

U. S.-Russian Space Mission Uses Aerospace Center Chart

In a quest for knowledge and mutual cooperation an American Apollo Command Module and a Russian Soyuz spacecraft will meet and dock in orbit some 140 miles above the earth during mid-July. The crews will visit each other's spacecraft, perform joint experiments, and broadcast almost continuous live television pictures back to their respective countries. The mission itself, with all of its historic value, is the culmination of many months, even years, of team effort. A part of that team are the men and women of the DMAAC who labor to produce the various cartographic products used in the mission.

Linking the St. Louis workers with the NASA Johnson Space

Center in Houston, Texas, is DMAAC's man in Houston — Joe McKinney.

Joe has been in the heart of the NASA complex for nine years, since the beginning of the cartographic support for the Apollo space program. For Joe and his "girl Friday," Mary Kunkel, the manning of the office requires a total knowledge of each mission so that advice, regarding cartographic support, can be given to the NASA program managers and so that costs can be developed based on the requirements decided upon. McKinney then must prepare the necessary contracts between NASA and DMA and monitor the contracts once they are in existence. Of course, the

reevaluation of all cartographic program support is a continual challenge for Joe.

After the contracts have been drawn and a requirement guide developed, McKinney then sends the product requirements to DMAAC and program manager, Charlie Miller. Miller makes the necessary production assignments based on the requirements.

"I'm the only one down there," stated McKinney, "that is involved in the cartographic support and there are a lot of NASA programs going on, both immediate and long range, that require our products." As an example of the long range programs he cited the 1979 Space Shuttle which is already beginning

to make demands on his time. "The training simulator will be operational in 1977 and that means we'll have to have all the cartographic products ready to go on the training date. And that's not a long time off. We'll have to make world maps on polar stereographic projections, re-do the current mercator series and some other things to get ready for the mission."

"What about the current Apollo-Soyuz mission?"

Mission Profile calls for the beginning on July 15 at 7:20 a.m. (CDT) when a Soyuz spacecraft will be launched from the Baikonur, Kazakhstan, launch complex near the Caspian Sea, and inserted into an orbit of 117 by 142 statute miles. After the 17th orbit, the Soyuz will settle into a circular orbit 140 miles above the earth.



Joe McKinney, DMAAC's "man in Houston," checks an Apollo-Soyuz Test Project Mission Chart produced by the Center. McKinney is the link between Center production elements and the NASA program managers in Johnson Space Center, Houston.

periments. Data from these will be shared by both parties.

At the 95th hour of the Soyuz mission, the two spacecraft will separate to perform a solar eclipse experiment. The Apollo CSM will maneuver in front of the sun, while the Soyuz crew members take photographs of the solar corona.

Upon completion of the experiment the Apollo will redock with the Soyuz. During the 98 hour of the Soyuz mission final undocking will occur and independent studies will begin.

The Soyuz will continue in orbit for about 43 hours after separation, then will return to earth in Kazakhstan, USSR. The Apollo, meanwhile, will remain in orbit for about three and a half more days to conduct additional unilateral experiments. It will then splash down in the Pacific Ocean near Hawaii.

Onboard the Apollo craft will be special ground track charts which indicate the times when the craft's orbit is in daylight. These along with other DMAAC produced charts are used both in training and during the mission for observation information.

Another onboard item produced by DMAAC is a set of 87 Visual Observation Site Graphics which pin-point land and sea observation areas and experiment locations.

To satisfy onboard requirements DMAAC produced 34 Continental Flight Charts from the one to five million scale Global Navigation Chart series by reformatting and reducing selected chart areas to one to ten million scale. These charts are oriented on RC-37 photo

Orientor

DEFENSE MAPPING AGENCY AEROSPACE CENTER

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New Deputy



Director Announces August Retirement

Colonel Donald D. Hawkins, DMAAC director since April 1, 1974, announced his retirement will become effective August 31. Change of command ceremonies are planned for August 25.

