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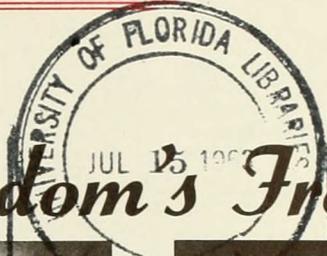




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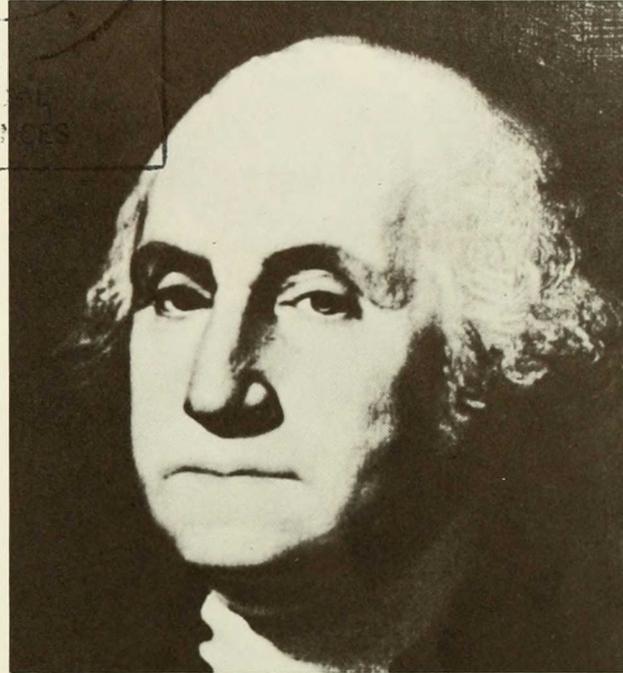
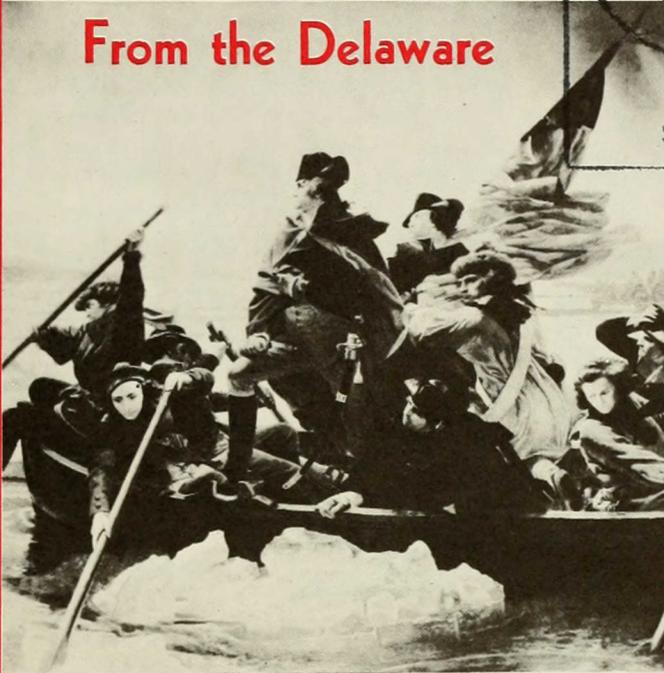
PANAMA  CANAL
REVIEW

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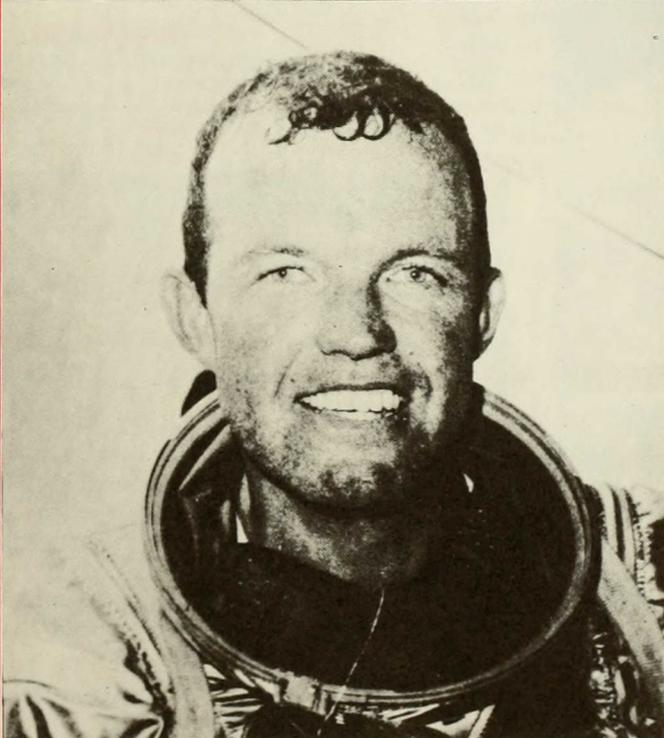


On Freedom's Frontiers

From the Delaware

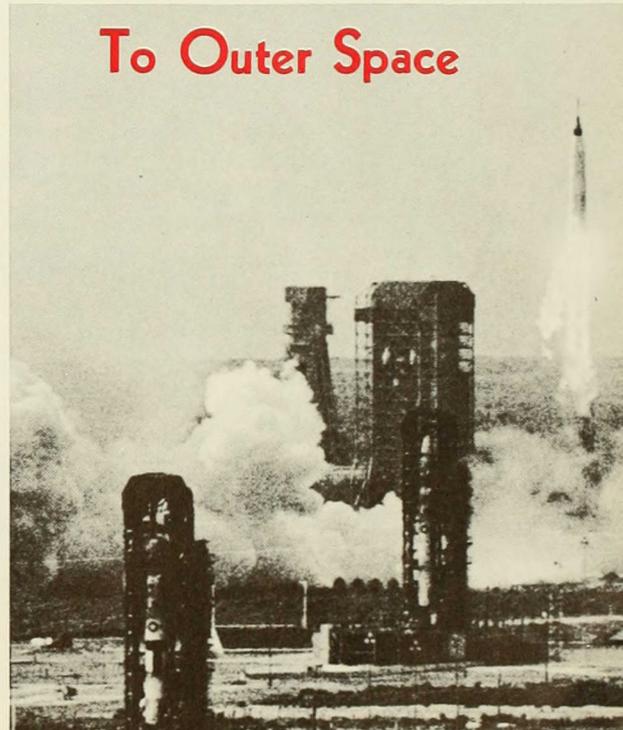


George Washington
1776



Astronaut Gordon Cooper
1963

To Outer Space



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P187

ROBERT J. FLEMING, JR., Governor-President

DAVID S. PARKER, Lieutenant Governor

FRANK A. BALDWIN
Panama Canal Information Officer



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Index

“We Hold These Truths . . .”

FREEDOM of the North American colonies was proclaimed nearly 190 years ago. The Declaration of Independence was adopted by the Continental Congress July 4, 1776.

The space age dates back less than 6 years.

But the patriots of the North American Revolutionary War and today's astronauts have a common bond: conviction that a free life is the only one worth living. The patriots won freedom. The astronauts' role is to help retain it, to help expand it, to help assure that their Nation maintains such a pace of progress that it can avoid being trampled as many other nations have been.

The spirit animating the astronauts must be much like that which stirred the patriots, as expressed in this Revolutionary War patriots' oath:

I am only one, but I am one;
I can not do everything, but I can do something;
And what I can do, that I ought to do;
And what I ought to do, by the grace of God,
I will do.

The sound of freedom may be a Liberty Bell, an outcry against injustice, the roar of a space craft lift-off.

Foundation stones are well known: Freedom of religion, without decrees as to what is "orthodox;" Freedom of assembly, with no curbs by petty officials; Freedom of speech, for open discussion without abuse or malice; Freedom of the press, to safeguard human rights. Goals of freedom from want and freedom from fear have been added.

Frontiers have changed from rugged wilderness to outer space, but the song of freedom in hearts is the same.

Hard-bought, freedom slips away if not guarded. Freedom has been a rifle in the hand against aggression, a peaceful harvest, the soft glow of candlelight without flare or burst of shell or bomb. It's a gift no man can give, a way to live—for which many have died.

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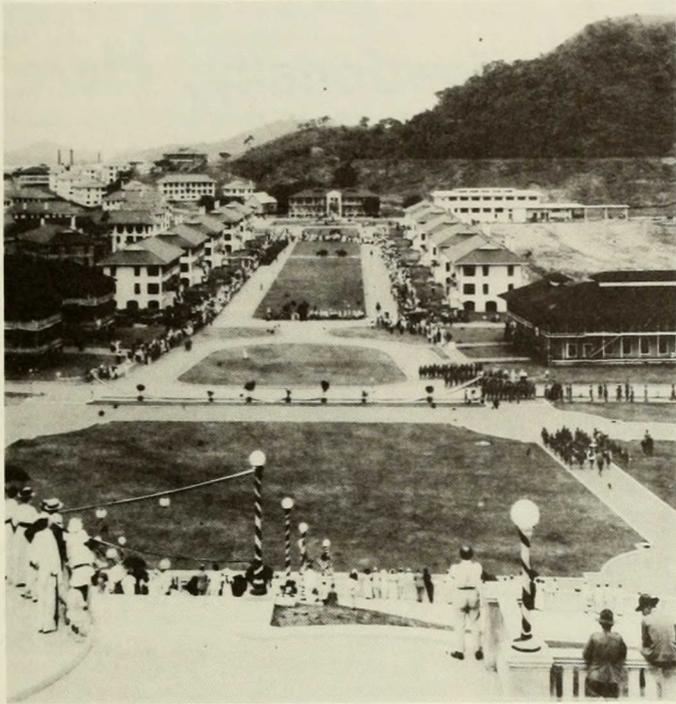
ON OUR COVER, with the pictures of George Washington and Astronaut Gordon Cooper, are two famous scenes. One is a portion of the famous Emanuel Leutze painting of Washington crossing the Delaware River with his troops December 25-26, 1776, during the North American colonies' war for independence. The picture now hangs in the Metropolitan Museum in New York City. The other is a view of the launching of Cooper from Cape Canaveral May 15, 1963. The United States has put well over 100 vehicles, manned and unmanned, into space.

For more on astronauts, see pages 9-16. And, coming back to earth, in this issue you also may learn about launches, about the Canal Zone's biggest quiz center (aside from Personnel), and about the mid-point in the Canal—both of them.

THE FOURTH

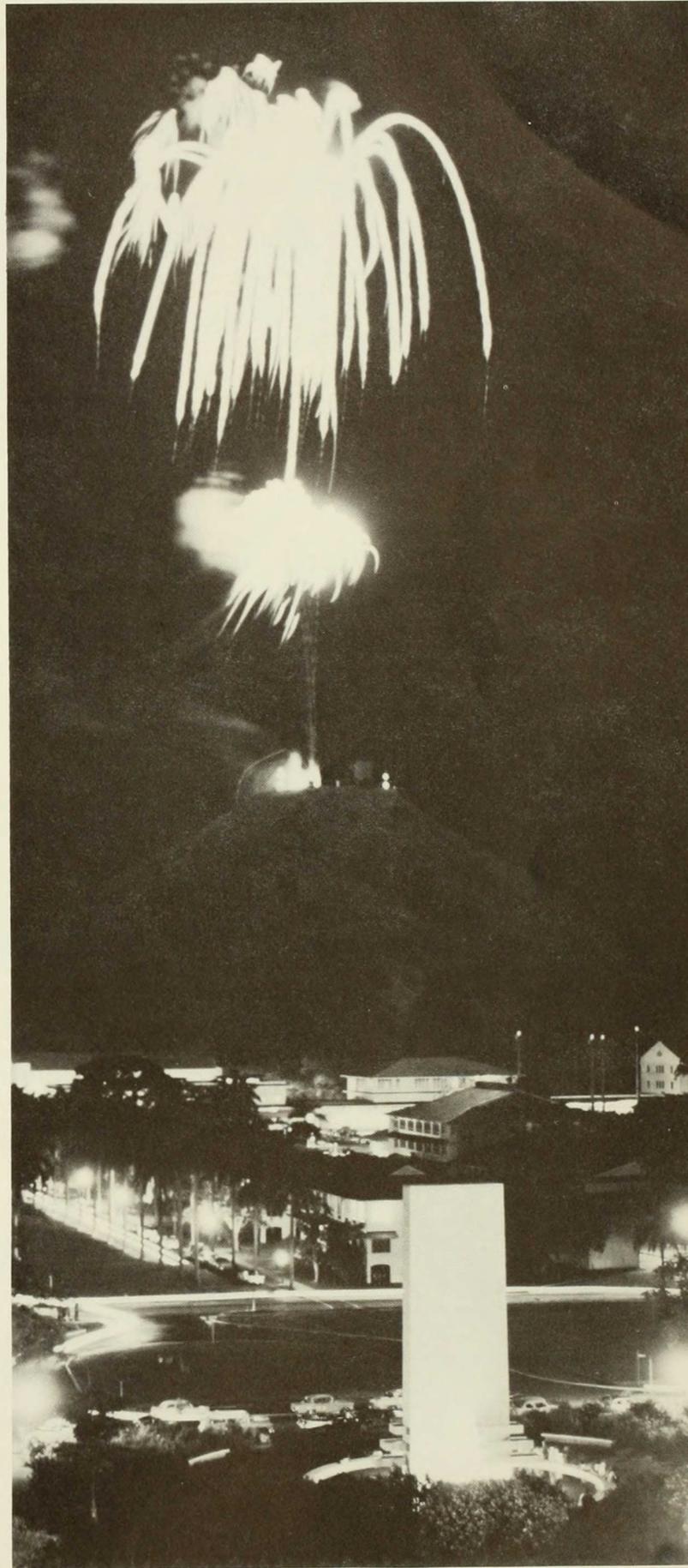
On the Isthmus

Over the Years



July 4, 1915, looking west from Administration Building.

