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PANAMA CANAL
REVIEW



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Index

| | |
|---|----|
| Chaquiras | 3 |
| <i>From the wilds of western Panama comes the Chaquira. Once an Indian warriors' ornament, it has become a part of modern-day jewelry.</i> | |
| Panama Independence | 5 |
| <i>The Republic of Panama has two independence days in November. Here is all the intrigue of the historic events leading to those important days.</i> | |
| Section I | 8 |
| <i>It's the flea market for the Canal Zone and has everything from junked jeeps to bowling pins.</i> | |
| Mosquito Pest | 12 |
| <i>Research by Canal Zone mosquito fighters may some day lead to control.</i> | |
| Anniversaries | 15 |
| Radar Imagery | 16 |
| <i>Mapmakers have discovered a new tool which literally cuts through the fog.</i> | |
| Shipping Statistics | 18 |
| Food | 20 |
| <i>Thanksgiving Panama style is what we feature on our food pages this month.</i> | |
| COPA | 22 |
| <i>The skyways to Panama's progress opened on March 11, 1947, when COPA's flight number 1 departed from Albrook Air Force Base for Tocumen International Airport.</i> | |
| The Olympics | 24 |
| <i>The XI Central American and Caribbean Games will bring up to 20,000 sports fans to Panama. About 3,000 athletes will participate.</i> | |
| Florida State University | 26 |
| <i>It has no football team, fraternities or snack bar, but it provides the civil servant, the soldier, and the citizen of Panama an opportunity for a college degree.</i> | |
| Shipping | 29 |
| Historic Events | 31 |

Our Covers

OUT OF THE high tropical forests and from the lowland coast of northwestern Panama comes the chaquira—one of the most colorful pieces of jewelry worn by modern women. Made by the Guaymi Indians, the chaquiras of historic times were made of bone, shells, stone, and seeds and were not as colorful as they are today.

With the invaluable assistance of Dr. Reina Torres de Araúz, director of the National Museum of Panama, we were able to invite a Guaymi family to display some of the handmade chaquiras. The setting is in a wing of the museum. In the background are ancient stone statues discovered on the slopes of Barú volcano at Barriles. The Indians are Mr. and Mrs. Dionisio Santos and their infant daughter who travel to Panama City from their highland home in Veraguas Province to sell the necklaces. He is wearing a ceremonial hat and a chaquira which the Guaymi men wear during festive occasions.

The back page shows a layout of the chaquiras on top of a large Guaymi ritual stone table. The photographs were taken by Panama Canal photographers Melvin D. Kennedy, Jr. and Alberto Acevedo.

Historically, November is the most important month for Panamanians. On November 3, 1903, the area which is now the Republic of Panama gained its independence from Colombia. November 10, 1821, was the first time any community (Los Santos) in Panama had declared freedom from Spain. And on November 28, 1821, Panamanian independence from Spain was proclaimed. For the November REVIEW, we chose the chaquira to symbolize the historic past of Panama, and the Guaymies who typify the spirit of freedom by never having been subdued by either the conquistadors or modern man.





From Panama's
Primitive Past
comes the

FASHIONABLE CHAQUIRA

TOP: Dressed up for a festive occasion, a Guaymí shows off his chaquira, ceremonial hat and "Sunday" tie.

BOTTOM: A mirror adds double beauty as pretty Mayra I. Calderón of Panama City adjusts her colorful chaquira.

(See p. 4)



THE CHAQUIRA

By Jose T. Tuñon

AN INDIAN warriors' ornament has made its way from the primitive environment of the mountains of western Panama into the world of feminine fashion, and it is winning women's fancy.

The ornament is the chaquira, a shoulder-wide collar of brightly colored beads arranged in geometric designs now used by women for both daytime and evening wear. It is also still worn today by the Guaymí Indian men, whose ancestors were the formidable fighters the conquistadors rated among the most skilled of all the warriors in the Western Hemisphere.

No longer the fierce warriors of yore, the present-day Guaymies, some 35,000 in all, live under the laws of Panama in the provinces of Veraguas, Chiriquí, and Bocas del Toro. Their children attend Panama schools, but they still keep aloof from people not of their own culture and retain many of their aboriginal customs and practices.

The chaquira was first mentioned by European historians in documents dating back from the early part of the 17th Century. It was quite different from today's ornament. The colors were dull and it was not so tightly beaded as modern-day ones. It was fashioned of pebbles, pieces of bone, seeds, and sea shells which the Indians colored with homemade dyes.

Sold In Shops

The brightly colored beads and varied designs of the chaquiras now being sold in the shops reflect the Indian's present-day ability to buy beads of whatever shape, size, or color needed.

Fray Adrian de Santo Tomas, who ran a mission in 1622 in what is now the town of Remedios, Chiriquí Province, described the chaquira as the ornament worn by Guaymí men during their major festivals—a sort of emblem of Guaymí nationality.

The Spanish conquistadors found three distinct Guaymí tribes in western Panama; each named after its chief; each spoke a different language. The three big chiefs were Urracá, who ruled in what is now Veraguas Province; Natá, in the territory of the Province of Coclé; and Parita, in the Azuero Peninsula.

Of the three, Urracá is the most famous. He not only defeated the Spaniards several times, but was the only one among the rebel Indian chiefs who



FASHIONABLE—Three Panama Canal employees pause to talk about the chaquiras they have bought in various parts of Panama. Left to right are: Judith H. de Vásquez, Edna A. Kovel, and Carolyn L. Twohy.

forced a captain of the Spanish Empire, Diego de Albítez, to sign a peace treaty. This was approximately 1522.

His Feats

A measure of Urracá's temper is provided by the account of his feats after Albítez's successor betrayed and imprisoned the Indian chief.

Sent in chains to Nombre de Dios on the Atlantic coast, probably for transfer to Spain—according to historian Bartolomé de las Casas—Urracá escaped and made his way back to the mountains, vowing to fight the Spaniards unto death. And he fulfilled his vow.

In his last years, Urracá's name was so feared by the Spaniards that they avoided combat with his men. When Urracá died in 1531, surrounded by friends and relatives, he was still a free man. He probably was laid in his grave with a chaquira covering his shoulders.

After Urracá's death, the other Indian chiefs carried on the fight against the white invaders, taking refuge in the steep mountains of Veraguas and the Tabasará Range where the Spaniards' cavalry could not maneuver.

By the 18th Century, the Guaymies were divided into two large groups: those of the tropical forest (in the highlands of Veraguas and Chiriquí) and those of the lowlands (along the Atlantic coast, from Río Belén to Bocas del Toro). They never surrendered, fighting until the collapse of the Spanish domination in the Americas.

In Oblivion

When Panama broke away from Spain and joined Colombia in the early 19th Century, the Guaymies remained in oblivion in their mountain villages.

Slowly they are now being incorporated into the national fold. Guaymí teachers and law-enforcement officers help the effort. At the last graduation of the Felix Olivares High School in David, Chiriquí, an honor graduate was a Guaymí student, Miss Matilde Salinas.

Her ambition: to study medicine and to return to the mountains to work among her people.

Other young Guaymies are leaving their mountain homes in increasing numbers to work in the banana plantations in Chiriquí and Bocas del Toro. They bring back new things and new ideas which they share with their elders—transistor radios among them.

While the chaquira remains a symbol of the Guaymí culture, it is no longer a treasured warrior's ornament fashioned painstakingly by female hands within the closeness of the family circle, but a vastly sophisticated commodity to which mass production techniques are being applied. Its production is an established source of income for the Guaymies.

Small Shops

In olden times, it took perhaps as much as 4 months to fashion a single chaquira. Today, in much less time, dozens of the collars are produced in small shops to fill orders from the cities. And men now work side by side with women turning out the ornaments.

Along the Inter-American Highway near Tolé, the town closest to the Tabasará Range, Guaymies and boys from Tolé peddle chaquiras of all sizes and colors, starting from about \$6. In fashionable Panama City shops, the collars sell for \$15 and up.

Perhaps the very masculinity that the chaquira symbolized centuries ago is the intangible lure that has made it an ornament prized by women in modern times. The noted U.S. historian and archeologist Samuel K. Lothrop, in his "Archeology of Southern Veraguas, Panama," rated the Guaymí warriors thusly:

"In the opinion of many, the natives of Veraguas should be ranked with the famous Araucanians of Chile as the outstanding fighters of the New World, a judgement shared by Spanish veterans who had served in both regions."