The current Deputy, Colonel

James St. Clair, will assume the position of Director and Colonel Robert C. Burns, Deputy.

Complete articles on the retiring Director and the new staff will be carried in subsequent issues of the Orientor.

Fishing Tourney July 26th

The Second Annual DMAAC Family Fishing Tournament will be held July 26th at the South Annex ponds from 10 a.m. to 12 noon. Prizes will be awarded to the

fish by weight and to the two families with the most fish per participant. The Arsenal Credit Union has donated the prizes.

The tourney is open to civilian

Seven and a half hours after the

Col. Burns

Col. Robert C. Burns reported to DMAAC from Air War College and will become the Deputy Director next month.

A native of Florida the colonel received his commission through the ROTC program and began his active duty in 1954.

Following pilot training he was assigned to the 1370th Photo Mapping & Charting Wing (MATS), as a photo mapping pilot and as chief, aircrew standardization officer, flying RC-130 and RC-135A aircraft.

He served with the 7th AF (PACAF) as Chief, 7th AF Search and Rescue Center, 3d Air Rescue & Recovery Group at Tan Son Nhut.

His next assignment was with USAFE as Deputy Director of Operations of the 7499th Support Group and Squadron Commander of the 7406 Operations Squadron. He also served as assistant deputy commander for operations with the 322d Tactical Airlift Wing.

He has completed the squadron officers course and attended the Armed Forces Staff College in 1967. Colonel Burns is a command pilot with over 6000 flying hours.

Married to the former Martha Anderson, also of Florida, they have two daughters, Lynne and Sandra.

noon. Prizes will be awarded to the two families with the one largest

City Earnings Tax Deduction

The St. Louis Earnings Tax withholding program has been implemented with the signing of the Standard Withholding Agreement (PL 93-340) between the U. S. Treasury and City of St. Louis. This means that the withholding of city tax is mandatory for all employees who work at an installation that is within the city limits and are residents of the same state. For employees who live outside the state, but are working within the city limits, withholding of city tax is voluntary.

Effective with the pay period beginning July 6, 1975, all employees working at the 2nd & Arsenal location or within the city limits of the 8900 So. Broadway location and living in Missouri will automatically become subject to the withholding of St. Louis City Earnings Tax at the rate of 1%. The employee's residence is based on the home address in the Payroll Master Record which is the address printed on the employee's leave and Earnings Statement. If the home address printed on your Leave and Earnings Statement is not current, immediately submit your correct home address on DMA Fm 7300.2e-R to CMF/CPO.

Employees living in any state other than Missouri and working

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The tourney is open to civilian and military employees of DMAAC and their families. All participants over 15 years of age must possess a valid Missouri fishing permit. Each participant is limited to one fishing pole.

Johnson Awarded Highest DMA Honor



John I. Johnson was presented the DMA Distinguished Civilian Service Award in recognition of his outstanding performance as Comptroller, Defense Mapping Agency Aerospace Center for the period 1961 to July 5, 1975. The presentation was made by DMA Comptroller John R. Vaughn at a party honoring the retiring Johnson.

In presenting the medal, Mr. Vaughn praised Johnson for his distinguished service to DMA and added he was only the third to receive this award.

Seven and a half hours after the Soyuz lift-off, a Saturn V rocket — the same as used on the first Apollo flight and Skylab missions — will launch the Apollo Spacecraft from the Kennedy Space Center in Florida. After achieving an orbit designed for rendezvous with the Soyuz, the Apollo Command and Service Module (CSM) will separate from the Saturn IVB second stage rocket, turn around, and extract a "docking module" from a compartment in the Saturn rocket — the same type of maneuver that was performed during the lunar flights. The docking module, built by the U. S., is a piece of equipment measuring about 5 by 10 feet that will serve as a connection between the two spacecraft. One end is compatible with the Apollo, and the other end is a docking system with a common interface, jointly developed by the two countries and will match the Soyuz craft.