The late President of the Republic of Panama, José Antonio Remón, and Joseph Harrington, left, then president of the American Society of Panama, smile their approval of the music of Lucho Azcárraga during a 1954 Fourth of July party staged at the Panama City Union Club by the American Society.





Although nearing the end of its transit to the Pacific side, the southbound super tanker Vivipara still is entering the Canal—navigationally. It is at the north end of Pedro Miguel Locks. Up to this point, red buoys and beacons have been on the starboard (right) hand and black ones to port. From here on, the black ones are on the starboard, the red ones to port.

MID-POINT IN CANAL?



Navigationally, Here

Navigation Aids Change-Over Point

Reason They Don't Match On Map

SHIPS transiting the Panama Canal southbound still are “entering” the Canal, navigationally, approximately 14½ miles after they’ve actually passed the half-way point.

Northbound ships, however, start to “leave” the Canal 14½ miles before they leave the mid-point.

Navigationally, the “middle” of the Canal, lengthwise, is at the north end of Pedro Miguel Locks, 39 miles from

At right is a standard type sun switch operating on the principle of expansion and contraction of a cylinder sensitive to light, but not to temperature changes. At left is a reproduction of one of the original installation sun switches such as were in use in 1915. It operated on the same principle.

the Atlantic end, only 12.2 miles from the Pacific end.

Geographically, the half-way spot is Station 1350 plus 28.75, a point one quarter of a mile west of Darien, approximately 5½ miles west of Gamboa, and 25.6 from Atlantic deep water and Pacific deep water.

All the buoys and beacons in the Canal are colored and numbered, so that on entering the Canal at Colon, and extending south to Pedro Miguel Locks, red buoys and beacons with even numbers, displaying red lights at night, are on the starboard hand, and black buoys and beacons with odd numbers, displaying white lights at night, on the port hand.

(A buoy is a floating marker moored

to the bottom; a beacon, a fixed mount signal, either on land or in the water.)

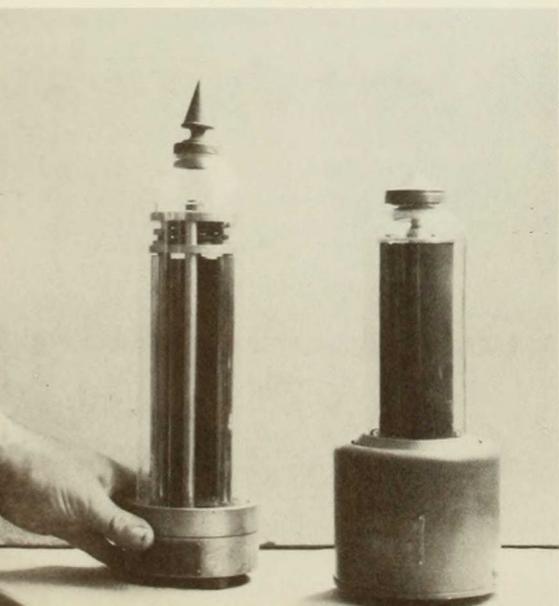
On entering the channel at Naos Island on the Pacific side, and extending north to Pedro Miguel Locks, red buoys and beacons with even numbers (and red lights) are on the starboard, and black buoys and beacons with odd numbers (and white lights) are to port.

Obviously there had to be a change-over point where colors were reversed if standard colors were to be observed in both entrances.

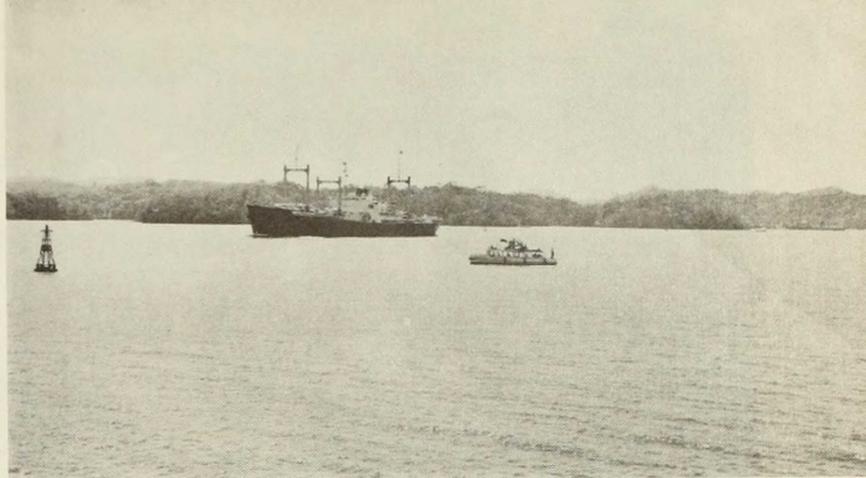
Otherwise, ships transiting one direction would be entering the Canal during their entire transit, according to the navigational aids, and those transiting the other direction would be leaving the Canal all the way—even when just entering it.

As it is, a southbound ship has the usual colors all the way to Pedro Miguel Locks, but from there to the Pacific the colors are reversed. The opposite is true for northbound ships.

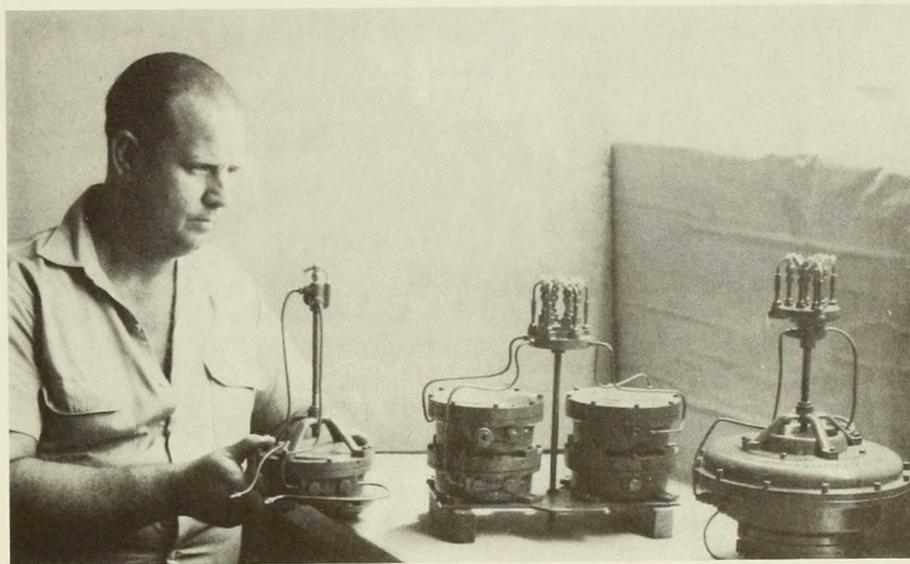
Arnold S. Hudgins, Aids to Navigation Section lead foreman, compares old type sun switch, right, with tiny new photoelectric cell type in his outstretched hand. The old type operates by expansion and contraction of a cylinder affected by absorption of light rays, but not by temperature changes.



Geographically, Here



This is the geographical half-way point through the Canal. The view is looking east in San Pablo Reach, about 5½ miles west of Gamboa. Transiting is the Chinese merchant ship Haishang, dwarfing the launch Shad, which sweeps the Canal electronically to make sure it's kept clear of obstructions. Darien is in the background.



Roy R. Shuey, leader machinist, with, left to right, a fixed single burner light, a double flasher unit with multiple burners, and a single flasher with multiple burners. The fixed single burner is for a constant light, the double flasher unit for offshore installations having two different characteristics in one lantern. The flasher with multiple burners provides a brighter light than does a single burner flasher.

Julio Collazos, electrician, with a bank of re-charged batteries ready to be placed in buoys and beacons. Each charge lasts up to a year to 14 months and some of the batteries have been in use for as long as 16 years.



Originally Miraflores Locks was to have been the change-over point for reversal of the colors.

The buoys and beacons, spaced in pairs about 3,000 feet apart, are part of the more than 2,000 road signs for ships which are the responsibility of the Aids to Navigation Section of the Dredging Division. These also include markers and lights for ranges, breakwaters, entrances, banks, channels to dump areas and project sites, and light-houses extending 300 miles out in the Caribbean and 200 miles out in the Bay of Panama.

About 1,500 of the lights are electrically operated, powered by shore current, 82 are operated by acetylene gas, 72 are battery powered, and there are 387 unlighted markers. Of the unlighted ones, 226 mark small boat channels in Gatun Lake used by many Panamanian farmers.

Buoys are on a general periodic overhaul schedule every 18 months if in salt water, every 5 years if in fresh water.

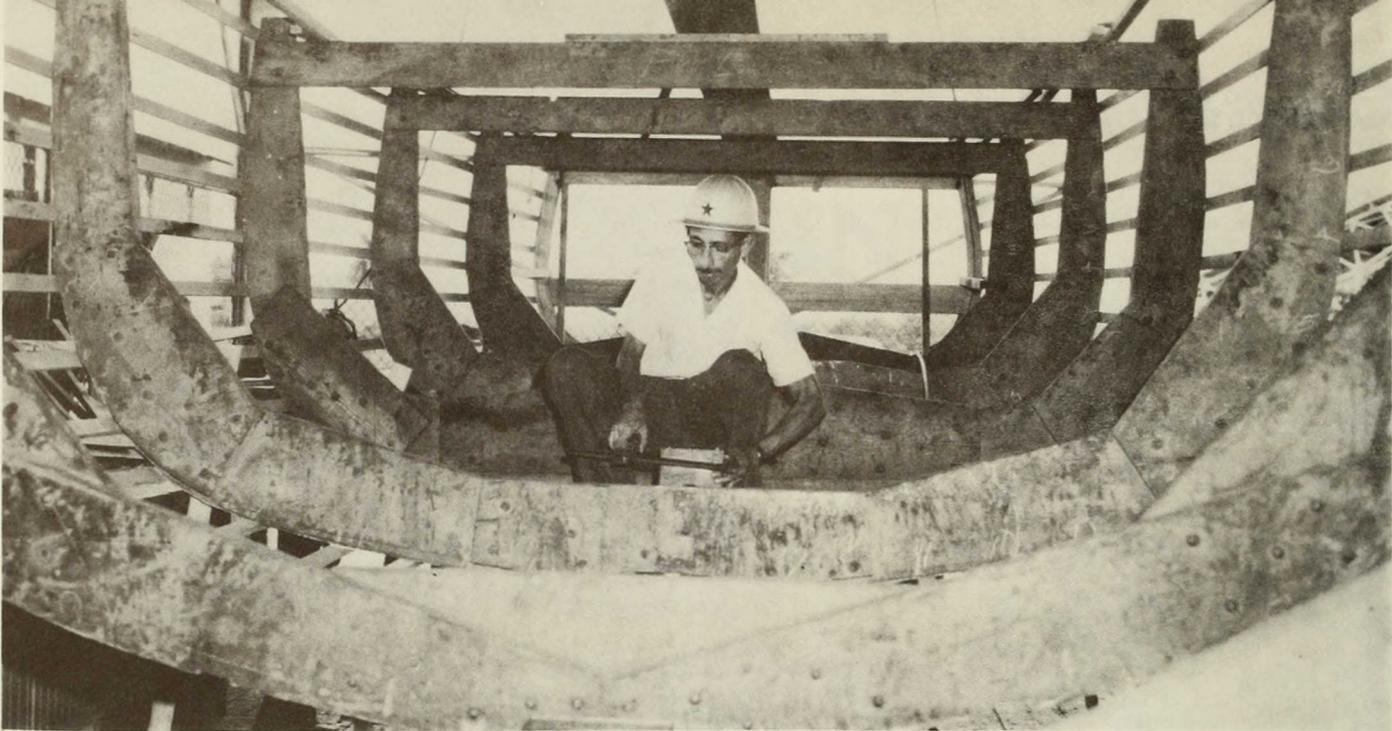
Fifty gas buoys have been converted to electric buoys under a program started in fiscal year 1960, and there still are 82 gas buoys to be converted.