Stirred by the Winds of Liberty

Isthmians Called for Independence

By Luis C. Noli

From the early Nineteenth Century, Isthmians felt the stirrings of independence—first from Spanish domination and then from a Colombian Government which was draining the Isthmus of its resources. In the early years, the valuable geographical position of the Isthmus became the yoke that tied it to gold hungry conquistadors. Later, that position became one of the Isthmus' most valuable assets for independence.

IF THE PLAN for Panama's secession from Colombia in 1903 had been carried out as originally designed, Panamanians would have one instead of two independence celebrations in the month of November. For the leaders had fixed November 28 of that year—the anniversary of independence from Spain 82 years earlier—as the date on which the new Republic would be proclaimed.

Though 82 years apart, the two independence movements show interesting similarities. Both were carried out without discontent over the lack of benefits to Isthmians from their country's privileged geographical position; both were helped by fortunate breaks that assured swift success when everyone despaired; both were affirmed by municipal councils.

The Nineteenth Century was still young when the winds of liberty reached the Isthmus from the south.

"This important Isthmus of Panama was a degraded colony, debased, bereaved of representative government, of civil liberty, of political rights," the late Mariano Arosemena, a signer of the 1821 Declaration of Independence, once related.

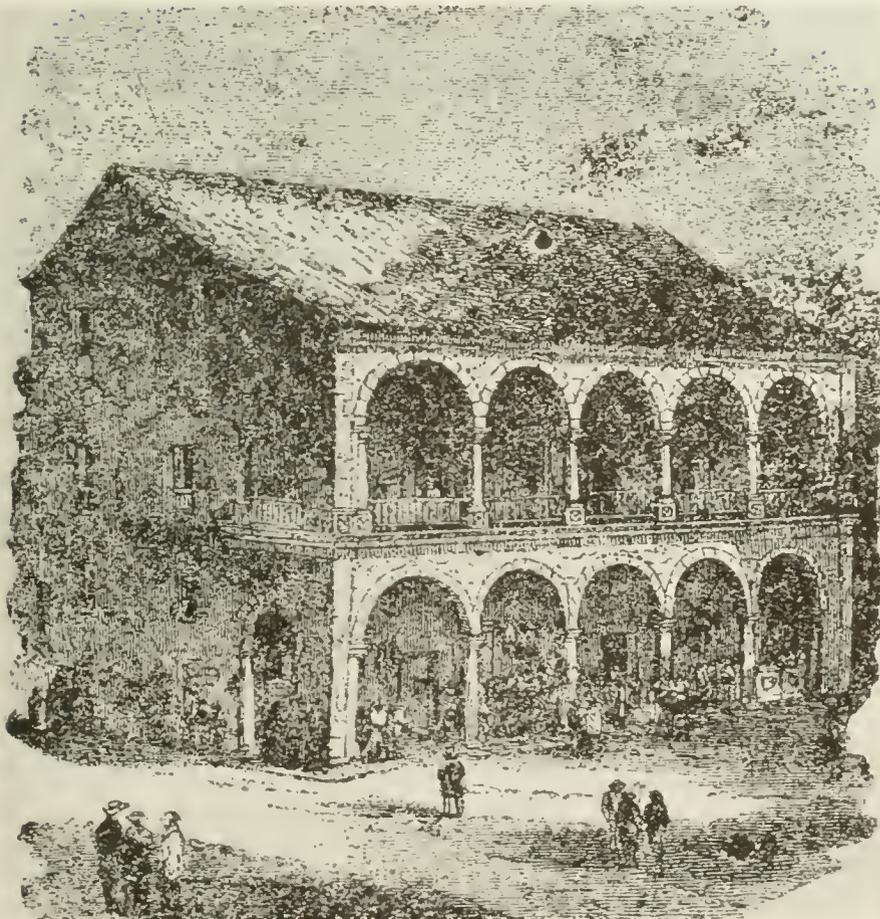
Sealed To Trade

"Despite its immense importance for communication between the oceans, it was hermetically sealed to trade and to foreign contact. As vassals of the King of Spain, we Isthmians lived miserably," he said.

"Other Spanish colonies in the Americas had revolted, but the Isthmus, though longing to become independent, could not possibly do so. His Catholic Majesty kept this post of military strategy bristling with bayonets and besides had made it the obligatory route for the war expeditions to Ecuador, Chile and Peru and for replacements of naval casualties, as well as of naval supplies, armaments, munitions, equipment and all that was required to supply his armies in the armed conflict between the government of the metropolis and the countries under its domination in the new world, which had rebelled against it."

The first step for independence,

(See p. 6)



FREEDOM FROM SPAIN and voluntary union with the Gran Colombia Federation was declared in this colonial town hall in Panama City on November 28, 1821. The town meeting, called by the City Council, brought to an end 300 years of Spanish rule.



DURING the War of the Thousand Days which was draining the Isthmus of men and resources, a detachment of Colombian Government troops prepares to enter Colon. It was led by Commandant Esteban Huertas, immediately behind the handle of the machine gun to the left. According to Panamanian historians, Dr. Ricardo J. Alfaro and Rubén D. Carles, the photo was taken late in 1901. The U.S. flags at the top of the buildings indicate that the establishments were neutral in the conflict. The civil war was a leading contributor to Panamanian independence in 1903.

(Continued from p. 5)

according to Arosemena, was the founding in Panama City of a weekly newspaper—*ISTHMIAN MISCELLANY*—“through which we openly fought absolute rule, lack of civil and political liberties, bad and depressive colonial laws, and the abominable slave traffic. . . .”

Spanish Force

The break in 1821 came when a Spanish expeditionary force set out from Panama for Ecuador. With the Spanish garrison depleted, the planners in Panama City moved quickly. A fund was raised to bribe the remaining Spanish troops.

The independence fever had spread to the interior of the colony and on November 10, 1821, the Municipal Council of Los Santos adopted a Declaration of Independence from Spain. The anniversary of this first cry for independence on the Isthmus is observed as a national holiday in the Republic and is the first, chronologically speaking, of the independence holidays falling in November.

The Los Santos' declaration emboldened the leaders in Panama City and on November 28—the day after the last of the remaining Spanish soldiers had quit the garrison—the City Council called a town meeting at which independence was proclaimed.

There was an important difference, however, between the Los Santos and Panama City declarations. The former called for a republican regime; the latter provided for voluntary union with the Gran Colombia Federation that the “Liberator,” Simón Bolívar, had forged from the South American colonies he had freed.

The Panama City declaration prevailed and the Isthmus thus joined neighboring Colombia, bringing to an end 3 centuries of Spanish rule.

Within a decade, however, the Gran Colombia Federation had broken up, but Panama remained as a department (state) of Colombia which had now become New Granada. Isthmians, already regretting their union with Colombia, chafed at the bit. Independence attempts actually were carried out, though with little permanent success, in 1830, 1831, 1840, and 1861.

Fed Up

By the turn of the century, Isthmians were thoroughly fed up with conditions and genuinely concerned about their future. Construction of an interoceanic canal across the Isthmus had become a definite possibility, but:

—The millions collected from the Panama Railroad had vanished to Colombia without benefit to the Isthmus

—A Colombian civil war between

Liberals and Conservatives, the War of the Thousand Days, had spread to the Isthmus, draining it of blood and resources.

—Worse yet from the Isthmians' standpoint, the Colombian Government was preparing to reject a treaty with the United States for the construction of an interoceanic waterway across Panama.

The Coup

The actual plans for independence in 1903 began around the month of June. A telegram signed by more than 2,000 residents of the Isthmus was dispatched to the Colombian Government in Bogotá, warning of “anti-patriotic sentiments” if the treaty was rejected. By October, the revolutionists had set November 28 for the coup in order to have it coincide with the anniversary of independence from Spain.

But at daybreak on November 3, word reached Panama City that a Colombian cruiser had anchored off Colon and 500 troops had disembarked to take over the Isthmian garrison.

