similar to
those type of items produced for
the Mercury, Gemini and Apollo
missions. Such things as plotting
charts, weather charts, recovery
charts, scientific charts, project
plotting graphics, flight charts,
mission plotting charts and the
orbit charts.

"The entire program was
accomplished under short
suspense and new parameters. It
would never have been ac-
complished," states Miller,
"without the massive cooperation
from a majority of the people."

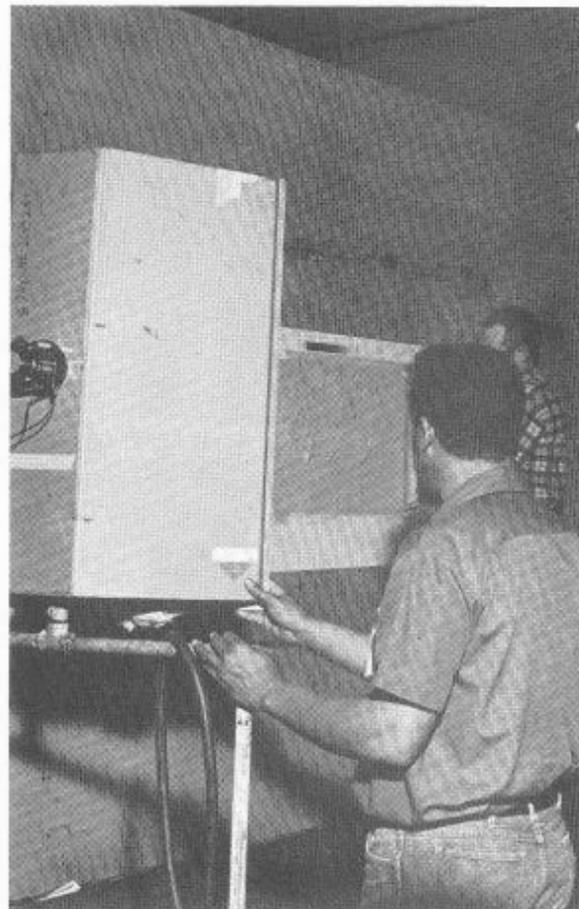
The Skylab experiments will fall
into four major areas—Earth's
resources, medical, studying the
sun and other science and
technology. DMAAC cartographic



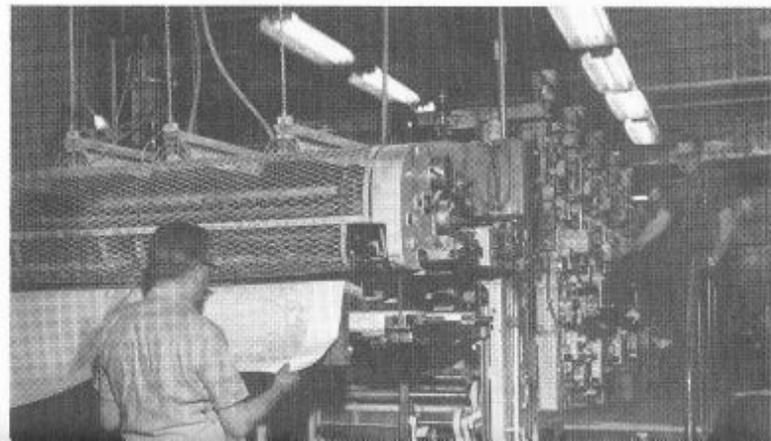
Engraving ground tracks of Skylab Mission Chart are Donald Sovar and Julia Presnell.



As the Skylab photo prints come off the auto-processor, they are checked by Raymond Roach, Quality Control Inspector and Warren Tabachik, section supervisor. Color control and exact representation were critical to the program.



Setting up a relief model for photographing are William Mayberry, adjusting light, and Charles Lawton at easel.



products will be used to support primarily the Earth's resources experiment.

In this project the NASA Earth Resources Technology Satellite (ERTS) launched last July and the Skylab Earth Resources Experiment Package (EREP) are experimental efforts aimed at demonstrating the feasibility of using space to gather detailed information and apply it to the problems of the environment, diminishing resources and population growth. The data will assist, for example, studies of crop and forest inventories, crop health, mineral and water resources and air and water pollution.

Skylab's EREP will acquire selective data for 146 investigations in 46 task areas. The astronauts will operate instruments to obtain photographic and infrared images and digital data. About 39,000 Earth resources photographs will be made during the three manned visits as Skylab overflies 75 per cent of the Earth's surface.



Checking proof and ground track with the printout of a Skylab Mission chart is Lawrence Klages (left) and Charles Moore.

Programming and checking data for the Earth Resources Experiment Package site locations on the plotter console are Charles Sullivan (standing) and Charles Marshall.



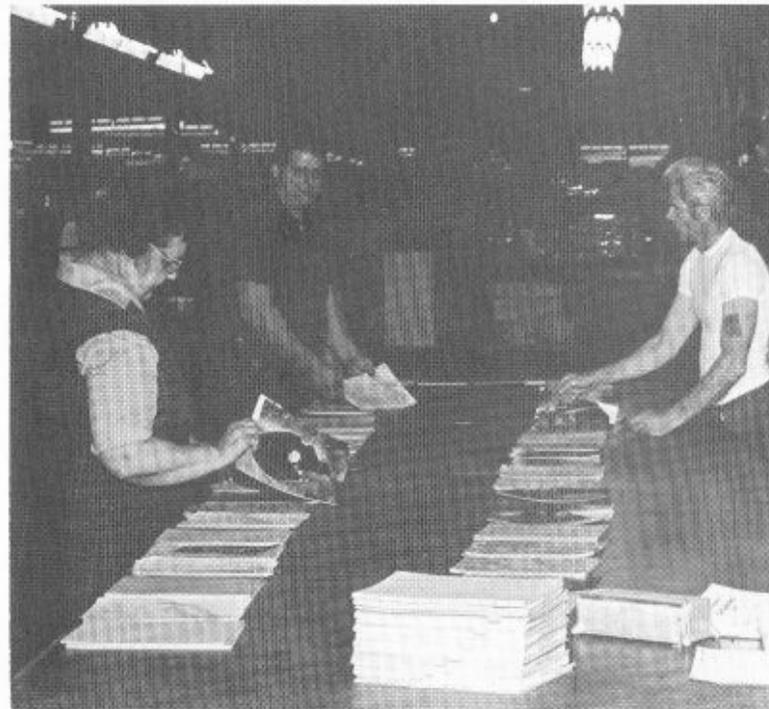
Quality review of photo maps and charts under black light is done by Jeeter Thompson (left) and Walter Danaher.



Comparing a color proof copy to the original plate is the responsibility of litho draftsman, Charles Zimmer.



Henry Amptmann pulls a check copy of a chart off the five-color press as other pressmen operate controls on the side of the press.



Putting together all the pages into a complete chart book required a lot of patience. Here Florence Benton, Roger Carbone and Tom Corcoran show how it's done.



**Days To Remember
April 23 - May 2**