Electric powered navigation aids are no better visually than the gas aids, but there's substantial dollars and cents savings in servicing. Gas buoys containing four cylinders of 180 cubic feet of compressed gas to a cylinder need resupplying about every 3 months, only every 4 months if equipped with sun valves which conserve the gas supply.

Batteries placed in the same amount of space that the gas cylinders occupy, however, provide enough power so that they have to be replaced only once a year, reducing the number of servicing stops and man-hours required by 2 to 3 trips a year.

The electric powered buoys, lighted with 1,000-hour bulbs costing \$1.25 each, are equipped with automatic lamp changers so that if one bulb burns out, another automatically replaces it. There usually are 1 or 2 good bulbs left in each automatic changer at the end of a year.

As beacons of wooden pile construction are due for replacement, they are being replaced by heavy-duty 12-inch steel pipe. In softer bottom foundations such as mud, sand, or clay, they are driven to proper supporting depth with a pile driving hammer. In rock bottom, the end of the pipe is specially prepared
(See p. 23)



Carlos H. Herrera is a foreman at the Launch Repair Shop at Gamboa and has been with the Canal since 1943. He is shown working on the molds of the Lark, a new 50-foot launch under construction at the shop. A carpenter by trade, he has worked on ship maintenance at the Port Captain's Office and at the Industrial Division shops in Balboa. He is now an expert boat builder.

FORTY-ONE Industrial Division employees—most of them Panamanians, have been working as members of a new Panama Canal unit and learning new trades which will make them far more useful members of the local labor force.

Some of them have been recruited from other units and divisions of the Panama Canal and others have been hired in Panama, but all became part of the relatively new Gamboa Launch Repair Facility, which has been set up in Gamboa as part of the Panama Canal Industrial Division.

The new unit was organized in April

New frames for old deck molds on the Panama Canal launch Skate are being put into place by Cristobal Joseph, a Panamanian carpenter, who has 15 years of experience with the U.S. Navy and the Panama Canal. He is now learning ship repair and shipwright skills.



1960 and moved from the Industrial Division area in Cristobal to the Dredging Division yard in Gamboa. Some of the men already had boat building and repair experience and others had trades which were good background for their

LAUNCHES Ahoy!

new work. Their job: to maintain, repair, and build small floating equipment for the Panama Canal.

They took part in a ceremony recently at the Gamboa Launch Landing and proudly watched the official transfer to the Navigation Division of the *Manta* and the *Mola*, two brand new harbor launches. The men had reason to be proud. They had built the launches themselves from stem to gudgeon—and with the exception of the diesel engines, were responsible for every bolt, every nail, and every coat of paint.

Two other harbor launches now are under construction at Gamboa. They are the *Tarpon* and *Lark*, both Navigation Division launches, which are scheduled to go into service next year.

Under the direction of Kenneth Bailey, an expert shipwright with many years of experience with the Panama Canal, the members of the Launch Repair Unit also take care of the recon-

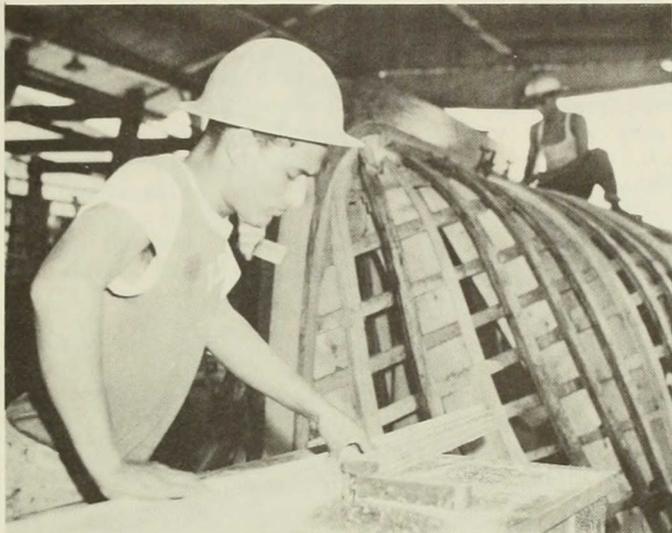
struction and repairs necessary for all other Panama Canal small floating equipment. They are getting some new ideas—such as that of building a boat upside-down—and putting them into practice. This method, which might be compared to building a house starting with the roof, is expected to work very well with small floating equipment. It is being tried out with the mail-and-freight launch *Tarpon* now taking shape in the shop.

It takes training to do the precise job that Omar Martínez is completing here at the Industrial Division Launch Repair Shop. He is making repairs to the quadrant on the launch *Anayansi*. Martínez has been with the Canal only 6 months and is learning new tricks of the trade every day although he has had many years of experience in boat building and ship repair work in Panama.



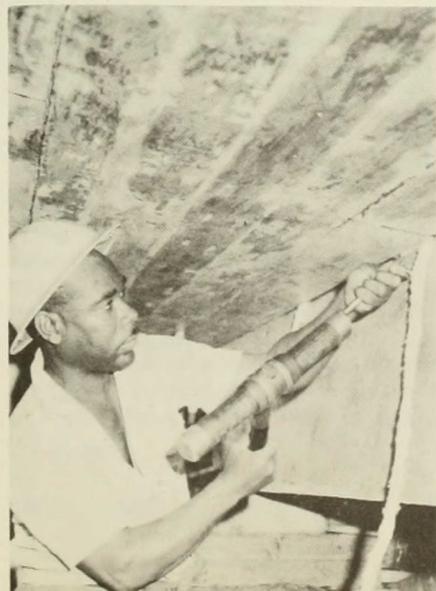


Paint scraping is part of the work at the Launch Repair Shop. Here veteran employee James Miller works on the Oriole, a Balboa launch which is undergoing extensive repairs at Gamboa.



That upside-down boat in the background is the U.S. Tarpon, a mail and freight launch in the making. The young workman in the foreground is Napoleón Myta, a 26-year-old Panamanian who is cutting the framing which will be bent lengthwise over the molds and ribbands of the new launch. He has been with the Canal 6 months and is using skills he learned as a boat builder in Panama as well as new ones he is learning at the Launch Repair Shop.

Caulking a garboard strake of the Panama Canal Launch Oriole is Joshua E. Lowe, who learned boat repair work during a 16-year period of employment with the U.S. Navy. He has been working with the Panama Canal for the past 2 years and is becoming an expert on small boat repair work of all types.



Harold Ranger, right, a third-year boat builder and shipwright apprentice, works with George Phillips, a helper who has been with the Canal for 22 years. Ranger is a graduate of the Canal Zone schools and is learning a trade with the Panama Canal Industrial Division. Phillips is a veteran who is one of the men transferred from the Dredging Division to the new Launch Repair Facilities in Gamboa.

Survey of jobs is being made by William J. Kilgallen, right, position classification specialist in the Personnel Bureau, who is shown interviewing a group of employees at the Gamboa Launch Repair shed. The men are working on the U.S. Tarpon, a new launch being built for the Navigation Division. From left to right are Carlos H. Herrera, a foreman; Dimas Cornejo, Francisco Martínez, and Napoleón Myta.





Members of the office staff of the Marine Bureau are shown here with Capt. Richard G. Jack, bureau director. Left to right are: Mrs. Ethel Brown, statistical clerk; Walter A. Dryja, assistant to the Marine Director; Captain Jack; Mrs. Joan C. Fitzgerald, secretary, and Peter N. Riley, acting administrative officer during leave of absence of Charles T. Jackson, bureau administrative officer.

MARINE DIRECTOR Capt. Richard G. Jack, a man who has made his opinions heard and felt in the Canal organization for the past 2½ years, will be leaving the Isthmus early this month for a new assignment as Commanding Officer of the U.S. Naval Receiving Station at Brooklyn, N.Y.

As he prepares to depart the Isthmus, Captain Jack can look back at many improvements in Canal operations during his stay here. A partial listing of these includes:

A new work plan for deckhands which has reduced their hours, increased their average pay, and improved working conditions for them. (The deckhands now have work uniforms supplied by the Canal and their average pay has increased approximately \$10 per week.)

Establishment of career Port Captain positions on both sides of the Isthmus and appointment of civilian employees to the posts for the first time in the history of the Canal. (Until the past 2 months, both Port Captains always have been officers of the U.S. Navy.)

Continued reduction in the average time which transiting ships spend in Canal Zone waters. The average in fiscal year 1962 was 15.5 hours, compared with an average of 21.3 hours in 1959. (In recent testimony before Congress, Governor Fleming said of this: "I think that those employees directly and indirectly engaged in the transiting of vessels are to be commended for this improved performance.")

Permanent 24-hour operation of the Canal for the first time since it opened on August 15, 1914. (This change is expected to result in still further reduction in the average time which transiting vessels spend in Canal Zone waters.)

Modification of certain parts of the locks to permit safer passage of larger ships than ever before possible. (Cer-

tain outside batters near the bottom of the chamber walls in Pedro Miguel Locks were blasted away to remove the interference they formerly offered to the bilge keels of large ships.)

A new definitive statement giving the maximum dimensions of ships which would be accepted for transit of the Canal and otherwise defining the physical limitations of the waterway. (The statement set maximum draft limitations of 36½ feet when Gatun Lake is at 85 feet.)

Establishing that Gatun Lake can be permitted to rise to 87½ feet to permit even deeper draft vessels to transit safely. The lake equalled the highest

He Made Changes

level in its history, 87.6 feet, during January. (Each additional foot of draft permitted a vessel can mean as much as \$10,000 in cargo revenue for the ship operator.)

Admittedly, he's been a burr and a hairshirt to many in the Canal organization. But even his critics usually acknowledge his energetic drive toward the goals he set for himself and the Canal.

One colleague recently commented: "Captain Jack's been determined that the Canal be utilize^d to the limits of its capacity. He set out to determine what those limits were and how to increase them, where possible. In the

process, I think he's proved that he has one of the best engineering minds in the Canal organization."

This determination, established early, continued right through Captain Jack's tour of duty. When he discovered that the bottom of the Canal was creeping slowly upward in spots—and thereby reducing the water depth available for transiting ships—he activated a continuing program for having the high spots dredged out, personally keeping tabs on the work.

Captain Jack insists that the improvements which have been made—and others for which the way has been paved—are "Marine Bureau achievements; not mine. And many outside of the Marine Bureau have worked effectively to make them possible."

This is typical of the man. No shrinking violet, neither is he slow to praise others when praise is warranted. Repeatedly, in many ways, he has demonstrated his pride in Marine Bureau personnel.

"It's a good organization," he says. "There are hundreds of excellent, conscientious, able employees in it who make operation of the Canal smooth and efficient. I've had excellent cooperation all along the line in the things I've tried to do."

The accomplishments during Captain Jack's tour of duty haven't been simple. He's stuck his neck out in support of unproved innovations. He's steadfastly supported subordinates who have done likewise—and suddenly found themselves in the vise of hindsight second-guessing by others.

Not an austere man, nor an adherent of routine, Captain Jack made the rounds of Marine Bureau operations without regard for the clock. He's visited working units at odd hours of the night, made hospital calls on injured Marine Bureau employees, and

(See p. 23)



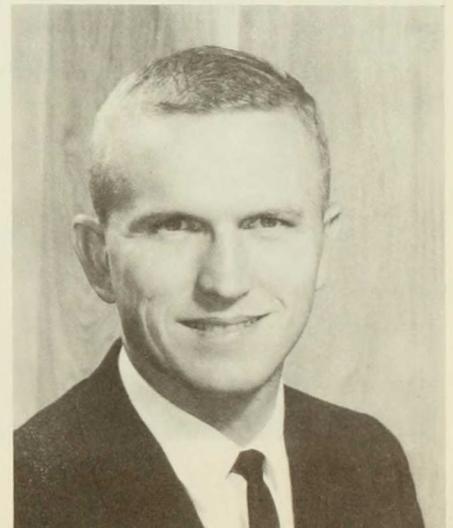
Neil A. Armstrong, 32, was born in Wapakoneta, Ohio. He is 5 feet 11 inches tall, weighs 165 pounds, and has blond hair and blue eyes. The son of Mr. and Mrs. Sterber Armstrong of Wapakoneta, he is married to the former Janet Elizabeth Shearon of Chicago, Ill. They have one son, Eric, 5. His last assignment was as NASA test pilot on the X-15 program at Edwards Air Force Base, Calif.