Some 52 hours after Soyuz lift-off, the Apollo will rendezvous and dock with the Soyuz, and for the first time Americans will visit a Russian spacecraft. After a sleep period and during the second transfer operation, a cosmonaut will visit the Apollo. One crew member of each country will remain at all times in his "home" spacecraft. During the two days that the vehicles are expected to be joined, there will be a total of five joint experiments, such as studies of the earth's upper atmosphere, and life science ex-

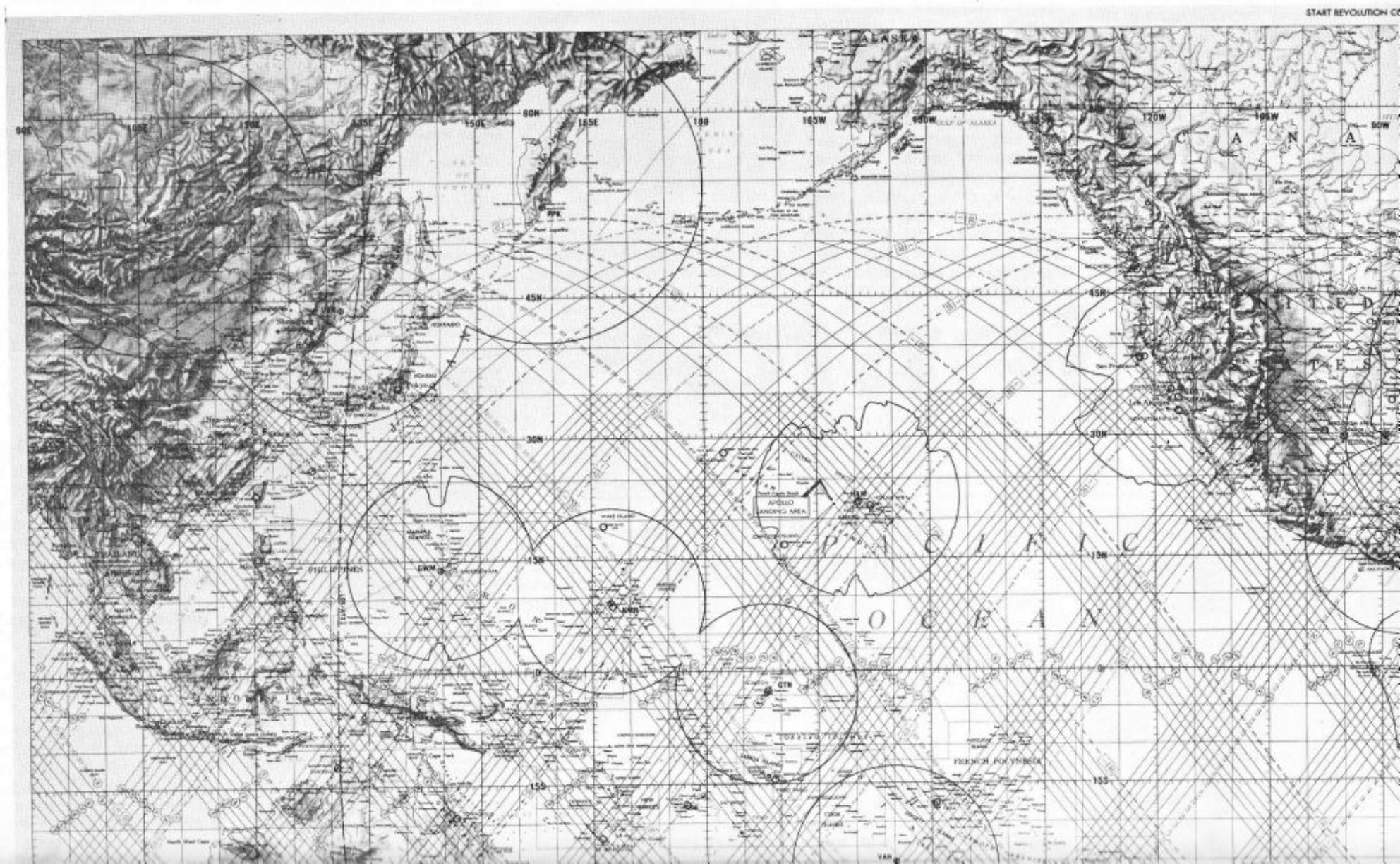
charts are printed on RC-37 photo paper and were used originally in Skylab. They allow the astronaut to be able to write on the surface of the chart as he makes random observations. This same program is being continued into the Space Shuttle program.