That was what precipitated the events. For the men in Panama had learned that the Colombian Government, aware of the move for independence, had decided to send a large armed force to the Isthmus to replace the Colombian battalion that had been on

duty on the Isthmus for many years.

While the alarmed schemers in Panama City rushed about to consolidate their plans, Panama Railroad officials denied passage by train to the Colombian troops which were forced to remain in Colon.

The Break

The commanders, however, decided to travel to Panama City immediately, with or without their troops. That was to prove the break in 1903.

The Colombian expeditionary force was commanded by Generalissimo Juan B. Tovar and a staff of six general officers. At 11 o'clock that morning, they were received with military honors at the Panama City train station.

With the populace sensing that the hour to do or die was approaching, the day's key man made his decision and his move.

He was General Esteban Huertas, commander of the Colombian garrison in Panama. He was a self-made man. Born in Colombia in 1876, he had been placed by his parents in a seminary at the age of 8 to study for the priesthood. But at 14 he ran away and joined the army as a drummer. He was first assigned to Panama in 1890 as a sergeant drummer.

Here he befriended boys of his age who as men were to be among the leaders of the independence plot in 1903.

Gallantry

Huertas' first tour of duty in Panama lasted 4 years. He was transferred to Colombia and when he was reassigned to the Isthmus in 1896 already had won a lieutenant's commission. The outbreak of the bloody civil war in 1899 found him an artillery captain. His gallantry in action in some of the 35 combats in which he fought—15 of them at sea—won him quick promotions and by 1902—at age 26—he held the rank of general and was in command of the Batallon Colombia, garrisoned in Panama City. He had lost his right hand in combat, had been wounded four other times, and had been decorated five times for valor and heroism.

In January, 1903, he married a Panamanian girl in Panama City and his only son from this marriage was born in October—both of which circumstances were to weigh heavily on his decision of November 3.

For weeks prior to the coup, the Panamanian patriots—his boyhood friends—had been sounding out Huertas for support, but he had not committed himself.

When the Colombian generals arrived in Panama City and Huertas' removal from command—and probably his imprisonment for not having moved against the plotters sooner—appeared to be a matter of hours, Huertas knew his moment of truth had come.

He himself related in his memoirs that decisive moment:

Ample Reason

"Alone, I walked to the walls of Las Bovedas (the colonial seawall fortress that served as his headquarters) and with only my conscience as witness, I began to reflect. I realized that the Panamanian people were right and had ample reason for wanting freedom and independence.

"I remembered that here I had my home, my son, my best friends, and that I had come to this land while still very young. I remembered also that all the Panamanians, without social or party distinction, had shown me sincere affection from the moment I stepped on Isthmian soil. And I arrived at the conclusion that neither my sword nor my men could stain themselves with the blood of a generous people who had given me their friendship and who now asked my help to achieve their freedom. . . . When I walked down from Las Bovedas, I had already planned all that I would do about an hour later."

Huertas assembled his officers, told them of his decision and, having received assurances of their loyalty to him, ordered the arrest of the restless Colombian generals who already had come into Las Bovedas to remove Huertas from command and order the troops out.



Gen. Esteban Huertas

It was around 5:45 p.m., November 3, when Huertas made his move. The populace, already gathered in Santa Ana Plaza—the traditional rallying point of Panamanians—began advancing on Las Bovedas. Huertas ordered his men to rest arms and the civilians entered the garrison to arm themselves.

Chinese Shopkeeper

The Colombian warship *Bogotá*, anchored in the bay, fired three shells into the city in a parting gesture of defiance. The sole casualty was a Chinese shopkeeper.

As in 1821, the City Council made the formal proclamation of independence, which was ratified the following day at a town meeting.

There remained the threat of resistance by the 500 troops who had landed in Colon. All day on the 4th, Col. Eliseo Torres, in command of the troops in Colon, had been demanding the return of the imprisoned generals. He had deployed his forces in the Atlantic side city and had threatened to open fire on the civilian population.

U.S. Warship

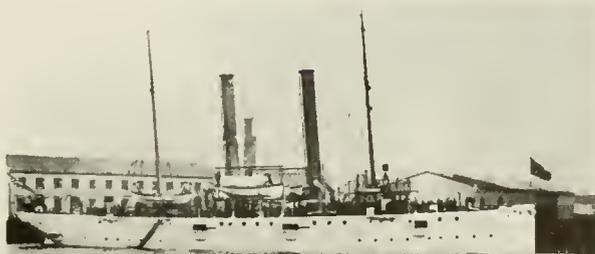
But the arrival of the U.S.S. *Nashville* off Colon with orders to keep the Isthmus open to traffic proved the final break the patriots needed, even as preparations were being made in the capital to send an armed force to Colon.

The presence of the warship is believed to have influenced the decision by the commanding officer of the Colombian vessel that had brought the troops to Colon to weigh anchor and head back for Colombia, leaving the troops ashore.

Realizing his now desperate position, Col. Torres finally yielded to the proposal by leaders of the conspiracy to take his men back to Colombia aboard the steamship *Orinoco* upon receipt of 8,000 pesos in gold with which to pay the troops, the generals to follow in a short time. The steamship *Orinoco*, with the Colombian battalion on board, sailed from Colon at 7:25 p.m., November 5.

"Only now, at 6:30 p.m.," read a telegram from the leaders of the independence movement in Colon to the newly established Government Junta in Panama City, "can it be said that Panama's independence is assured."

U.S.S. Nashville





ABOVE: Margit L. Csighy, acting disposal manager, shows how surplus bowling pins can be glued together and refinished to make a room divider.

BELOW: Mrs. Joseph Casey of Ancon, a regular customer, searches through a pile of insulators for the right one to adapt for use in her home.

BELOW RIGHT: Michael N. Stephenson, left, of Gatun, and Dr. Melvin Ottis, of Ancon, look for parts for the Army jeeps they are rebuilding.



“Section I” Flea Market and Metals Mine

By Willie K. Friar

“HANDS OFF, please. These are our files. They are not for sale.”

Such signs as this are a necessity in the Excess Disposal Unit of the Panama Canal's Storehouse Division as enthusiastic customers bent on the search for bargains try to buy everything in the building, even to the chairs and benches used by the office employees.

Miss Margit L. Csighy, acting disposal manager, is no longer surprised to look up from her desk and find an avid bargain seeker opening and closing the door to the office refrigerator and asking, “How much?”

Located on Diablo Road, in a large warehouse known to everyone as Section I, the Excess Disposal Unit is the Canal Zone's “flea market” with a con-

stantly changing stock of surplus or junked items collected from Canal and military sources.

Section I is actually the Storehouse Unit for supplying paints, acids, limes, fiberboard and other new building materials. The Excess Disposal Unit and the Scrap and Salvage Unit are separate, but customers have labeled the whole operation Section I because that appears in large letters on the building.

Bargains

Prices are low and there are bargains to be had whether one is looking for a marine clock or a weather balloon, bowling pins or junked jeeps.

Hundreds of used library books sell steadily at 10 cents each, and brand-

(See p. 10)





ABOVE: The base for this table lamp is a filter from a diesel engine which has been covered with a layer of tan straw matting.



Mrs. William Tope is a familiar shopper around "Section I." She and her husband, Brig. Gen. William A. Tope, director of J-5, U.S. Southern Command, have used the surplus items she bought there to make interesting decorative lamps, tables, and other useful articles for their quarters at Quarry Heights. Above, Mrs. Tope displays portable bar made from a mop cart. Below, she explains how she turned diesel filters, which sell for 50 cents, into Danish style hanging lamps by using hooks made from coat hangers and inexpensive chain, and then spraying all with gold paint. Other attractive and practical items which she and General Tope made in their spare time, to add a more homelike atmosphere to their military quarters, are shown at left.

BELOW: This filing cabinet support was transformed into an oriental type table by simply adding heavy wire mesh to the top.





SECTION I is actually the Storehouse unit for supplying paints, acids, limes, fiberboard, and other new building materials. Here workmen unload lumber at the warehouse on Diablo Road.

(Continued from p. 8)

new filing drawers, the 6 inches wide variety, are available for only 50 cents. Bowling pins go for 25 cents each.

What do people do with all these things? Miss Csighy often wonders about some of the items, but customers have reported that bowling pins make excellent lamps and with a little sanding, glue, and paint can be made into room dividers.