THE ASTRONAUTS



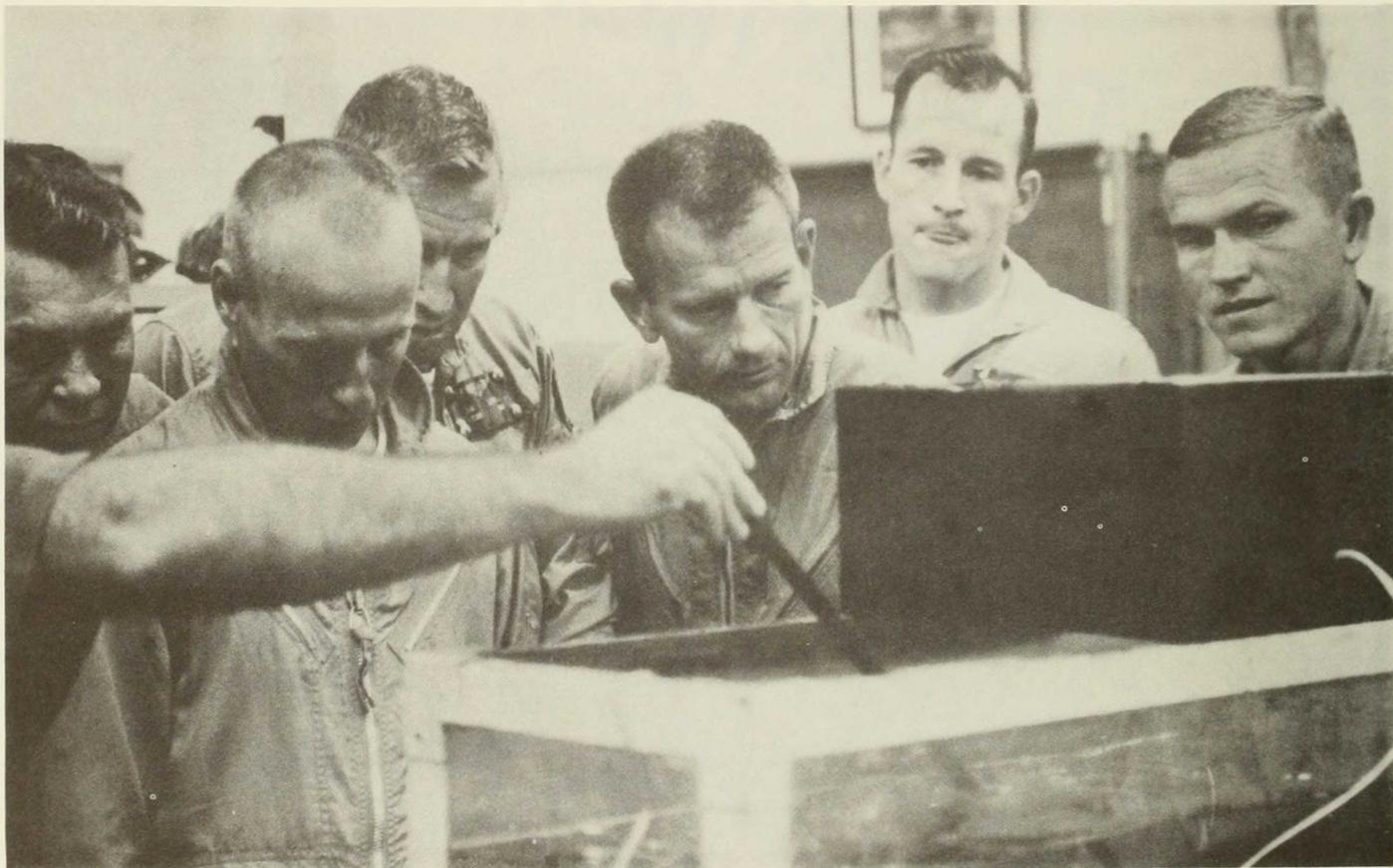
It's a far cry from the age of electronic gadgets and a space craft to a sling shot, homemade, but that's the temporary transition Astronaut John Glenn made. This weapon could be handy for jungle survival. The National Aeronautics and Space Administration's 16 astronauts participated in tropic survival training last month at Albrook Air Force Base in the Canal Zone.

Frank Borman, 34, was born in Gary, Ind. He is 5 feet 10 inches tall, weighs 163 pounds, and has blond hair and blue eyes. The son of Mr. and Mrs. Edwin Borman of Phoenix, Ariz., he is married to the former Susan Bugbee of Tucson, Ariz. They have two sons—Frederick, 11, and Edwin, 9. The Air Force major's last assignment was as instructor at the Aerospace Research Pilot School at Edwards Air Force Base, Calif.



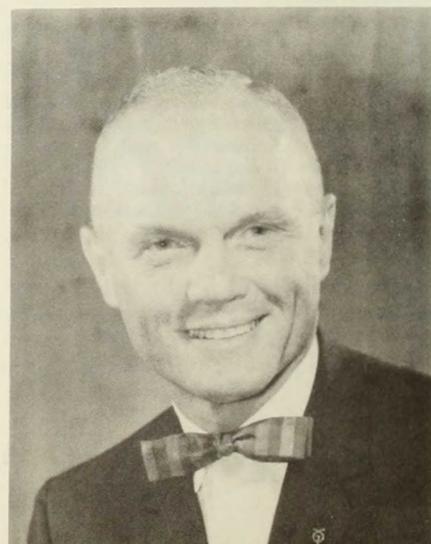


M. Scott Carpenter, 38, was born in Boulder, Colo. He is 5 feet 10½ inches tall, weighs 155 pounds, and has green eyes and brown hair. His wife is the former Rene Louise Price of Clinton, Iowa. They have four children—Mark Scott, Roy Jay, Kristen Elaine, and Candace Noxon. He is a lieutenant commander in the Navy. Carpenter was the pilot of the Mercury-Atlas orbital flight May 24, 1962. He completed a successful three-orbit space flight mission.



Classroom activities were part of the astronauts' training before they took to the jungle in pairs to test their abilities. Here tropical water animal species they might encounter are identified by instructor H. Morgan Smith.

John Herschel Glenn, Jr., 41, was born in Cambridge, Ohio. He is 5 feet 10½ inches tall, weighs 168 pounds, and has green eyes and red hair. He is the son of Mr. and Mrs. John Glenn of New Concord, Ohio, and his wife is the former Anna Margaret Castor of New Concord. They have two children, John David and Carolyn Ann. A lieutenant colonel in the Marine Corps, he has been awarded the Distinguished Flying Cross five times and holds the Air Medal with 18 clusters. He was pilot for the Mercury-Atlas 6 three-orbit space flight February 20, 1962.



Charles Conrad, Jr., 32, was born in Philadelphia, Pa. He is 5 feet 6½ inches tall, weighs 138 pounds, and has blond hair and blue eyes. The son of Charles Conrad, Sarasota, Fla., and Mrs. Frances V. Sargent, Haverford, Pa., he is married to the former Jane DuBose of San Antonio, Tex. They have four sons—Pete, 8, Thomas, 6, Andrew, 4, and Christopher, 2. He is a Navy lieutenant and his last assignment was as safety officer for Fighter Squadron 96.

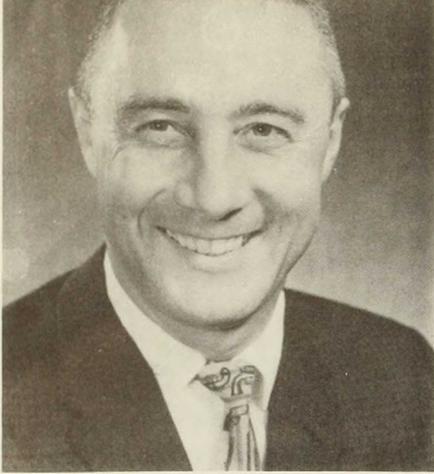


Astronaut James Lovell watches a boa constrictor, one of the jungle hazards included in the indoctrination.



Leroy Gordon Cooper, 36, was born in Shawnee, Okla. He is 5 feet 9 inches tall, weighs 150 pounds, and has blue eyes and brown hair. His mother, Mrs. Leroy G. Cooper, lives in Carbondale, Colo. His father, who died in 1960, was a colonel in the Air Force. Cooper's wife is the former Trudy Olson of Seattle, Wash. They have two daughters, Camala K. and Janita L. He is a major in the Air Force. Cooper completed a successful 22-orbit mission May 16, 1963, traveling 575,000 miles, or more than enough for a round trip to the moon.





Virgil Ivan Grissom, 37, was born in Mitchell, Ind. He is 5 feet 7 inches tall, weighs 150 pounds, and has brown eyes and brown hair. His parents are Mr. and Mrs. Dennis D. Grissom of Mitchell. His wife is the former Betty L. Moore, also of Mitchell. They have two sons, Scott and Mark. A major in the Air Force, he holds the Distinguished Flying Cross and Air Medal with cluster. Grissom made a sub-orbital space flight down the Atlantic range from Cape Canaveral July 21, 1961.

TROPIC SURVIVAL SCHOOL

AIR FORCE CREWMEN of the U.S. Air Forces Southern Command are called upon to fly, as a matter of routine, over some of the most rugged country in the world; their air routes take them across mountain ranges, over broad lakes and streams, tropical rainforests and thick jungle, and arid wasteland.

The nature of these airmen's mission always presents the possibility that any of these airmen could find himself on the ground and afoot in the wilderness, with the problem of surviving following a successful forced landing.

To teach these aircrew members of the U.S. military services survival methods under all types of circumstances, the U.S. Air Force operates the Tropic Survival School at Albrook Air Force Base.

At the school, headed by a veteran anthropologist, 5 days of lessons begin with emergency procedures for crash landing, ditching, and bailout and use of the survival equipment each plane carries, ranging from life vests and rafts to flashlights and signalling mirrors.

Students then progress to the study of survival techniques, learning what plant and animal life is

poisonous and which edible, how to erect shelters of natural products, techniques of survival medicine, and how to meet the people who inhabit the undeveloped and primitive regions of Latin America.

A small zoo of animals to be found in Latin America serves as an invaluable training aid for this part of the course.

When the student has been taught how to survive after he is forced down, he then learns how to travel over any type of terrain whether lowlands, jungle, cloud forest, mangrove, secondary growth, or desert, so that he can make his own way back to civilization, if searchers fail to locate him.

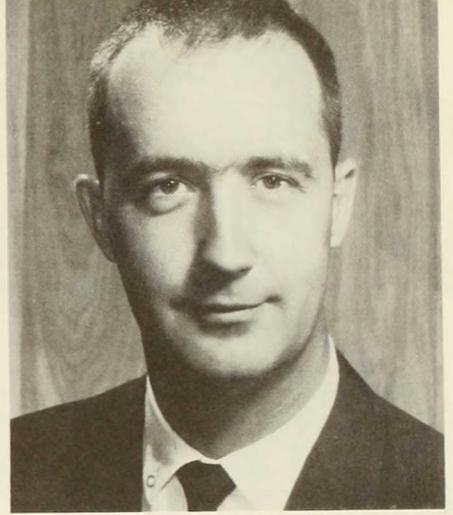
The course culminates in an exercise under "field conditions," so that each student can practice the techniques he has learned in classes, building traps and shelters, constructing rafts and hammocks, and making an overland trek.

Graduation day finds each student prepared for survival in the Amazon jungles and rivers and equally prepared to survive in the freezing cold, waterless highlands of the Altiplano.

James A. Lovell, Jr., 34, was born in Cleveland, Ohio. He is 5 feet 11 inches tall, weighs 165 pounds, and has blue eyes and blond hair. He is the son of Mrs. Blanch Lovell, Edgewater Beach, Fla., and his wife is the former Marilyn Lillie Gerlach of Milwaukee, Wis. They have three children—Barbara Lynn, 9, James Arthur, 7, and Susan Kay, 4. A Navy lieutenant commander, his last assignment was as flight instructor and safety officer with VF 101 at the Naval Air Station, Oceana, Va.



James A. McDivitt, 33, was born in Chicago, Ill., the son of Mr. and Mrs. James McDivitt of Jackson, Mich. He is 5 feet 11 inches tall, weighs 155 pounds, and has brown hair and blue eyes. He is married to the former Patricia Ann Haas of Cleveland, Ohio, and they have three children—Michael, 5, Ann Lynn, 4, and Patric W., 2. An Air Force captain, his last duty assignment was as experimental flight test officer at Edwards Air Force Base, Calif.