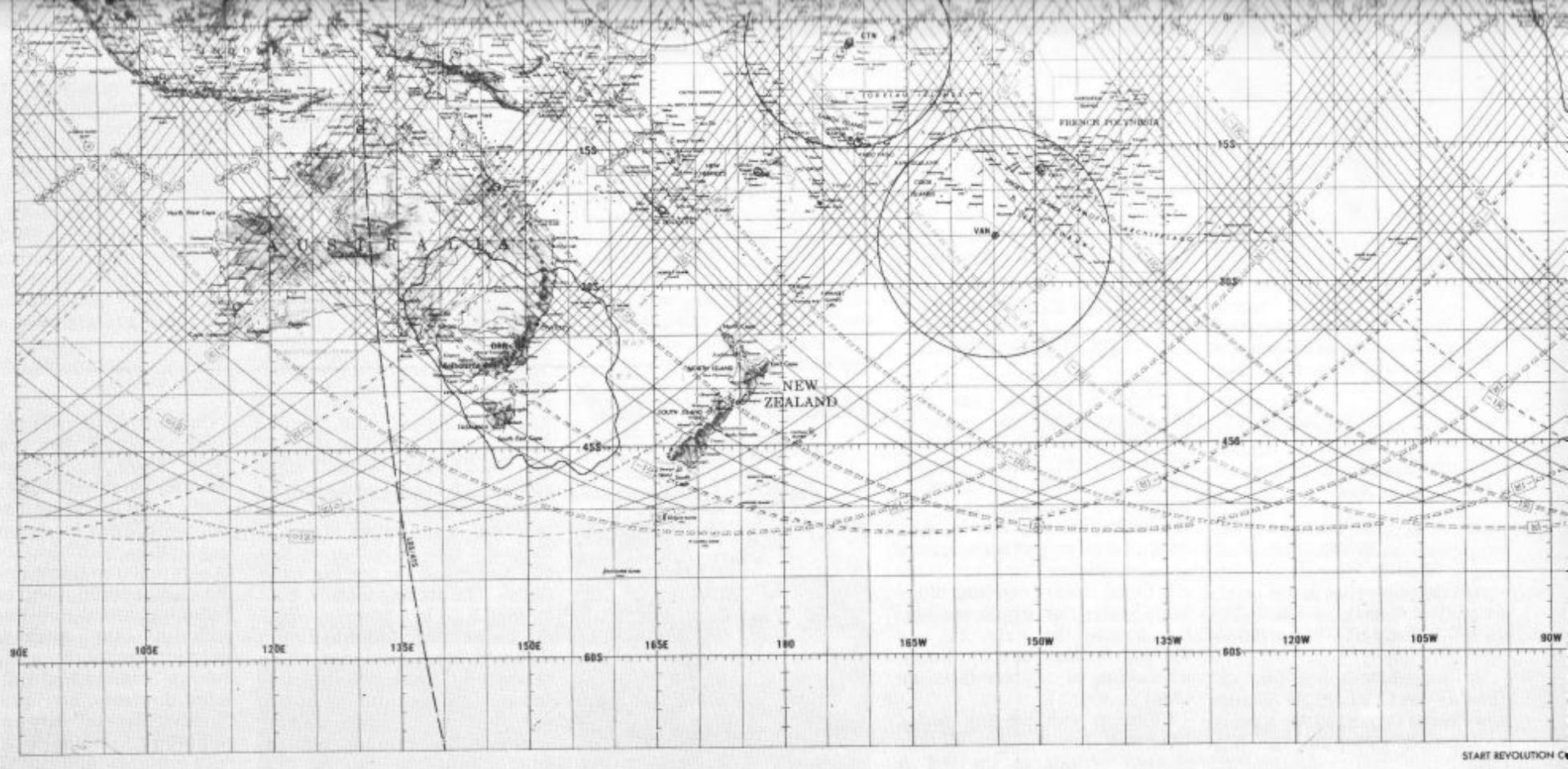
Onboard items require special handling during the production cycle. Each graphic must be carefully examined under normal lighting and blacklight and white glove conditions for fingerprints, flaws, dust particles or other foreign material that might affect the spacecraft environment. Following careful preparation and packaging the products are shipped directly to a "Bonded Storage" vault at NASA. Once the onboard items are placed in "Bonded Storage" they cannot be removed until mission requirements dictate. DMAAC must certify that all items for onboard use are prepared on pre-specified materials, are free from foreign materials and meet all requirements outlined by NASA.