Transformation

Large, heavy coil springs have been turned into candle holders, the filing drawers into receptacles for dress patterns, color slides, music tapes, and plants. Discarded light fixture covers have been bought for bird baths and feeders, and glass window louvres for shelves.

Military ammunition boxes are always in demand to be used as tool or shoe polishing kits, and not even the most ancient and delapidated chair stays long on the floor before it is claimed and restored with tender care.

Carts designed for carrying mops, buckets of water, disinfectant, and detergent for cleaning hospital floors, give no hint of their past use when, with only slight alterations and refinishing, they turn up in homes as portable bars.

Filters for diesel engines have been transformed into Danish style hanging lights and bases for small tables. Electrical insulators have been made into water fountains for gardens.

Popular Item

Surplus weather balloons, which are turned in by the military from time to time, are a surprisingly popular item. Sixty sold recently in less than a week. The customers, for the most part, were children, and one little boy spent an entire week blowing up the 6-foot balloon and then hung it from the chandelier in his room where it served as a rather bulky partition to separate his bed from that of his younger brother.

Another youngster, with much effort, inflated his on the second floor of his

home and when he started outside to play with it, discovered to his dismay that there was no way to get it down the stairs without letting out the air.

A group of Girl Scouts used one to mark the site of their summer camp.

With new, strange, and unusual surplus and damaged merchandise coming in all the time, there are regular customers who come by often just to see what is new. These include men and boys who have bought the bodies of junked jeeps, which sell for \$40 each, and are constantly looking for the parts they need to reconstruct the vehicles and put them back in working condition.

Dashes In

One jeep rebuilder, Dr. Melvin Ottis, of the Gorgas Hospital Ophthalmology Service, dashes in frequently, straight from work at the hospital. He's often seen, still in his white uniform, searching in the scrap for that particular part he needs at the moment.

Outside the building is the yard of the Scrap and Salvage Unit with masses of scrap metal which to the untrained eye appear to be "junk piles."

Those piles of "junk" are veritable metal mines providing a valuable stock of reclaimed iron and steel, and on closer inspection it is easy to understand why John J. McConaghy, foreman of the Scrap and Salvage Unit, refers to the yard as a metals supermarket.

"Here the metals are separated, classified, priced, and placed in bins for sale in much the same way as products are put on the shelves in the retail stores," Mr. McConaghy explains.

Ferrous Metals

Each bin contains a different size and type of scrap metal classified for customers' convenience. Most of these ferrous metals are sold to Panama.

In another building are barrels filled with small bits of nonferrous metals. Lifting the top on one reveals bright brass scrapings salvaged from the sweepings of Canal Zone machine shop

floors. In the scrap and salvage business nothing is wasted. Once a year these barrels of nonferrous metals are put up for worldwide bids.

At another site in the yard, an electrical cable stripper rips open the lead covering of discarded cable and out pops long ribbons of shiny copper wire. Here, also, a baling machine is hard at work pressing mounds of metal drums, doors, and an assortment of bulky items into small square bales.

High above the work area in the seat of a giant crane equipped with a 3½-ton magnet, Leavell Kelly, leader, operating engineer, pushes levers and lifts different sizes of scrap pieces and places them in the right bins. A scale built into the crane weighs the loads.

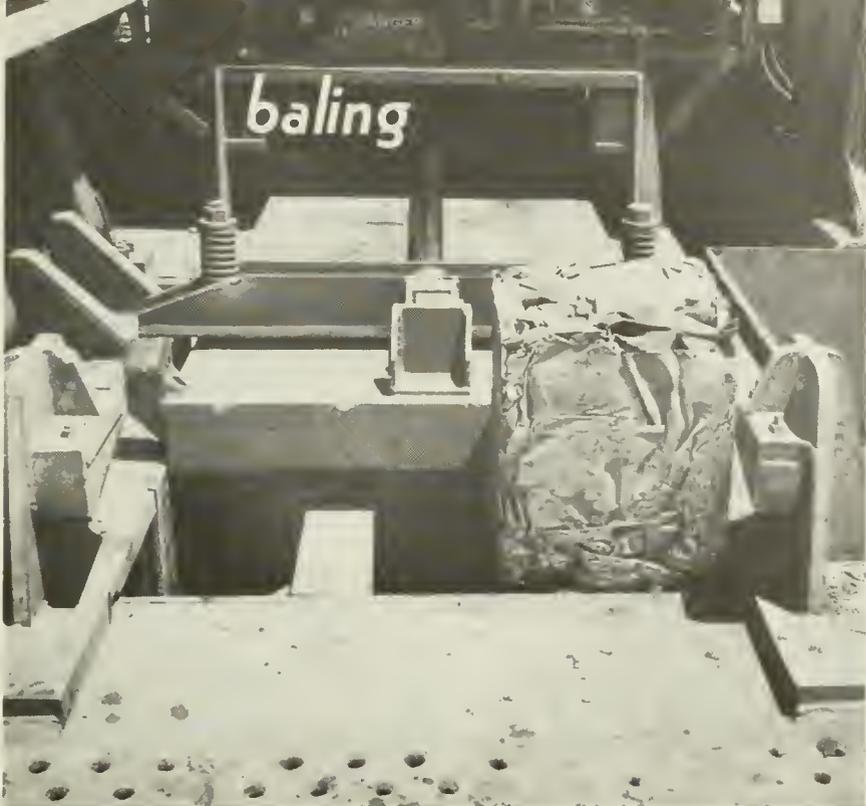
Pigs and Ingots

Salvaged bolts and nuts are separated according to size and are sold by the ton. Stacked in a shelter are neat rows of "pigs," silver colored bars formed by melting down various items made of lead. Articles made of aluminum are melted into ingots, which are about one third the size of a lead pig.

The most valuable metal processed here is monel, a combination of copper and nickel selling currently for 61 cents a pound. About 1,000 pounds of this highly prized metal are salvaged, processed, and sold annually.

Both the Scrap and Salvage Unit and the Excess Disposal Unit provide a worthwhile and remunerative service for the Canal organization, the Navy, Army, and Air Force through the processing, reclaiming, salvaging, and selling of items and materials that, otherwise, would be not only a total loss but would litter the landscape.

And it is only incidental that in the process they provide a happy hunting ground for the treasure hunter or antique collector and stimulate the imagination of those who just want to make something unusual out of something ordinary or something ordinary out of something unusual.



THE SURPLUS AND SALVAGE YARD

ABOVE LEFT: John J. McConaghy, left, foreman, Scrap and Salvage Yard, looks on as Esau Young, center, foreman non-ferrous metals, and Telmo González, right, burner, operate the cable stripping machine in the yard.

ABOVE RIGHT: The baling machine presses a large pile of bulky scrap into a compact cube in one quick operation.

LOWER LEFT: Clarence Markland, scrap sorter, looking like a space traveler in his protective helmet, melts down aluminum and molds it into ingots. The aluminum ingots, some still in the molds, are seen behind him.

LOWER RIGHT: Leavell F. Kelly, leader, operating engineer, sorts scrap using a crane equipped with a 3½-ton magnet.

A SUBTLE WAR AGAINST THE ELUSIVE MANSONIA



MOSQUITO COUNTRY—The Chagres River near Gamboa.

“Mosquitoes: Flying insects with a damnably poisonous bite, which every one except hotel managers has seen, heard, or suffered from.”

Wanderings and Diversions:
THE CONTINENTAL DICTIONARY.

WITHOUT THE NEED for even a smidgen of proof, it can be said for certain that everybody on the Isthmus of Panama has seen, heard, or suffered from the mosquitoes—including hotel managers.

But what to do about them? Give up and give the spindly legged devils their bucket of blood? Fight them with slaps and spray? Or follow in the footsteps of one of the most famous mosquito battlers of all time—Col. William C. Gorgas—and fight the mosquito on his home ground?

During the early Panama Canal construction days, Colonel Gorgas and his staff won the war over *Aedes aegypti*, the yellow fever mosquito, with his army of sanitation workers. And he all but conquered the *Anopheles malaria* mosquitoes.

But there lurked in the dark, damp of the jungle another clan—one of the most voracious yet discovered—the *Mansonia*.