Astronaut Walter Schirra takes a piece of wild pork from roasting stick, part of a jungle meal.

Walter Marty Schirra, Jr., 40, was born in Hackensack, N.J. He is 5 feet 10 inches tall, weighs 170 pounds, and has brown hair and brown eyes. His parents are Mr. and Mrs. Walter M. Schirra of Honolulu, Hawaii, where his father is a civil engineer with the Air Force. His wife is the former Josephine C. Fraser of Seattle, Wash. They have two children, Walter III and Suzanne. Schirra, a commander in the Navy, holds the Distinguished Flying Cross and two Air Medals. He completed a successful six-orbit flight October 3, 1962.





Elliot M. See, Jr., 35, was born in Dallas, Tex. He is 5 feet 8 inches tall, weighs 150 pounds and has brown hair and blue eyes. He is the son of Mr. and Mrs. Elliot See of Dallas. His wife is the former Marilyn Jane Denahy of Georgetown, Ohio. They have two daughters, Sally, 6, and Carolyn, 5, and a son, David, 1. His last assignment was as an experimental test pilot for General Electric Co. at Edwards, Calif.



Astronaut Edward White accepts a piece of the heart of a palm tree from an Air Force instructor as part of a jungle meal.

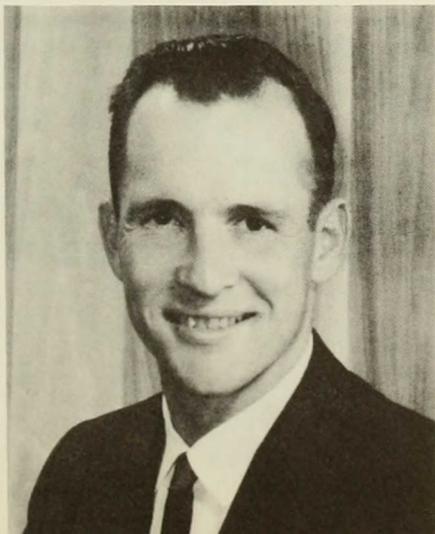
Alan B. Shepard, Jr., 39, was born in East Derry, N.H. He is 5 feet 11 inches tall, weighs 160 pounds, and has blue eyes and brown hair. His parents are Colonel and Mrs. Alan B. Shepard of East Derry, his father being a retired Army officer. His wife is the former Louise Brewer of Kennett Square, Pa. They have two daughters, Juliana and Laura. Shepard is a commander in the Navy. He was the pilot for the United States' first manned space flight, sub-orbital, down the Atlantic range May 5, 1961.



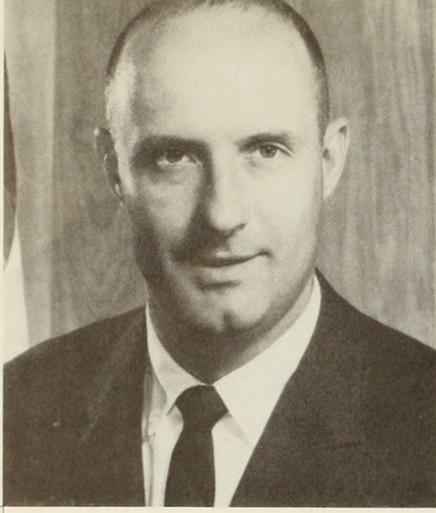
Donald K. "Deke" Slayton, 39, was born in Sparta, Wis. He is 5 feet 10½ inches tall, weighs 160 pounds, and has blue eyes and brown hair. His parents are Mr. and Mrs. Charles S. Slayton of Sparta. His wife is the former Marjorie Lunney of Los Angeles, Calif. They have one son, Kent. Slayton is a major in the Air Force. Slayton was to have been pilot for the mission later assigned to Astronaut Carpenter when a heart condition prevented Slayton's making the flight.



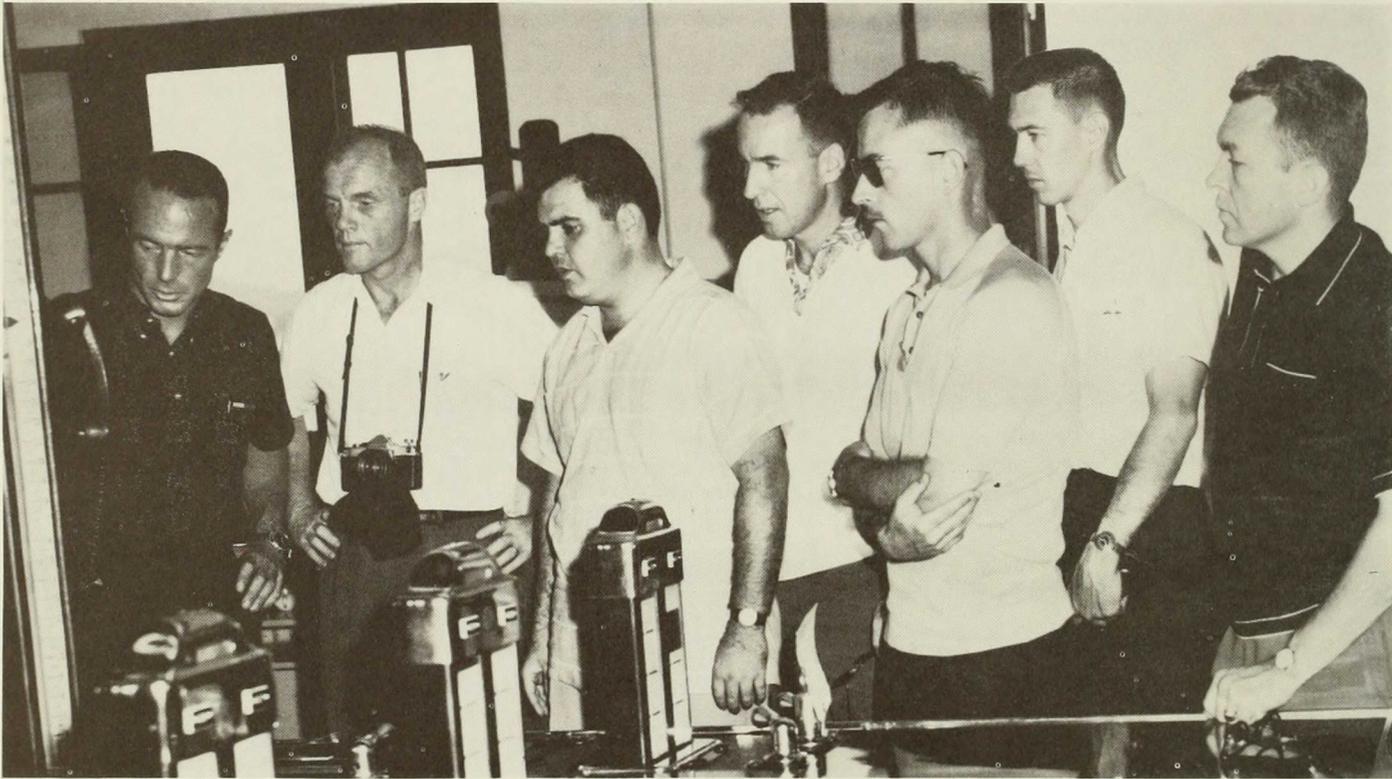
Astronaut Scott Carpenter in foreground prepares to taste items on the menu for a jungle meal—including wild deer, wild pork, iguana (lizard), yucca, plantain, and taro root.



Edward H. White II, was born in San Antonio, Tex. He is 5 feet 11 inches tall, weighs 171 pounds, and has auburn hair and brown eyes. The son of Major General and Mrs. Edward H. White of St. Petersburg, Fla., he is married to the former Patricia Eileen Finegan of Washington, D.C. They have two children—Edward, 9, and Bonnie Lynn, 6. The Air Force captain's last assignment was as an experimental test pilot at Wright-Patterson Air Force Base, Ohio.

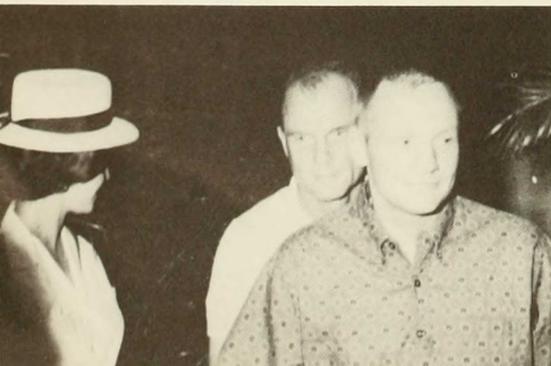


Thomas P. Stafford, 32, was born in Weatherford, Okla., the son of Mrs. Mary Ellen Crabtree of Weatherford. He is 6 feet tall, weighs 170 pounds, and has black hair and blue eyes. He is married to the former Faye Laverne Shoemaker, also of Weatherford. They have two daughters—Dianne, 8, and Karen, 5. An Air Force captain, his last assignment was at the USAF Aerospace Research Pilot School at Edwards Air Force Base, Calif.



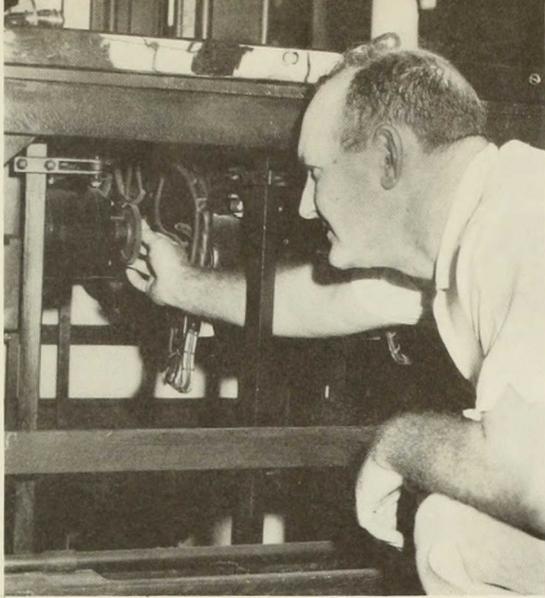
Some of the astronauts and members of the official NASA party had time before they left the Isthmus to go sightseeing, including a visit to Miraflores Locks. Here they're briefed on the locks controls by Frank Azcárraga, third from left, of the Canal Zone Guide Service.

An informal picture of Astronauts Neil Armstrong, foreground, and John Glenn, in the lobby of the Tivoli Guest House. At left is Holda Sánchez of the Canal Zone Guide Service, one of a group of guides on hand to help during the press conference which followed the training session.

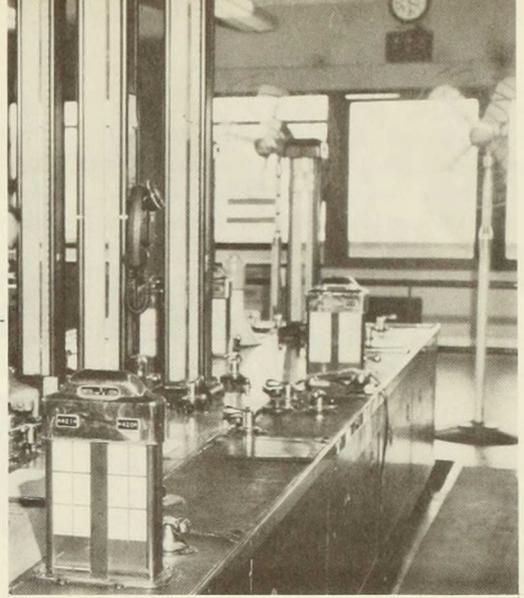


John W. Young, 32, was born in San Francisco, Calif. He is 5 feet 9 inches tall, weighs 168 pounds, and has brown hair and green eyes. He is the son of William H. Young of Orlando, Fla. His wife is the former Barbara Vincent White of Savannah, Ga. They have two children—Sandra, 5, and John, 3. The Navy lieutenant commander's last assignment was with Fighter Squadron 143 at Miramar Naval Air Station, San Diego, Calif.





'Slave' Motors



C. M. Holcomb, leader, lock operator, electrician, at Miraflores Locks, examines one of the motors which actuate indicators showing position of miter gates, valves, and water level in locks chambers. These motors purr quietly beneath the table top of the locks control board.

mitter, lead wires run to similar points on the winding of the receiver. Part of the transmitter motor revolves or moves with the machine to which it is attached.

As it revolves, the current sent to the receiver causes its moving part to revolve to the same angular position. This moving part of the receiver, known as the rotor, is geared to a pointer, or small model of the locks machine, or to some other indicating device, which it drives.