As usual the Center will produce a variety of products which support the ground operations of the NASA mission. Primary among these products is the Apollo-Soyuz Test Project Mission Chart which provides all Apollo Ground track data for the entire 138 orbit mission. A reduced version of this chart has been published for employees use in the center of this publication.

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Apollo-Soyuz Project (ASTP)





PREPARED AND PUBLISHED BY THE DEFENSE MAPPING AGENCY
AEROSPACE CENTER, ST. LOUIS AFB, MISSOURI ASTP FOR THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION
1975 OPERATIONAL EDITION, MAY 1975

Photographed by DMAC 3-75

NOTE: The representation of international boundaries on this chart is not necessarily
concurrent.

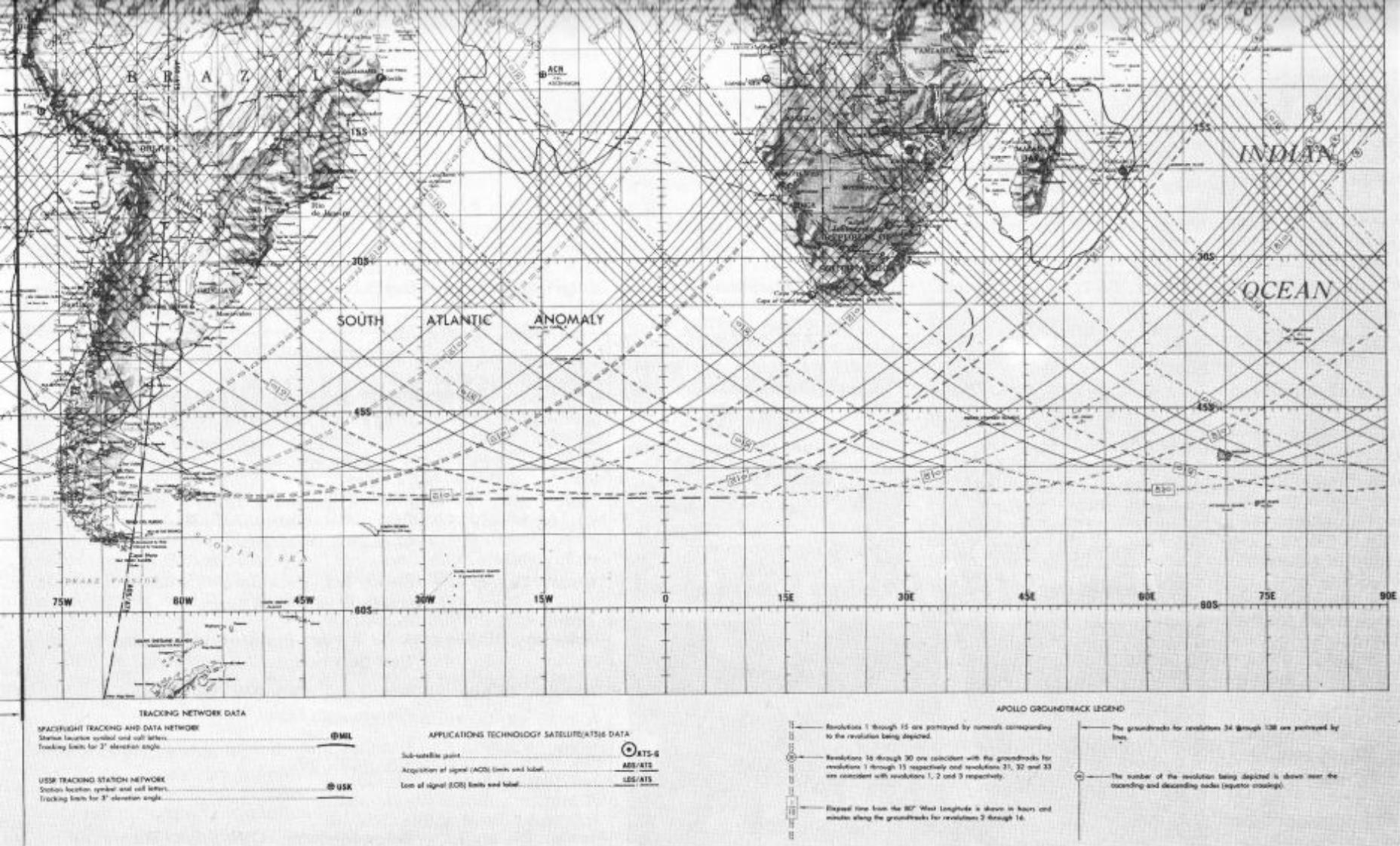
LEGEND
International boundary _____
Capital cities _____
Other cities _____
Aircraft staging bases _____
South Atlantic Anomaly (Smith)