Most Common

This group comprises the most common of the mosquito species in the

Canal Zone and lives in close association with various aquatic plants around the shores of Gatun Lake, especially in the Chagres River near Gamboa.

Successful at controlling yellow fever and malaria species in the Canal Zone and in many places in Panama, mosquito fighters are being met with new problems in the battle against *Mansonia*.

The best type of mosquito control is that which attacks the immature forms before they reach adulthood. This has been accomplished in the past by applying a toxic dust or suffocation oil to the surface of the water where most mosquito larvae and pupae must go for air.

But immature *Mansonia* do not go to the surface to breathe. Instead, they remain several inches to more than a foot below the water's surface attached to the aerated roots of floating aquatic plants.

Special Tubes

These creatures have special breathing tubes which they can insert into the oxygen-rich centers of the hollow plant roots. Here they remain attached for a month or more feeding on microorganisms and decayed plant tissue until their development to the adult stage.

Mansonia mosquitoes had been considered primarily of pest importance until recently.

The importance of these mosquitoes



came to the forefront as the result of an epidemic in 1967 of Venezuela Equine Encephalitis in the vicinity of Cali, Colombia. Many horses died and some humans became ill. In Panama, most horses are immune to the disease.

Investigations led to the *Mansonia* mosquitoes as the responsible carriers during this outbreak, giving even greater emphasis to the present studies being made by the Division of Sanitation.

Voracious Pest

Mansonia became the target of Canal Zone mosquito fighters in the early 1960's. The mission was to devise a naturalistic method of controlling the voracious pest insects which breed by the millions in the Chagres River.

Natural control got off to a disappointing start when an experiment using ten manatees or “sea cows” to gobble up plants supporting *Mansonia* mosquitoes failed.

The manatees could not eat the prolific aquatic vegetation fast enough. It was estimated that up to 2,000 of the curious looking sea cows would have been required to do the job—an unrealistic number.

Not willing to declare the mosquitoes the winners, in June 1968, Melvin M. Boreham, the Canal Zone medical entomologist, submitted a proposal to the Health Bureau to carry out a research project to find out the basic biological



LEFT: Mass of about 200 eggs on float of a water primrose plant. **CENTER:** *Mansonia* larva attached to water lettuce root to obtain air from hollow interior. **RIGHT:** Arrow points to scar on the ovarian follicle tube of a *Mansonia* mosquito.

information necessary for the development of an effective *Mansonia* control program. The same month, Health Director Col. H. Haskel Ziperman gave his full support to the project.

Little Know

At the outset of the investigations, very little of a biological nature was known about the *Mansonia* in the Canal Zone region.

Some of the questions which needed to be answered were: Which plants were utilized by each of the seven different species of *Mansonia*? How long do the immature forms take to develop into adults? How long does the adult female live and how many times does she lay eggs? How far below the surface do the larvae attach to the plant roots?

A bit of intrigue has entered the mosquito investigations. A new species of *Mansonia* never before known to science was discovered in July 1968 living in the Chagres River.

While collecting larvae near Gamboa, immature mosquitoes were obtained which could not be identified. More of them were collected and raised to maturity. Boreham took the samples to the University of California where Dr. John N. Belkin, a world famous mosquito expert, confirmed that the species was indeed new.

Mosquito Leber

A technical description is now being written by Boreham and a scientific illustrator is finishing drawings. The description will be published in an entomological journal in the near future. The new species will be named in honor of Canal Zone Governor W. P. Leber.

The front line in this war against mosquitoes is the Chagres River, from Gamboa to the Chilibre River.

Without the Chagres and its inexhaustible water supply the Panama Ca-

(See p. 14)



MANSONIA TEAM—After setting up Mosquito collection tent in the damp jungle near Gamboa, three members of the *Mansonia* research team pose for the photographer. From left arc: Pastor Chávez, Melvin M. Boreham, and Inocencio Leguia.



COLLECTORS—Inocencio Leguia holds a cage over the head of Pastor Chávez who collects mosquitoes with a battery-powered vacuum device.



LEFT: Mel Boreham points to a photo enlargement of *Mansonia* larva.

(Continued from p. 13)

nal would not have been possible. But it has always been a giant insect incubator, and human habitation along its shores is, to say the least, uncomfortable.

Research activities are carried out at the main Medical Entomology Laboratory at Coco Solo Hospital and at a small field laboratory located in the Gamboa Health Center.

Three Aides

Boreham has three biological aides to assist him plus a student assistant during the summer. Pastor Chávez and Inocencio Leguia are stationed at the main laboratory while Luis Palma works at the Gamboa facility. Michael King worked as a student assistant during the summer of 1968 and Rhoda Gordon worked last summer.

Twice a week Boreham and some of his aides make field trips along the Chagres collecting live adult mosquitoes and larvae. On arrival at one of the several collection sites, temperature and humidity readings are made and a recording thermograph is checked.

Newly emerged adult mosquitoes are collected from cage-like traps which had been placed over the aquatic plants on the previous trip. A battery-powered vacuum device is used to suck the mosquitoes into a small screened container at its tip.

At one point the men walk into the jungle and allow hungry *Mansonia* females to attack. The vacuum device is used to capture the mosquitoes—hopefully before they have a chance to bite the collectors.

All of the specimens are taken to the main laboratory for identification and rearing.

Technique

A laboratory technique has been developed by the entomologist so that larvae hatched from eggs collected in the wild can be reared to adults. It has been found that it takes from 25 to 40

days before the adult is ready to emerge. Most other mosquitoes need only a week or so for this development.

Another phase of the study is to find out how long the female mosquito lives in nature and how many times she is capable of laying eggs.

Dr. Lewis T. Nielsen, a mosquito expert from the University of Utah, came to the Canal Zone in December 1968 as a consultant to the *Mansonia* project. He and Boreham developed a technique involving the dissection of the female mosquito to examine the ovary tissue for scars left by previous egg layings.

Each time eggs are developed, a scar forms on the small tubes through which the eggs must pass. By examining these tubes under a powerful microscope these scars can be counted making it possible to estimate the approximate age of the mosquito.

1,400 Mosquitoes

Miss Gordon dissected approximately 1,400 mosquitoes last summer and found that *Mansonia* mosquitoes were capable of laying eggs at least two and possibly three times during their lifetime.

The female mosquito feeds on blood only to provide food for her eggs. After her blood meal, she rests in the vegetation and develops the eggs. She then lays them on the leaves of aquatic plants in masses of up to 200 or more. These hatch in about a week to start the cycle again.

The basic *Mansonia* project is expected to be completed by the end of 1970. But then what? Will *Mansonia* ever be controlled?

Boreham thinks control is possible.

"New insecticides continue to be developed along with more effective methods of application, most of which haven't been tried on *Mansonia* mosquitoes," he said.

"It's also possible that we can work

BELOW: Luis Palma examines insects at Gamboa laboratory, and Miss Rhoda Gordon carefully dissects a female *Mansonia* mosquito.



together with the Dredging Division's Water Hyacinth Control people who are interested in controlling many of the same plants which support *Mansonia* breeding."

Mel Boreham and his team of mosquito fighters may never attain the romantic aura that history gave to Gorgas and his men, but thousands of area residents—U.S. and Panamanians alike—will owe a debt of gratitude to them if a successful control method can be found.

Manufacturers of insect repellent, and the insects, may be the only losers.

—L.R.G.

ANNIVERSARIES

(On the basis of total Federal Service)

ADMINISTRATIVE SERVICES DIVISION

Donald P. Peart
Bindery and Finish Worker

MARINE BUREAU

Ronald A. Archbold

Leader Seaman

William B. Davis

Helper Lock Operator

SUPPLY AND COMMUNITY SERVICE BUREAU

Alexander A. Holder

Lead Foreman, Grounds Maintenance
Equipment Operator

ENGINEERING AND CONSTRUCTION BUREAU

Nathaniel A. Adams

Leader Seaman

Joseph C. Stair

Carpenter

Charles Edwards

Motor Launch Operator

Reginald H. Lloyd

Painter

Jocelyn DeCosta

Supply Clerk

Richard Stephens B.