The present motors for control house indicators are smaller than the original ones, which were 7¼ inches in diameter. Those now in use measure only about 5½ inches in diameter and weigh only about half as much. The original motors were replaced during the change from 25-cycle to 60-cycle current completed in 1958.

Indicators are used for all machinery operated from the control house, to show the operator the position of each machine at all times. In the case of some machines, operation of a motor lasts only a few seconds, and indication of the position of the machine is given by simple means of red and green lights.

Such machines are the cylindrical valves and auxiliary culvert valves. It is never expected, in normal operation, to stop these machines at any intermediate point in their travel. Only the completed operation is indicated by the red and green lights.

General Electric was awarded the construction days contract for central-

These are some of the indicators atop the control boards operated by the motors. A pair of rising stem valves is represented by the double faced index in the foreground, with horizontal lines to mark the quarter, half, and three-quarter openings. The tallest instruments show level of the water in the various chambers.

From this...

WIDE MODERN use of selsyn (self synchronizing) electric motors can be traced back directly to original equipment installations for the Panama Canal, one of the earliest, if not the earliest, major uses of such motors. The Canal selsyn systems still are in operation to remotely indicate the position of lock gates and other machinery.

Modern versions of these selsyn motors, many in miniaturized form, are used to indicate landing gear and flap positions for aircraft, and by several manufacturers for elevator control. Use for Navy fire control, a function they still have, dates back to World War I.

The selsyn motor was invented about 1908 or 1910 by A. E. Bailey, Jr., for remote indicator measurement of water level, according to historical data of the General Electric Co.'s Specialty Motor Department and recollections of some of the senior members of the department.

Selsyn motors are used on Canal machinery which may be stopped at intermediate points of travel: machinery to move miter gates, rising stem valves, and to indicate water level in locks chambers. They make possible synchronous indicator systems.

A complete synchronous indicator consists of a transmitter motor at the machine in the lock wall and a receiver, or "slave," motor at the switchboard in the control house. Transmitter and receiver are identical. From equidistant points on the winding of the trans-

... for these

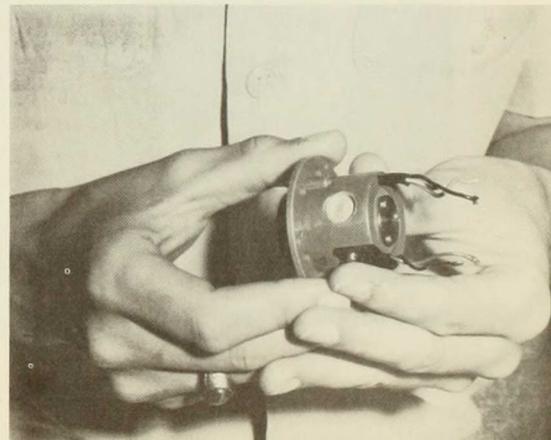
ized interlocking controls for locks operation on the assertion of one of its engineers, Edward M. Hewlett, that he could make the system work. But it hadn't been devised yet when the contract was awarded.

Hewlett consulted with the engineer of a firm that made interlocking railroad switch devices, to obtain a bid on that part of the work. He was told that he was suggesting something that "can't be done at the price you require."

Weeks of reading, designing, and experimenting by Hewlett followed. Within 6 months he had a working model of the indicating system and the interlocking system, the ones that were accepted, operating when the Canal opened, and have remained basically unchanged ever since.

One of the latest type miniaturized selsyn-type motors used to indicate landing gear and wing flap positions in civilian, commercial, and military aircraft.

To this



WHAT'S THE QUESTION?

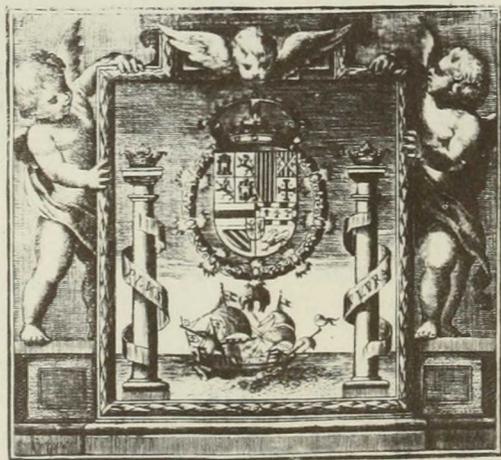
RECOPILACION DE LEYES DE LOS REYNOS DE LAS INDIAS.

MANDADAS IMPRIMIR, Y PVBLICAR
POR LA MAGESTAD CATOLICA DEL REY,

DON CARLOS II.
NUESTRO SEÑOR.

VA DIVIDIDA EN QVATRO TOMOS,
con el Indice general, y al principio de cada Tomo el Indice
especial de los titulos, que contiene.

Sig. Almad TOMO PRIMERO. *Don Carlos II*



En Madrid: POR IVLIAN DE PAREDES, Año de 1681.



WAS THE MOON full at the time Morgan attacked Old Panama?

What does the word "maru" mean? Many of the Japanese ships that transit the Canal carry the word "maru" as part of the name.

When was the Hotel Washington, on the Atlantic side of the Isthmus, built and opened?

These are just three of the some 15,000 reference and research questions asked yearly at the Canal Zone Library. About 1,000 questions a month is the average in the Main Library, Ancon, and some 60 percent of that number represent official queries.

Mrs. Beverly C. Williams is chief reference librarian. Official questions, research questions, Panama Collection questions, and any others that require extensive research come to her desk.

Mrs. Catherine Brown serves as assistant reference librarian, Mrs. Alice Turner and Mrs. Verna Winstead are relief reference librarians.

The Canal Zone Library has been answering questions for almost half a century. It was established August 24, 1914, by Colonel Goethals as the official technical reference library for the Panama Canal organization. Public library services were added later, but the principal mission of the Reference Librarian still is to answer reference or research questions of the Canal organization.

One of the oldest, and most interesting, of the books with which the research librarian may work is a four-volume set of old Spanish law books, "Recopilación de Leyes de los Reynos de las Indias," a compilation of laws printed in Madrid, Spain, in 1681 by order of His Catholic Majesty King Carlos II. The books were presented to

Title page of an old Spanish law book, one of a set dating back nearly three centuries.

the Canal Zone Library by Frank H. Wang, who before his retirement was adviser to the Canal Zone Governor. The volumes are of handmade watered paper, bound in skin, with hinges and lacings of leather. Pages are adorned with ornamental initial letters, characteristic of early handwritten and printed work.

Mrs. Beverly C. Williams, chief reference librarian, at left uses a microfilm reader which projects reproductions of pages of newspapers onto a screen on which they may easily be read in the search for reference data.

And at right she inspects one of the library's many maps. These maps date back to 1453, with one a copy on linen of a map now in the British Museum. There are a number of other original drawings, some from the archives of French construction days, others reportedly made by Colombian and Venezuelan Jesuit priests.

Despite the fact that the books are nearing the three-century mark they still may be consulted in the course of research work, as many of the laws they contain have been applicable in Panama.

The Canal Zone Library contains approximately 200,000 items, including about 135,000 books, as well as documents, pamphlets, bound and unbound magazines, maps, prints, and manuscripts. Besides this material, the reference librarian has a type of working reference file. Since the first reference librarian was assigned to the Canal Zone Library, each has contributed to this file. Here are to be found the reference librarians' own notes on difficult and unusual questions that have been asked—and answered. These touch on subjects that would not show up in a card catalog, like the question on whether the moon was full at the time Morgan attacked Old Panama.

The answer to that, by the way, is that quite likely the moon was full, for the attack came in January 1671. A study of phases of the moon of that date indicated a full moon was due.

Maru? According to Japanese-speaking people in Panama, the word means round, or complete, or perfect. One of the Canal Zone librarians, by chance, found this quotation in a novel she was reading:

"Castles were called that in the old feudal days . . . because they were complete in themselves. So is a ship at sea."



Official services of the Canal Zone Library reference staff are available from 7:15 a.m. to 4:15 p.m., weekdays, and non-official reference service is available from 9:30 a.m. to 8:00 p.m., on Mondays through Fridays. Reference assistance also is available on Saturdays.

Anyone with a question is welcome to bring it to the Canal Zone Library research staff.

The reference service, besides satisfying the requirements of the Panama Canal organization, lends assistance to other U.S. agencies on the Isthmus including the Armed Forces and the State Department, and extends non-official service to employees of the U.S. Government and families and other residents of the Isthmus.

The Canal Zone Library assumes the auxiliary role of elementary, junior high, high school, and college library in its considerable service to students and teachers. The reference service is available in the branch libraries of the Canal Zone, as well as the Main Library, and branch librarians and attendants in circulating libraries refer questions to the reference librarian.



Mrs. Alice Turner, left, assistant reference librarian, and Mrs. Verna Winstead, general services librarian and relief reference librarian.

CANAL HISTORY

50 Years Ago

PLANS for a tunnel for a Canal crossing after its completion were abandoned because of cost. A tunnel in the vicinity of Paraiso Junction had been considered. A committee was appointed to study the possibility of utilizing car floats as a means of communication between the east and west banks after removal of the dike at Gamboa.

Resignation of Maurice H. Thatcher as a member of the Isthmian Canal Commission and head of the Department of Civil Administration, was forwarded to Washington, to take effect August 8.

Slides in the Culebra Cut section became unusually active. Since February 5, when a major break occurred, there had been five different movements, each of which upheaved the bottom of the Canal, destroyed construction tracks, and, in some cases, damaged equipment.

25 Years Ago

A 1-YEAR-OLD cabin boy was on the crew roster of the Scandinavian motor-vessel *Rena*, which transited the Canal en route from Manila to New Orleans. His father was master of the ship, his mother signed on as stewardess and another of their sons, 7 years old, also was carried as a cabin boy.

Work was nearing completion on the Bald Rock Lighthouse, to replace the Bona Island light, long known as the last Panama Canal lighthouse southward. The new light is across a 150-foot channel from Bona Island. Engineers, mechanics, and others at work on the new light were conveyed by the lighthouse tender *Favorite*.

A Navy Department report to the House Merchant Marine Committee

opposed construction of a Nicaraguan canal, recommending further study of the billion-dollar project. Commerce and War Department and Federal Maritime Commission spokesmen were quoted as voicing similar attitudes.

10 Years Ago

MARCEL OLLIVIER, Charge d'Affaires of the French Embassy in Panama, planted the first hibiscus in a hedge at the old cemetery at Paraiso where a number of Frenchmen who died during the Canal construction era are buried. The cemetery had been cleared of undergrowth and the hedge planting was part of the work toward making it a memorial to the French contribution to construction of the Canal.

A copy of the film "Operation Doorstep," showing a recent atomic explosion and its effect on two houses during tests in Nevada, was received for showing at a series of Civil Defense town meetings.

Main offices of the Locks Division were transferred from the Administration Building back to the former headquarters at Pedro Miguel Locks.

One Year Ago

PASSENGERS disembarking from the New Zealand liner *Rangitiki* were among the first Canal Zone visitors arriving by ship to be greeted by members of the new Canal Zone Guide Service.

An earthquake rated as Force IV in intensity shook the Balboa Heights Administration Building. Center of the quake was some 110 miles southwest of Balboa, off the Cape Mala area. No damage was reported.

RETIREMENTS

EMPLOYEES who retired in May, with their positions at time of retirement and years of Canal service:

Amariz Camarena, Carpenter, Terminals Division, Atlantic Side; 13 years, 11 months, 12 days.

Alexander Centeno, Scrap Materials Sorter, Supply Division, Pacific Side; 31 years, 4 days.

Cristino Chifundo, Guard, Terminals Division, Atlantic Side; 16 years, 8 months, 22 days.

Wilbur J. Dockery, Lead Foreman (Fuel Operations) Terminals Division, Atlantic Side; 34 years, 8 months, 27 days.

James D. Dunaway, Finance Branch Superintendent, Postal Division, Pacific Side; 29 years, 1 month, 28 days.

Cyril L. Edghill, Guard, Terminals Division, Atlantic Side; 44 years, 8 months, 21 days.

Rupert R. Foster, Leader Flame Cutter, Supply Division, Pacific Side; 33 years, 5 months, 11 days.

Jonathan Harris, Cargo Marker, Terminals Division, Atlantic Side; 16 years, 8 months, 13 days.

Leon V. Heim, Customs Inspector, Customs Division, Atlantic Side; 15 years, 8 months, 29 days.

Arthur J. Hunter, Bookbinder, Printing Plant, Atlantic Side; 37 years, 4 months, 6 days.

James R. Johnston, Supervisory Operating Accountant, Accounting Division, Pacific Side; 29 years, 4 months, 27 days.