MERCATOR PROJECTION
SCALE 1:40,000,000 AT THE EQUATOR

The ASTP Mission Chart contains Apollo spacecraft groundtrack data for the initial fifteen Apollo orbital revolutions and a succeeding sequence of fifteen revolution groundtracks. With the exception of a longitudinal shift of as much as two degrees, the revolutions that occur subsequent to the initial fifteen are coincident with the initial fifteen groundtracks or by line segments. Groundtracks are shown at latitudes greater than 35° S. The line segment is labeled near the ascending and descending nodes. The first revolution (West Longitude) is shown at ten minute intervals along the equator, coincident with Revolution 1. Elapsed launch phase and

Mission Chart July 15, Launch Date





Groundtrack data for the nominal 138 revolution orbital mission. The groundtracks are portrayed by the numerals 1 through 15. Each revolution is repetitive of the preceding sequence of fifteen tracks with respect to the west. The eight sequences of fifteen orbital revolutions are portrayed on the chart either as segments between 35° north and South latitudes. Selected convergence of other tracks permits. Each groundtrack passing node (equator crossings) with the number of the orbital flight time from the start of each revolution (80° West Longitude). The groundtracks for Revolutions 2 through 16 (Revolution 16 is the first revolution) are shown. The orbital flight time is not shown for Revolution 1.

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Retirements 1975

January thru June

Alexander, Lewis W.	FEPM
Bantel, Carl E. Sr.	CDSC
Brinton, Helen M.	CDIB
Crawford, Rayburn E.	MDAR
Cross, James H.	CDCN
Crown, Robert P.	ADDP
Dannehl, Erwin P.	RDNE
Droege, Herman J.	LOM
Elliott, Earl T.	RDSP
Finigian, Garo J.	CDCC
Huskisson, Margarite B.	LOPS
Johnson, Helen L.	RDSLL
Johnson, Sulena C.	MD
Kemner, Eugene C.	CMP
Konnyu, Elizabeth	CMFS
Moss, Henry S.	FEMB
Murphy James F.	CDCB
Poetz, Margaret M.	PD
Pope, James S.	MDDT
Quillo, Prince A.	CDCA
Rammacher, Kathleen	TD
Rutherford, Harold L.	FE
Schultz, Neil S.	MDAR
Showman, Winfred L.	PD
Simms, Bobby D.	FEMC
Simon, George G.	CDAP
Synenko, George	RDSL
Tise, Gerald F.	RD