Oiler (Floating Plant)

HEALTH BUREAU

Kenneth A. Brathwaite

X-Ray Film Developer

Eathon G. D. Bruce

Nursing Assistant (Psychiatry)

ADMINISTRATIVE SERVICES DIVISION

Lionel D. Best

Leader, Duplicating Machine Operator

Harold I. Perantie

Office Services Manager

Chief, Administrative Services Division

OFFICE OF THE COMPTROLLER

John Montanye

Systems Accountant

Elmer J. Nordstrom

Rates Analyst

Hugh W. Cassibry

Rates Analyst

Ira N. C. Read

Accounting Technician

PERSONNEL BUREAU

Robert D. Kelly

Employee Relations Clerk

MARINE BUREAU

Winston E. DaCosta

Motor Launch Operator

Agustin C. Gibbs

Leader Seaman

Laureano Torres

Helper, Lock Operator

Ralph G. Small

Carpenter

Alfred C. Blackman

Truck Driver (Heavy)

Seymour A. Price

Painter

Lloyd A. Gilkes

Line Handler (Deckhand)

M. de J. Chiquilani

Painter

John F. Meehan

Pilot

George J. Booth

Safety Officer

Herbert A. Greene, Jr.

Admeasurer

Cleveland A. Dennis

Toolroom Attendant

Joseph E. Jones

Carpenter

Lucas Scott

Motor Launch Operator

Claude E. Burgess

Time and Leave Clerk

Alfred L. Springer

Towing Locomotive Operator (Locks)

John A. Bowen

Time and Leave Clerk

Vincent D. Ridge

Foreman-Marine Woodworking and
Drydocking

Ralph Curles

Master-in Charge, Towboat

Eugene E. Hamlin, Jr.

Supervisory Admeasurer

Juan Magan

Linehandler

George T. Fitzgerald

Chief Engineer, Towboat

Angel M. Sanchez

Boatman (Locks)

Lackland A. Manning

Oiler (Floating Plant)

Aubrey R. Sealey

Motor Launch Operator

Casimiro Palacios

Oiler (Floating Plant)

Erick H. Henry

Motor Launch Operator

Byron A. Morgan

Linehandler (Deckhand)

Dominico Rodriguez

Seaman (Launch)

Virgilio Sanchez

Truck Driver

Joseph E. Best

Crane Hookman (Heavy)

Marcelino F. Gourmet

Crane Hookman (Heavy)

Charles R. Klump

Towing Locomotive Operator (Locks)

Pablo Ceballos

Carpenter

Kasper G. Alleyne

Boilermaker (Maintenance)

Frank J. Brennan

Leader, Flame Cutter, Scrap

George L. Smith

Launch Dispatcher

Marcell Aldegon

Teletypist

Ruben A. Padmore

Marine Traffic Clerk

TRANSPORTATION AND TERMINALS BUREAU

Percival A. Shan

Truck Driver

Clifton O. Bailey

Chauffeur

Rupert L. Bovell

Maintenanceman (Dock)

Carl E. Jordan

Messenger (Motor Vehicle Operator)

Donald C. Parker

General Foreman (Fuel Operations)

Rupert G. Lindsay

Truck Driver

Conrad A. Williams

Mobile Equipment Mechanic

(Organizational)

Richard A. Parkins

Boiler Tender (High Pressure)

Frederick A. Jordan

Toolroom Attendant

Peter Hennis

Brakeman

Ashland M. Anthony

Brakeman

Cecil St. O. Brown

Materials Handling Equipment

Repairman

Reynolds M. Dixon

School Bus Driver

Pablo Brown

School Bus Driver

Albert Elliott

Chauffeur

George Layne

Chauffeur

Alexander Melbourne

Chauffeur

Ignacio M. Grant

Truck Driver

Rodolfo Z. Wilson

Chauffeur

Theodore A. Lewis

Liquid Fuels Valve Manifold Operator

Manuel J. Muñoz R.

(Painter (Coach)

Faustino Garrido

Laborer (Heavy)

Fred L. Raybourn

General Foreman, Automotive

Equipment Repair

Cleophus A. Parris

Motor Vehicle Dispatcher

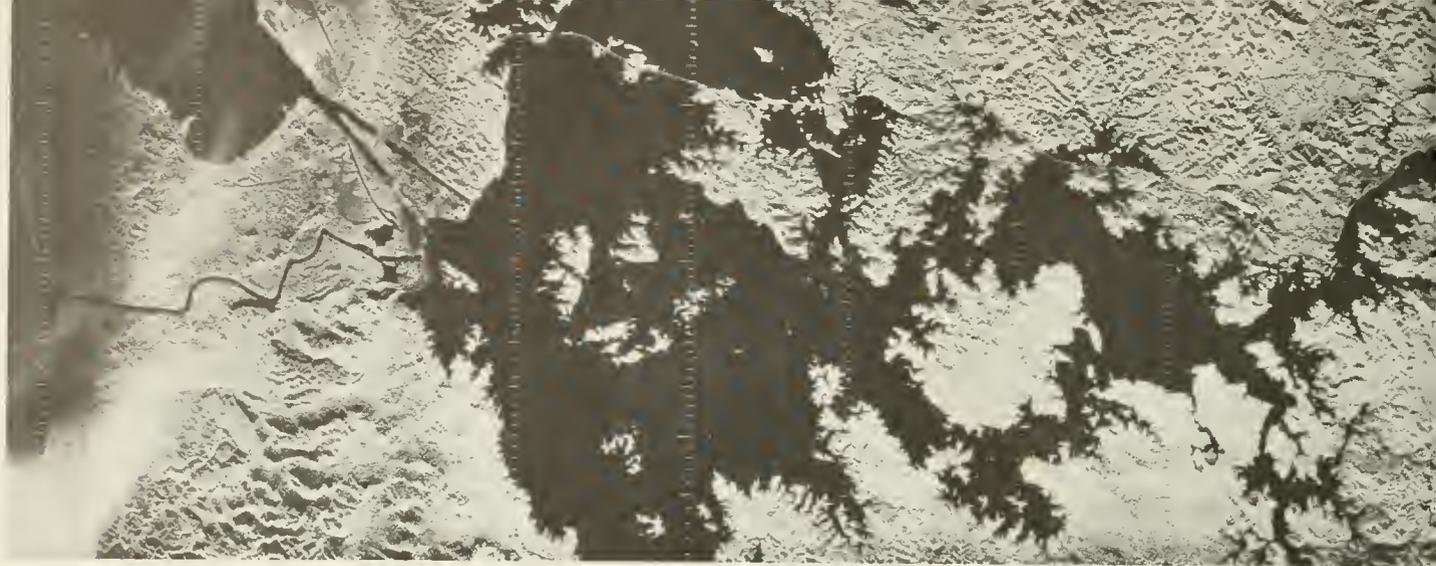
Louis B. McGoff

Supervisory Cargo Checking Assistant

Gornett H. Hartley

Supervisory Clerk

(See p. 30)



A RADAR image of the Canal Zone shows the Pacific entrance to the Canal at far right.

RADAR IMAGERY THE MAPMAKER'S FRIEND

By Jean Bailey

FOR YEARS, the constant cloud cover and smoke haze over parts of Panama and Colombia have defeated aerial photographers trying to get the photo coverage necessary for modern topographic maps.

Now, a new technique, Side Looking Airborne Radar (SLAR), is being used through the efforts of the U.S. Army Inter American Geodetic Survey (IAGS). This SLAR process results in what appears to be an aerial photograph, but actually is radar imagery.

The eternally cloud-covered swamplands and mountains of Darien Province in the Republic of Panama were selected as the site of the first radar mapping effort in Latin America. Early in 1967, Westinghouse Electric Corp., working with IAGS, the U.S. Army Topographic Command, and the Instituto Geográfico Nacional "Tommy Guardia" of Panama, obtained a radar mosaic of this important area, which is adjacent to one of the proposed sites for a new sea level canal.

Although the preparation and ground-work took much longer, the actual flying time on this project was only 6 days. The end result showed some significant errors in earlier maps.

Off 90 Degrees

For instance, it was found that a short mountain range had been misaligned about 90° and, in two locations, mountains hitherto unrecorded now could be plotted.

The mosaic corrected alignment of major river valleys, and depicted the coastline, one river and a peninsula with greater accuracy.