Albert King, Leader Seaman, Navigation Division, Atlantic Side; 23 years, 15 days.

John D. Lowe, General Foreman (Docking and Undocking), Navigation Division, Atlantic Side; 12 years, 4 months, 29 days.

Mrs. Marguerite Maphis, Appointment Clerk, Personnel Bureau; 19 years, 1 month, 18 days.

Thomas Marial, Guard, Terminals Division, Atlantic Side; 37 years, 7 months, 10 days.

Lyle B. Morau, Police Sergeant, Police Division, Pacific Side; 18 years, 3 months, 24 days.

Frederick O. Roland, Senior High School Teacher, Division of Schools, Atlantic Side; 23 years, 5 months, 7 days.

Walter T. Schapow, Leader Machinist, Industrial Division, Pacific Side; 26 years, 9 months, 5 days.

Robert J. Sieler, Window Clerk, Postal Division, Pacific Side; 11 years, 8 months, 3 days.

Channan Singh, Stevedore, Terminals Division, Atlantic Side; 33 years, 6 months, 18 days.

Freddie S. Southerland, Police Station Clerk, Police Division, Pacific Side; 23 years, 9 months, 1 day.

Miss Emily M. Thomas, Presser (Garment), Supply Division, Pacific Side; 21 years, 9 months, 17 days.

Leonard A. Thompson, Stevedore, Terminals Division, Atlantic Side; 15 years, 11 months, 24 days.

Robert Van Wagner, Chief, Employee Services Branch, Personnel Bureau; 24 years, 4 months, 15 days.

Joel Williams, Fork Lift Operator, Terminals Division, Atlantic Side; 43 years, 28 days.

ACCIDENTS

FOR
THIS MONTH
AND
THIS YEAR

MAY

ALL UNITS

YEAR TO DATE



CASES

'63 198
'62 205

1266(36) 1231



CASES

'63 19
'62 10

88(9) 50



DAYS
ABSENT

'63 123
'62 29

2761 7182

() Locks Overhaul injuries included in total.

ANNIVERSARIES

(On the basis of total Federal Service)

4

SUPPLY AND COMMUNITY SERVICE BUREAU
Eugene G. Wilson
Laborer

ENGINEERING AND CONSTRUCTION BUREAU

Anthony J. Kucikas
Leader Joiner
William S. Walston
Operator, Dipper Dredge
Marco Adonia
Helper Electrician
Robert Bennett
Painter

SUPPLY AND COMMUNITY SERVICE BUREAU

Ignatius F. Prince
Stockman

MARINE BUREAU

Leonard Wolford
Supervisory Marine Traffic Controller
Cyril A. David
Leader Painter
Ripton J. Evelyn
Helper (General)

TRANSPORTATION AND TERMINALS BUREAU

Laurie G. Ashby
Automotive Equipment Serviceman
Horace Lewis
Cargo Checker

CIVIL AFFAIRS BUREAU

William J. Monzon
Customs Inspector
Herbert L. Clark
Clerk

ENGINEERING AND CONSTRUCTION BUREAU

Patrick A. Alexis
Helper Central Office Repairman
B. A. Beluche
Surveying Technician
Douglas Kelly
Oiler (Floating Plant-Boom)
Isaiah MacFarlane
Seaman
Rafael Rodríguez M.
Seaman
Hiram L. Smith
Roofer

HEALTH BUREAU

Ramón G. Caballero
Nursing Assistant (Medicine and Surgery)
Nina I. Mitchell
Nursing Assistant (Medicine and Surgery)
Valentín Navarro
Cook
D. C. Samaniego
Medical Technician (Chemistry)

MARINE BUREAU

Joseph M. Bateman
Leader Lock Operator (Machinist)
Victor H. May, Jr.
Marine Traffic Controller
Rex Victor Sellens
Leader Lock Operator (Machinist)
Rafael Alvarenga
Line Handler (Deckhand)
José A. Avalos
Line Handler (Deckhand)
Matilde Beltrán
Helper Lock Operator
J. de la C. Dutary
Boatman
Sylvester N. Francis
Launch Operator
Charles Hazlewood
Line Handler (Deckhand)
B. Hernández
Line Handler (Deckhand)

Ferdinand L. Laurie
Helper Lock Operator
Aurelio Newball
Clerk
Manuel S. Ponce
Leader Maintencemanceman
Pablo Ramos
Boatman
Sydney J. Richardson
Line Handler (Deckhand)
Joaquín P. Ruiz
Seaman (Launch)
Zephaniah E. Scott
Line Handler (Deckhand)

SUPPLY AND COMMUNITY SERVICE BUREAU

Asla L. Bennett
Utility Worker
Alice A. Bonnick
Sales Section Head
Eldica Cumberbatch
Assistant Baker
José A. Del Cid
Laborer (Heavy)
George L. Douglas
Truck Driver
Mildred R. Henry
Grocery Attendant
Clinton A. Lewis
Milk Plant Worker
Hasborn J. Lindo
Warehouseman
Maud Irene Lynch
Stock Control Clerk
Joseph Rankin
Guard
Ivy Sealey
Grocery Attendant
Prince A. Spencer
Retail Store Supervisor

TRANSPORTATION AND TERMINALS BUREAU

Margaret M. Dietz
Accounting Clerk
F. P. McLaughlin, Jr.
Leader Liquid Fuels Wharfman
Alphonso Bell
Clerk
Oscar A. Lowe
Leader Stevedore (Dock)
Marcelino Morales
Boiler Tender
Leopoldo A. Murillo
Line Handler

PROMOTIONS AND TRANSFERS

EMPLOYEES promoted or transferred between May 5 and June 5 (within-grade promotions and job reclassifications are not listed):

INTERNAL SECURITY OFFICE

Ivan D. Hilliard, Supervisory Security Specialist (General) (Assistant Chief of Internal Security), to Security Officer (Assistant Chief of Internal Security).
Frank Wilder, Security Specialist (General), to Security Specialist.

ADMINISTRATIVE BRANCH

Reinaldo Pérez, Messenger, to Messenger (Motor Vehicle Operator).
Carol L. Vidaurri, Substitute Teacher, Division of Schools, to Clerk-Translator.

CIVIL AFFAIRS BUREAU

Howard J. Toland, Police Private, to Police Sergeant, Police Division.
Carlos A. Díaz, Truck Driver, Dredging Division, to Detention Guard, Police Division.
Frank Berry, Fire Protection Inspector, to Fire Sergeant, Fire Division.
Marguerite G. Arens, Clerical Assistant, to Administrative Services Assistant, Canal Zone Library.

Customs Division

Daniel L. Jenkins, Police Private, Police Division, to Customs Guard.
Joseph F. Dolan, **Charles R. Soukup**, Customs Guard, to Contraband Control Inspector.

Division of Schools

Lucile E. Torstenson, Substitute Teacher, to Teacher (Elementary-U.S. Schools).
Ariosto E. Ardila, Substitute Teacher, Latin American Schools, to Teacher (Senior High-Latin American Schools).
Wilfred E. Layne, Substitute Teacher, Latin American Schools, to Senior High Teacher, Latin American Schools.
Alcides Bernal, **Charlotte A. Toussaint**, Substitute Teacher, U. S. Schools, to Secondary Teacher, Latin American Schools.
Allan B. Forte, Jr., Part-time Teacher, Latin American Schools, to Secondary Teacher, Latin American Schools.
Colón Guardia, **Sergio A. Ruiz**, **Luis P. Sealy**, **Julio C. Sinclair**, Substitute Teacher, Latin American Schools, to Secondary Teacher, Latin American Schools.
Annette P. Córódova, **Millicent F. Forchenev**, **Juan Phillips**, **Luis P. Sealy**, Substitute Teacher, Latin American Schools, to Junior High Teacher, Latin American Schools.
Bridget A. Hogan, **Alba E. Sosa**, **Shailer J. Yearwood**, Substitute Teacher, Latin American Schools, to Teacher (Elementary-Latin American Schools).
Yuda Morhaim, **Thelma E. Osorio**, Substitute Teacher, Latin American Schools, to Part-time Teacher, Latin American Schools.
Ivonne M. Frederick, **Constance A. Gallop**, Substitute Teacher, Latin American Schools, to Elementary Teacher, Latin American Schools.

ENGINEERING AND CONSTRUCTION BUREAU

Electrical Division

Lester H. Fennel, Meteorologist (General) to Meteorologist (Climatology).
Lucio Góndola, Seaman, Dredging Division, to Maintenance Man.
Claude S. Brathwaite, Jr., Laborer (Cleaner) and Waiter (Special) to Laborer (Heavy) and Waiter (Special).

Dredging Division

Charles J. Connor, Mate, Dipper Dredge, to Master, Drill Barge.
Conrad L. Jarvis, Laborer (Heavy) to Messenger.
Vilando B. Wynter, Helper Rigger, Industrial Division, to Laborer (Heavy).
George Parris, Scrap Materials Sorter, Supply Division, to Helper (General).

Engineering Division

Numan H. Vásquez, Electrical Engineer (Equipment) to Electrical Engineer (Power Systems).
Manuel López, Engineering Technician (Electrical) to Electrical Engineering Technician.
Ricardo A. Young, Cartographic Compilation Aid, to Surveying Technician.
Julio Jiménez, Truck Driver, to Messenger (Motor Vehicle Operator).

Maintenance Division

Richard E. Parker, Engineman (Hoisting and Portable) to Leader Engineman (Hoisting and Portable).
Clarence W. Dougherty, Towing Locomotive Operator, Locks Division, to Engineman (Hoisting and Portable).
Harold A. Walker, Oiler, to Refrigeration and Air Conditioning Plant Operator.
Oswaldo Aráuz, Helper Sheetmetal Worker to Roofer.
Gilberto Budil, Truck Driver to Roofer.
Henry G. Fergus, Helper Machinist (Maintenance) to Oiler.
Nicomedes Hidalgo, Laborer to Asphalt or Cement Worker.
José F. Flores, Laborer to Helper Machinist (Maintenance).
Joseph E. Brown, Laborer to Laborer (Heavy).
James D. Maloney, Laborer (Cleaner) to Laborer.

HEALTH BUREAU

Mary B. Egolf, Clerk-Stenographer to Secretary (Stenography), Office of the Director.
Pedro Pérez, Stockman, Supply Division, to Storekeeping Clerk, Coco Solo Hospital.

Gorgas Hospital

Mary F. Rose, Staff Nurse (Surgery) to Head Nurse (Surgery).
Charlene C. Johnson, Dental Assistant (Restorative) to Dental Assistant (General).
José A. Matos, Truck Driver to Medical Aid (Ambulance).

Division of Veterinary Medicine

Dr. Louis Fink, **Dr. Kenneth C. Zimmerman**, Veterinarian (Public Health) to Veterinarian.

Dr. Robert D. Wallace, Veterinarian (Clinical) to Veterinarian.
Dr. Nathan B. Gale, Jr., Veterinarian (Laboratory) to Veterinarian.

Division of Preventive Medicine and Quarantine

Adele V. Argo, Staff Nurse (Obstetrics), Coco Solo Hospital, to Head Nurse (General).
Maxine G. Davis, Clerk-Typist, from Locks Division.

Division of Sanitation

Adal S. Dawes, Laborer, Maintenance Division, to Laborer (Heavy Pest Control).

MARINE BUREAU

Navigation Division

Ivan N. Hardy, Seaman to Leader Seaman.
Oscar A. Jones, Line Handler (Deckhand) to Seaman.
Gordon L. Mesquita, Laborer (Cleaner) to Line Handler (Deckhand).
Damián Gill, Jr., Counterman, Supply Division, to Laborer (Heavy).
Earl W. Worrell, Clerk-Typist, Maintenance Division, to Clerk.
Rupert L. Neblett, **Arlington A. Petro**, Clerk-Typist to Clerk.

Industrial Division

Walter G. Brown, Inspector (Scales and Oil Meters) to Leader Machinist.
Joseph F. Green, **Domingo D. Hinds**, **Robert E. Holland**, **John L. Irwin**, **Gust E. Rose**, Shift Engineer (Mechanical), Electrical Division, to Machinist (Marine).
Candelario Pineda, Leader Painter (Maintenance) to Painter.
Owen E. Christopher, Painter (Maintenance) to Leader Painter (Maintenance).
Roberto Carrasco, Scrap Bailing Machine Operator, Supply Division, to Helper Rigger.
Guillermo Villarreal, Laborer (Heavy), Supply Division, to Painter (Maintenance).
Herman Brown, Helper Rigger to Crane Hookman.
Juan Garcés, Helper Lock Operator to Helper (General).
Gladstone E. Casis, **Vincent C. Lahley**, **Robert A. Lord**, **Hugh L. Reid**, Clerk to Timekeeper.