Recent Military Actions

Recent military actions include the following promotions and reassessments:

June Promotions

The following people received promotions during the month of June: Kenneth A. Aldridge, GS-7; William G. Bock GS-9; James B. Bradley, GS-7; John F. Clouser, GS-7; and D. D. Danner, GS-

Top Policeman For June



Booker M. Bowers has been selected as the DMAAC Security Policeman for the month of June. His government service dates back to October 1958 with 9 years, 8 months at DMAAC.

Bowers served with the Marine Corps for a three-year period from August 1951 to 54.

He is married and has five children ranging in age from 20 to 2.

Bowers lists his hometown as Middleton, Tenn.

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Col. Donald D. Hawkins
Director

David L. Black
Chief, Public Affairs Office
Editor

CTS Closer To Trophy

The Cartographic Technical Squadron (CTS) moved a step closer to its third Commander's

City Tax

Continued from Pg. 1

within the city limits (2nd and Arsenal or the city side of the 8900 So. Broadway location) must complete an original TFS FM 7311 to certify their desires for city tax withholding and forward it to CMF/CPO. As a non-resident of Missouri, the withholding of city tax is optional, but the liability to pay the tax remains unchanged.

No retroactive deduction of city tax will be made. The 1975 "City Tax" Fm W-2, to be issued in January 1976, will include wages earned for the entire pay year and the amount of city tax deducted from July 6, 1975, if applicable.

Civilian Personnel is providing CMF with the identification of all employees whose official duty location is in the St. Louis County section of 8900 So. Broadway. No withholding of city tax is permitted unless the employee works within the city. However, city residents working outside the city (St. Louis County section of 8900 So. Broadway), have the option of having St. Louis City Earning Tax deducted by completing an original DMAAC FM 7300/CMF-2, "Request By Employee For Withholding of Pay for Payment of City Income Taxes" and forwarding it to CMF/CPO. If the deduction is not desired, no form is necessary. The deduction authorization remains in force until cancelled by the employee.

Participation in this optional withholding program does not change the city residents' liability for tax payment.

Because of CMF/CPO's responsibility to report gross wages to the city for everyone working in the city as well as all St. Louis resident employees, it

U.S.—Russian Mission

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There will also be recovery, weather and trajectory plotting charts used by DoD and NASA forces throughout the various stages of the mission.

Following the mission DMAAC will be required to index all photography taken during the mission with two Hasselblad cameras.

The American crew members of the ASTP are: Brig. Gen. Thomas Stafford, commander; Donald Slayton, the astronaut who was grounded very early in the space program because of a slight heart murmur, (now corrected) — docking module pilot; and Vance Brand, a civilian, who served as backup commander for the Skylab 3 and 4 missions. Brand will be command module pilot.

While the flight of the Apollo-Soyuz is circling the earth, DMAAC's man in Houston will already be busy preparing for the DMA support to the Space Shuttle Program.

will be necessary to have all of the officially identified employees working in St. Louis County complete a certified statement of Official Duty Location and Home Address at the end of December 1975.

Employees other than city residents officially identified as working in St. Louis County but actually working part of the time in the city section of 8900 So. Broadway or the 2nd & Arsenal location will be required to prepare a City Earnings Tax Liability Certificate at the end of 1975. Exemption certificates will be needed for employees officially working in the city that spend a percentage of their time performing duty in the St. Louis County

Public Affairs

The Office of Information

Reassignments.

Lt. Colonel Kenneth W. Cowan was promoted to his present rank on June 1st. Colonel Cowan has been Director, Facilities Engineering since last December.