Further investigation disclosed that some information on vegetation types, water supply, geology, and other natural resources data could be interpreted from the new product.

Radar imagery is a record of the interaction of electromagnetic waves transmitted to earth and received in nonuniform radar return. The natural surfaces of the terrain break up the radar scan of overlapping strips. The moisture content of soil and plant life, the degree of vegetation and its surface contour all affect the radar return.

Electro Beams

To map in detail, Side Looking Airborne Radar scans in overlapping strips. A converter aboard the airplane changes the radar signals into electro beams, which flash across a display cathode-ray tube. A special camera records each line on moving film to produce an image which resembles a photograph.

Bodies of water are very "photogenic" on Side Looking Radar. They are well defined, "no return" areas due to their smooth horizontal surfaces. Water reflects the radar beam smoothly while banks and swampy vegetation cause the beam to rebound and produce a sharp edge.

As in all mapping operations, mechanically obtained data must be related to known locations on the earth's sur-

MOUNTAINS are discovered, rivers and coastlines realigned, and natural resources are indentified by the new technique of Side Looking Airborne Radar—or SLAR for short. Its results turn into radar imagery. SLAR can see through clouds and pinpoint geographic sites never before recorded.



THE SUN shines on Gamboa, but clouds cover Gaillard Cut and Gatun Lake. Fog and clouds are common during much of the rainy season and prevent aerial photography.



A MOSAIC is put together by José M. Sáenz, left, director of the National Geographical Institute of Panama, and George Richardson, IAGS project engineer.

face. Aluminum radar reflectors, each one consisting of a cluster of four corner reflectors measuring 5.5 feet on a side and 3.9 feet high, were used to position the aircraft. Each reflector of each cluster gave coverage of 60° in the azimuth plane and from 15° to 75° in the elevation plane.

During the work on the Darien, IAGS was responsible for clearing and erecting these reflectors on existing geodetic control stations located throughout the area. This involved clearing the jungle growth around each station to provide line of sight visibility to the aircraft. Where trees were taller than 25 feet, a circular area of 360 feet in diameter had to be cleared around each reflector.

By Cayuco

Many of the stations could only be reached on foot after traveling the waterways by cayuco. Wherever possible, helicopters from the IAGS Aviation Element were used to haul the reflectors and personnel.

As a direct result of the success of the Darien radar mosaic, Westinghouse was asked to undertake making radar mosaics of the other "gap" areas in the Panama photo coverage plus Pacific coastal area of Colombia. This has now been completed with most of the practical groundwork being performed by members of the Instituto Geográfico Nacional "Tommy Guardia" of Panama and the Instituto Geográfico "Agustín Codazzi" of Colombia.

At last, after years of trying to overcome the obstacle of continuous cloud cover, mapmakers have a new tool which literally cuts through the fog.

Mrs. Jean Bailey is the technical information officer for the Army Inter American Geodetic Survey.

CANAL COMMERCIAL TRAFFIC BY NATIONALITY OF VESSELS

| Nationality | First Quarter, Fiscal Year | | | | | |
|------------------|----------------------------|---------------|-----------------|---------------|-------------------|--------------------|
| | 1970 | | 1969 | | 1961-65 | |
| | No. of transits | Tons of cargo | No. of transits | Tons of cargo | Avg. No. transits | Avg. tons of cargo |
| Belgian | 34 | 96,577 | 32 | 41,347 | 12 | 37,985 |
| British | 382 | 3,164,552 | 358 | 3,041,454 | 310 | 2,047,775 |
| Chilean | 30 | 185,165 | 30 | 196,193 | 31 | 212,446 |
| Chinese (Nat'l.) | 34 | 204,307 | 34 | 269,534 | 20 | 141,456 |
| Colombian | 50 | 137,161 | 49 | 131,801 | 64 | 107,839 |
| Cypriot | 18 | 162,670 | 8 | 62,081 | — | — |
| Cuban | 14 | 153,243 | 13 | 135,797 | 1 | 3,747 |
| Danish | 103 | 433,310 | 111 | 672,463 | 78 | 359,386 |
| Ecuadorean | 17 | 23,537 | 10 | 13,772 | 12 | 14,195 |
| Finnish | 21 | 116,344 | 9 | 43,261 | 6 | 21,478 |
| French | 68 | 235,373 | 63 | 297,870 | 35 | 198,935 |
| German, West | 283 | 1,125,141 | 307 | 1,139,646 | 278 | 849,505 |
| Greek | 148 | 1,758,401 | 118 | 1,330,420 | 164 | 1,612,077 |
| Honduran | 34 | 19,315 | 56 | 32,019 | 49 | 37,823 |
| Israeli | 22 | 124,613 | 29 | 177,936 | 14 | 60,334 |
| Italian | 73 | 413,585 | 60 | 414,611 | 51 | 300,464 |
| Japanese | 286 | 2,588,664 | 263 | 2,303,735 | 221 | 1,266,483 |
| Liberian | 407 | 6,504,273 | 385 | 5,733,048 | 225 | 2,186,987 |
| Mexican | 36 | 227,048 | 38 | 143,895 | 7 | 16,402 |
| Netherlands | 131 | 740,686 | 113 | 516,715 | 147 | 701,987 |
| Norwegian | 316 | 3,796,419 | 346 | 3,648,181 | 347 | 2,520,866 |
| Panamanian | 197 | 1,052,139 | 151 | 665,703 | 112 | 468,194 |
| Peruvian | 57 | 280,477 | 40 | 181,874 | 30 | 145,532 |
| Philippine | 30 | 169,279 | 27 | 149,850 | 15 | 58,712 |
| South Korean | 18 | 131,804 | 12 | 81,617 | 1 | 9,315 |
| Soviet | 44 | 279,942 | 23 | 158,922 | 2 | 16,602 |
| Spanish | 10 | 81,287 | 6 | 23,005 | 3 | 17,148 |
| Swedish | 121 | 794,287 | 132 | 920,907 | 91 | 529,290 |
| United States | 404 | 2,105,116 | 427 | 2,194,535 | 439 | 2,623,810 |
| Yugoslavian | 11 | 142,393 | 6 | 92,246 | 3 | 19,379 |
| All Others | 57 | 580,365 | 90 | 419,929 | 49 | 183,907 |
| Total | 3,456 | 27,827,413 | 3,346 | 25,234,367 | 2,817 | 16,770,059 |

MONTHLY COMMERCIAL TRAFFIC AND TOLLS

Vessels of 300 tons net or over—(Fiscal years)

| Month | Transits | | | Gross tolls* (Thousands of dollars) | | |
|------------------------|----------|--------|---------------------------|-------------------------------------|--------|-----------------------|
| | 1970 | 1969 | Avg. No. Transits 1961-65 | 1970 | 1969 | Average Tolls 1961-65 |
| July | 1,137 | 1,122 | 960 | 7,787 | 7,089 | 4,929 |
| August | 1,186 | 1,109 | 949 | 8,136 | 7,362 | 4,920 |
| September | 1,133 | 1,115 | 908 | 7,870 | 7,473 | 4,697 |
| October | — | 1,138 | 946 | — | 7,472 | 4,838 |
| November | — | 1,103 | 922 | — | 7,279 | 4,748 |
| December | — | 1,119 | 946 | — | 7,571 | 4,955 |
| January | — | 958 | 903 | — | 6,715 | 4,635 |
| February | — | 875 | 868 | — | 5,780 | 4,506 |
| March | — | 1,135 | 1,014 | — | 7,616 | 5,325 |
| April | — | 1,168 | 966 | — | 7,526 | 5,067 |
| May | — | 1,200 | 999 | — | 8,109 | 5,232 |
| June | — | 1,108 | 954 | — | 7,466 | 5,013 |
| Totals for fiscal year | — | 13,150 | 11,335 | — | 87,458 | 58,865 |

* Before deduction of any operating expenses.