Locks Division

Denton W. Broad, **Daniel P. Kiley**, **Nils W. Jonson**, Control House Operator to General Foreman (Lock Operations).
Robert V. Dean, Leader Lock Operator (Electrician) to Control House Operator.
Elbert T. Chappell, Jr., Welder, Maintenance Division, to Welder.
Edward B. House, Liquid Fuels Gager, Terminals Division, to Guard.
Rowland R. Hayward, Guard to Towing Locomotive Operator.
James A. Jones, **Marcos F. Rueda**, Painter to Leader Painter.
Adolphus A. Stewart, Carpenter (Maintenance) to Carpenter.
Cayetano De Hoyos, **Marcos Smith**, Line Handler to Helper Lock Operator.

OFFICE OF THE COMPTROLLER

Donald J. Bowen, Supervisory Accountant to Supervisory Operating Accountant (Chief, Agents Accounts Branch), Accounting Division.

SUPPLY AND COMMUNITY SERVICE BUREAU Supply Division

John P. Corrigan III, Supervisory Storage Officer, Storehouse Branch, to Merchandise Management Officer (Housewares), Office of General Manager.

Robert C. Meehan, Assistant Retail Store Manager, Office of General Manager, to Supervisory Storage Officer, Storehouse Branch.

Edward L. Lowe, Retail Store Management to Cafeteria Manager.

Rae N. Ebdon, Transportation Loss and Damage Claims Examiner to Accounting Assistant.

Margaret M. Larrison, Sales Clerk to Voucher Examiner.

Winston M. Haye, Leader High Lift Truck Operator to Supervisory Storekeeping Clerk.

John H. Francis, Clerk to Accounting Clerk.

Alfred A. Robinson, Utility Worker to Warehouseman.

Christiana Cragwell, Bus Boy to Sales Clerk.

Carlton Dawkins, Laborer (Heavy) to Warehouseman.

Sislin Lindsay, Presser (Flatwork) to Presser (Shirts).

Community Services Division

Norman N. Bonnick, Lead Foreman (Grounds) to General Foreman (Grounds).

Roderick L. Hart, Mail and File Clerk to Clerk.

Edward B. Webster, Accounting Assistant to Housing Project Assistant.

TRANSPORTATION AND TERMINALS BUREAU

Barbara Berkowitz, Clerk-Stenographer to Clerical Assistant (Stenography), Water Transportation Division, New Orleans, La.

Terminals Division

Donald C. Parker, **Robert H. Rathgeber**, Liquid Fuels Dispatcher to Lead Foreman (Fuel Operations).

Cedric F. Gittens, Clerk-Typist to Personnel Clerk (General; Typing).

Teófilo Bryan, Seaman, Dredging Division, to Guard.

Félix P. Baltodano, **Santiago Castillo**, **Celio Cedeño**, **Eduardo López**, **Joseph Price**, **Florentino Sánchez**, **Juan A. Vega**, Dock Worker to Stevedore.

Harry Gaile, Dock Worker to Carpenter (Maintenance).

Alfred Davidson, **Glenn H. Durant**, **Carl R. Kinsman**, **Calvin A. Phillips**, **Santiago Sanguillén**, **Gerald A. Small**, **Clemente E. Stevens**, Cargo Marker to Clerk (Checker).

Hurut Sheldon, **Frederick R. White**, Utility Worker, Supply Division, to Cargo Marker.

Roberto N. Hall, **Frances A. Jolliffe**, Utility Worker, Supply Division, to Cargo Marker.

Carlos Grenald, Waiter, Supply Division, to Helper Liquid Fuels Wharfman.

Railroad Division

Ralph L. Davis, Yard Conductor and Road Conductor, to Yard Conductor and Road Conductor and Train Dispatcher.

OTHER PROMOTIONS which did not involve changes of title:

William E. LeBrun, Supervisory Personnel Security Specialist, Internal Security Office.

Horace F. Jenner, Merchandise Management Officer (Housewares), Supply Division, Office of General Manager.

Robert J. Saarinen, Assistant Guest House Manager, Supply Division, Service Center Branch.

Gerald H. Halsall, Housing Project Assistant, Community Services Division.

Mazie C. Schwarzrock, Interpreter (Stenography), Internal Security Office.

Dorothy H. Benny, Office Services Supervisor (Typing), Engineering Division.

Betty M. Ragthgeber, File Clerk, Internal Security Office.

Alice M. Turner, **Verna S. Winstead**, Librarian, Canal Zone Library.

Dora M. McIlhenny, Library Assistant, Canal Zone Library.

Eugene L. Buonviri, **Irma V. Pasco**, Time, Leave, and Payroll Clerk, Accounting Division.

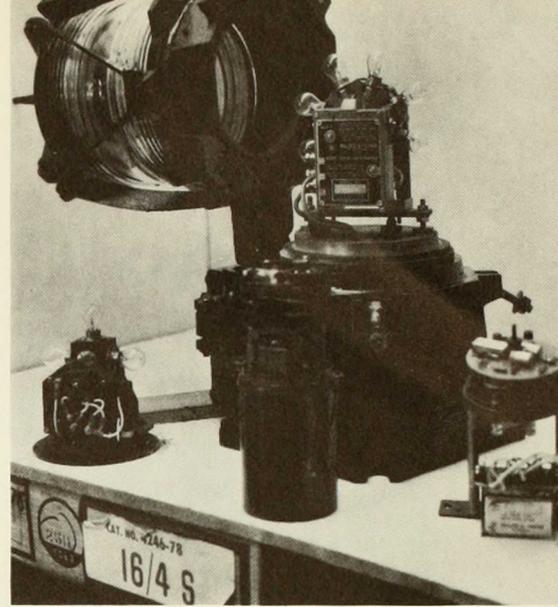
Lloyd E. White, Clerk, Industrial Division.

John Lawrence, Clerk, Maintenance Division.

Luis Fierro, Surveying Aid, Engineering Division.

Juan González, **Charles M. Inniss**, Timekeeper, Industrial Division.

Norma M. Jones, **Pauline S. Landers**, Card Punch Operator, Accounting Division.



Some of the equipment behind the reliability of navigational aids lights. At left is a 4-lamp automatic bulb changer. Center, foreground, is a motor-driven electric flasher, and at right is a transistor operated flasher. In the rear is an 8-lamp automatic bulb changer, being used experimentally.

Mid-Point in Canal

(Continued from p. 5)

with carboloy inserts and actually drilled into the rock 8 to 10 feet by use of a barge-mounted rotary drill machine. The pipe is reinforced with steel rails and filled with concrete after driving.

Nearly half of the approximately 50 wooden pile beacons have been replaced in this manner since 1960. Installation cost of a steel beacon is about \$1,500 and estimated life is at least 20 years.

Wooden beacon installation cost is approximately \$3,000 and life expectancy only 10 years.

Some buoys and beacons bear fractional numbers, such as 60½ and even 60¼. These are supplementary aids installed in critical areas at the request of the Marine Bureau where single devices have been found inadequate.

The red glass in the red lights absorbs approximately 60 percent of the light, resulting in a reduction of nearly 20 percent in visibility distance for them, compared with white lights of the same power. Even the red buoy and beacon minimum visibility distance in clear weather, however, is 5 miles.

A unit of the Dredging Division since 1957, the Aids to Navigation Section now has 82 employees engaged full time on aids work and 30 employees making up crews and work parties on floating equipment who are diverted part time from dredging work for sea trips.

He Made Changes

(Continued from p. 8)

spent Christmas Eve calling on those on duty in order to offer his personal greetings and good wishes of the season.

Numerous complimentary letters have been received by him from ship operators, attesting to their appreciation of the Canal's efforts to serve them. One recent example, from Ralph B. Dewey, president of the Pacific American Steamship Association, is typical:

"My short stay in Panama renewed once again my high regard for the fine job that not only your office but the

entire Canal management has done in the matter of vessel dispatch. It is really an eye-opener to learn the story at first hand."

What has driven him to the often frenetic activity which has characterized him as Marine Director?

"I prefer working to loafing," he says with his hearty, good-natured laugh. "This Canal was built to serve ships and you can't serve ships on an 8-hour day and a 5-day week. The shipping business just doesn't operate that way. And since I'm of the world of ships, neither do I."

SHIPPING

Little, But Lively

ONE OF THE best customers the Panama Canal has these days is the little 183-foot tanker *Seatown* which transits northbound one day and southbound the next with the regularity of a ferryboat. Since June 14, 1962, when the ship started the Atlantic to Pacific run, the *Seatown* has made nearly 100 transits. During May, the schedule was stepped up and the *Seatown* made 25 transits in that one month. The little tanker is, without a doubt, one of the most likely candidates for the best customer of the year plaque awarded annually by the Panama Canal.

Not only does the tanker go through the Canal more than any other ship, she gets preferred treatment when she is carrying high test gasoline. This means she is on a clear cut preference list on an equal basis with her 650-foot super sisters.

The *Seatown* works for the Panama Refining Co. and loads oil and other petroleum products at Las Minas Bay for delivery to Balboa. She has a length of 183 feet and a Panama Canal net tonnage of 357 tons. This means that she pays about \$240 in tolls when she is in ballast and about \$320 when she is loaded.

Tanker "Seatown."



TRANSITS BY OCEAN-GOING VESSELS IN MAY

	1963	1962
Commercial.....	988	984
U.S. Government.....	24	16
Free.....	8	11
Total.....	1,020	1,011

TOLLS *

Commercial....	\$4,993,868	\$5,124,471
U.S. Government	117,173	95,265
Total....	\$5,111,041	\$5,219,736

CARGO**

Commercial....	5,722,332	6,057,628
U.S. Government	91,452	126,131
Free.....	49,264	58,341
Total....	5,863,048	6,242,100

*Includes tolls on all vessels—ocean-going and small.
**Cargo figures are in long tons.

New Panama Flag Ship

A FAMOUS old troop ship, which made a number of trips through the Canal during the last war, is now flying the Panama flag. She is the former *Noordam*, a 10,000-ton passenger freight vessel; sold recently to the Cielomar Shipping Co. of Panama by the Holland America Line. During World War II, the *Noordam* carried more than 70,000 allied troops and equipment. Recently together with the *Westerdam*, she has maintained direct service between Rotterdam and New York for 150 passengers and about 7,500 tons of cargo.

New Chinese Freighter

THE MV *Oriental Venus*, built in France and delivered recently for service with the Orient Overseas Line, Inc., made her maiden voyage through the Canal in May on her way to Formosa. Wilford & McKay, agents for the line, say she will join other vessels on the Far East-New York run and will make regular trips through the Canal in the future.

The new Chinese freighter, which flies the Liberian flag, has a hold capacity of 837,880 cubic feet and 17,660 cubic feet for refrigerated cargo. In addition, she has accommodations for 12 passengers in air conditioned quarters; a deluxe suite, dining salon, smoking room, library, bar, cafeteria, and a winter garden with oriental decorations.

Cargo Record

A RECORD CARGO of coal and a near record for cargo of any type was carried southbound through the Canal in May by the collier *Nagano*. The ship carried 45,809 long tons of coal loaded in Hampton Roads where this was reported to be a new peak figure for a single-ship cargo of coal. The loading required 815 railroad cars, which form a train more than 6 miles long—a record for the Norfolk & Western Railway, too.

The *Nagano*, 757 feet long and with a 102-foot beam, was on her maiden voyage to Japan with high grade metallurgical coal for the Fuji Iron & Steel Co.. She is owned by Oswego Ocean Carriers, Ltd., is operated by the Marine Transport Lines, Inc., and is under Liberian registry. Wilford & McKay, agents for the ship at the Canal, say that the ship is expected to return the middle of July from Peru, where she is to pick up a cargo of iron ore for Baltimore. If she takes advantage of the Panama Canal allowable draft of 37 feet, the *Nagano* is capable of carrying more than 51,000 long tons of cargo through the Canal.

Seaborne Salt

ANY CARGO can be carried in bulk these days, it seems—even salt. The 53,090 deadweight ton *Argyll*, the world's largest salt carrier, is expected to make a trip through the Canal sometime in August. Although the big ship was designed to carry salt from Mexico to the Pacific Northwest, she can be used for carrying other dry bulk cargoes such as ore, coal, and grain. Oil could be carried in the tanks normally used for ballast.

The ship is equipped with self unloading equipment which operates with twin grab bucket, traveling crane, and conveyer belt system mounted on the main deck. The bridge is placed right forward and the main engine aft, with holds and cargo handling equipment between. With the exception of the former *Sinclair Petrolore*, the *Argyll*, with a beam of 106 feet, will be one of the widest ships ever to have transited the Canal.

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