SMSgts. Richard Broaddus and Charles R. Smith have been selected for promotion to Chief Master Sergeant on the coming cycle.

Capt. George E. Zumwalt, Jr., Chief, Operations & Maintenance Division, Directorate of Facilities Engineering, departed for the 52 Civil Engineering Squadron, APO 09123. He had been at DMAAC since April 28, 1971.

Capt. Larry A. Campbell, Transportation Officer, Directorate of Logistics, left for the 1605 Transportation Squadron, APO 09406. He was at DMAAC since July 10, 1972.

Capt. Frank R. Emmerich, Accounting & Finance Officer, Comptroller, since July 20, 1972, has been reassigned to the 834 Combat Support Group, Eglin AF Auxiliary Field, Florida.

TSGt. Antonio Parra, Equipment Management Officer, Supply Division, Directorate of Logistics, was reassigned to the 26 Combat Support Group, APO 09860. Sgt. Parra had been at DMAAC since July 11, 1972.

WP-21; Judith P. Davenport, GS-9; Helen M. Dougherty, GS-6; Judith M. Fizer, GS-5; Scott E. Hendrick, GS-7; Gary G. Jacobs, GS-7; Ruth E. Johnson, GS-7; Barbara G. Lair, GS-7; Ronald O. Marr, GS-7; John H. Mays, GS-9; Robert L. Meinhardt II, GS-7; Mary M. Mihaljevic, GS-4; Donna E. Miller, GS-4; John J. Novak, GS-7; Maryann A. Onanian, GS-5; Gayle A. Powers, GS-5; Gloria J. Ross, GS-4; Kathleen Sandy, GS-4; John E. Seiffert, GS-7; Randal E. Simpson, GS-7; Deborah A. Spaeth, GS-4; Janet M. Spencer, GS-5; Margaret A. Walas, GS-7.

Bicentennial Flag Raising Ceremony



On July 2 a Bicentennial Flag Raising Ceremony was held at 1125 on the grounds of 2nd and Arsenal. Throughout the St. Louis area other Federal agencies held simultaneous flag raising ceremonies marking our nation's bicentennial celebration.

Trophy in as many years when Joe Jordan and Don Zimmer placed 1st and 2nd in the singles of the March AFB intramural horseshoe tournament.

CTS thus garnered 44 Commander's Trophy points for the tournament raising its total to 264. The next closest contender, the Combat Support Group, has 239 points.

With CTS and the Support Group battling for 1st place in both fast and slow pitch softball, and with golf and football still to be decided, the struggle for the Commander's Trophy is far from over.

received a new title effective July 1, 1975. In order to conform with DMA (PAO), the Information Office was designated the Public Affairs Office (PA).

sections of DMAAC unless, of course, they are city residents.

If any further information is needed, contact the CMF/CPO office at 4316.

Dining Hall Menu

Daily Specials

Monday, 14 July	Pattie Melt - Cheese Dog - Sliced Turkey Chicken & Dumplings
Tuesday, 15 July	Sloppy Joe - Pizza Burger - Salami Spaghetti with Meat Sauce
Wednesday, 16 July	Swiss Burger - Bratwurst - Ham Salad Beef Stew
Thursday, 17 July	Meat Loaf - Chili Dog - Club Sandwich Pachito with Chili
Friday, 18 July	Fish Sandwich - Grilled Cheese - Chicken Salad Spanish Rice
Monday, 21 July	Baron Sandwich - Cube Steak - Submarine Veal Parmigiana
Tuesday, 22 July	Meat Ball Sandwich - Knockwurst - Turkey Club Creamed Chipped Beef
Wednesday, 23 July	Chili Burger - Ham & Cheese Grilled - Chicken Salad - Macaroni & Beef
Thursday, 24 July	Reuben - Salisbury Steak - Ham Salad Burritos with Chili
Friday, 25 July	Fish Sandwich - Sizzler Steak - Tuna Salad Macaroni & Cheese