TRAFFIC MOVEMENT OVER MAIN TRADE ROUTES

The following table shows the number of transits of large, commercial vessels (300 net tons or over).

| Trade routes | First Quarter, Fiscal Year 1969 | | |
|---|---------------------------------|-------|---------------------------|
| | 1970 | 1969 | Avg. No. Transits 1961-65 |
| United States Intercoastal | 126 | 102 | 116 |
| East coast United States and South America | 336 | 411 | 590 |
| East coast United States and Central America | 140 | 177 | 124 |
| East coast United States and Far East | 861 | 821 | 566 |
| East coast United States/Canada and Australasia | 120 | 117 | 87 |
| Europe and West Coast of U.S./Canada | 252 | 232 | 215 |
| Europe and South America | 325 | 312 | 303 |
| Europe and Australasia | 87 | 91 | 85 |
| All other routes | 1,209 | 1,083 | 731 |
| Total traffic | 3,456 | 3,346 | 2,817 |

CRUISE SEASON

SEVERAL THOUSAND TOURISTS aboard 18 or more luxury liners scheduled to call at ports on both sides of the Isthmus will be visiting Panama and the Canal Zone during the 1969-70 winter-spring cruise season which began this month.

Isthmians look forward to the arrival of these majestic cruise ships whose passengers will spend a day or a few hours shopping and visiting places of interest in Panama.

Of special interest this cruise season is the transit through the Canal of the *SS United States*, the largest and fastest passenger liner under the U.S. flag. The *United States* will be the longest passenger ship ever to transit the Panama Canal. The 990-foot liner is to arrive at Cristobal January 24 and transit the next day continuing a 55-day cruise from New York to the South Seas. The beautiful *United States*, one of the great liners of modern times, will again transit the Canal March 14 on her return voyage to New York.

Panama Agencies, local representatives of the *United States*, have announced that several other luxury cruise ships will be coming to the Isthmus during this winter-spring cruise season.

South America

The *Lurline*, carrying 400 passengers on a round South America cruise originating at San Francisco, is to berth at Balboa on November 26 after transiting the Canal. She will return to the Isthmus February 25 on another South America cruise.

The *President Roosevelt* of the President Lines will visit the Isthmus November 24 and December 5, and then again March 13, April 2, and May 19 of 1970. The *President Cleveland*, also of President Lines, is scheduled to call at the Isthmus January 20 and 31 on a Caribbean cruise. She will dock at Balboa.

Grace Line

Noteworthy among the many cruise ships are the steady, regular sailings of the faithful Grace Line which include the increasingly popular 19-day trips through the Panama Canal to Ecuador, and the 44-day cruises down South America's Pacific Coast. These ships include the *Santa Maria*, *Santa Magdalena*, the *Santa Mariana*, and the *Santa Mercedes* two of which pass in the Panama Canal, one going north and one

going south, every weekend during the entire year. These vessels stop at Balboa on each trip.

Largest In World

The *France*, the largest passenger ship in the world in active service, will arrive at Cristobal February 3 on a Caribbean cruise which starts in New York. Approximately 1,500 passengers will be making the cruise aboard this magnificent ship. On March 2, the *Renaissance*, another French liner, is due to call at Cristobal with approximately 300 passengers on a Caribbean cruise. The *Renaissance* will stop at the San Blas Islands for a visit.

Italy's two largest passenger liners, the *Michelangelo* and the *Raffaello* of the Italian Lines, both of 45,000 tons, will be coming to the Isthmus. The *Michelangelo* is due to arrive at Cristobal February 7, on a Caribbean cruise originating at New York. The *Raffaello*, on a similar voyage, will arrive at Cristobal April 2 and plans to stop at the San Blas Islands for several hours. She will be the largest passenger liner ever to stop at the islands.

First Time

Italian Lines' *Leonardo Da Vinci* of 33,000 tons will transit the Canal for the first time March 8, southbound, on a Caribbean cruise and Pacific voyage. She will return to the Isthmus March 30 and berth at Balboa and transit the Canal the following day, continuing through the Caribbean on her return to New York, where all Italian cruise ships begin and end their trips this season.

Andrews & Co. has announced that the *Empress of Canada* is scheduled to make two stops at Cristobal this season as part of its winter cruise. The *Empress* will dock at Cristobal on February 24 and again on March 19.

Shota Rustaveli, a Russian liner, is due at Cristobal December 3 and February 9, on cruises organized by an English company.

Aranda of the Shaw Saville Lines is coming to Balboa November 25 and will transit the Canal the following day and continue on her regular voyage from Australia to the United Kingdom. The *Southern Cross*, also of Shaw Saville, will make the same voyage and arrive at Balboa November 26.

Other cruise ships, represented locally by Pacific Ford, S.A., are the *Stella Oceanis*, which will dock at Cristobal on December 30, and depart on a Caribbean Cruise 28 hours later. On January 20, 1970, and on February 10, this

(See p. 29)

PRINCIPAL COMMODITIES SHIPPED THROUGH THE CANAL

(All cargo figures in long tons)

Pacific to Atlantic

| Commodity | First Quarter, Fiscal Year | | |
|--|----------------------------|------------------|--------------------|
| | 1970 | 1969 | 5-Yr. Avg. 1961-65 |
| Ores, various | 1,214,546 | 1,231,354 | 282,514 |
| Boards and planks | 748,327 | 806,677 | N.A. |
| Sugar | 735,529 | 741,682 | 693,908 |
| Iron and steel plates, sheets and coils | 689,053 | 820,697 | N.A. |
| Petroleum and products | 534,979 | 150,126 | 490,599 |
| Iron and steel manufactures, miscellaneous | 371,343 | 315,711 | N.A. |
| Metals, various | 369,575 | 329,865 | 274,741 |
| Bananas | 303,068 | 296,801 | 274,753 |
| Food in refrigeration (excluding bananas) | 291,200 | 274,150 | 196,404 |
| Fishmeal | 288,192 | 414,055 | N.A. |
| Pulpwood | 278,237 | 282,618 | 130,271 |
| Plywood and veneers | 260,527 | 208,441 | N.A. |
| Petroleum coke | 242,136 | 86,530 | N.A. |
| Salt | 233,872 | 65,351 | N.A. |
| Iron and steel wire, bars, and rods | 174,637 | 146,094 | N.A. |
| All others | 2,989,886 | 2,658,063 | 5,000,241 |
| Total | 9,725,127 | 8,828,215 | 7,343,431 |

Atlantic to Pacific

| Commodity | First Quarter, Fiscal Year | | |
|---------------------------------------|----------------------------|-------------------|--------------------|
| | 1970 | 1969 | 5-Yr. Avg. 1961-65 |
| Coal and coke | 4,837,780 | 3,544,096 | 1,521,383 |
| Petroleum and products | 3,826,069 | 4,199,180 | 2,848,139 |
| Corn | 1,199,726 | 736,428 | 299,197 |
| Phosphates | 963,716 | 1,225,062 | 497,992 |
| Metal, scrap | 932,041 | 704,733 | 812,008 |
| Sorghum | 653,914 | 556,250 | N.A. |
| Soybeans | 548,990 | 486,988 | 279,937 |
| Ores, various | 517,309 | 397,495 | 70,671 |
| Sugar | 506,271 | 262,432 | 367,986 |
| Metal, iron | 258,322 | 373,884 | 48,694 |
| Rice | 238,662 | 149,353 | 28,632 |
| Chemicals, unclassified | 227,763 | 161,048 | 161,332 |
| Paper and paper products | 225,808 | 227,536 | 108,532 |
| Fertilizers, unclassified | 163,660 | 123,103 | 103,381 |
| Autos, trucks, accessories, and parts | 155,868 | 141,227 | 72,861 |
| All others | 2,846,387 | 3,117,337 | 2,205,883 |
| Total | 18,102,286 | 16,406,152 | 9,426,628 |

CANAL TRANSITS - COMMERCIAL AND U.S. GOVERNMENT

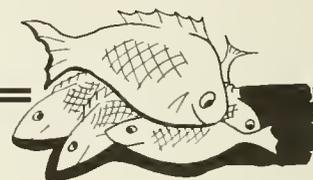
| | First Quarter, Fiscal Year | | | | |
|---|----------------------------|---------------------|--------------|--------------|---------------------------|
| | 1970 | | | 1969 | Avg. No. Transits 1961-65 |
| | Atlantic to Pacific | Pacific to Atlantic | Total | Total | Total |
| Commercial vessels: | | | | | |
| Oceangoing | 1,744 | 1,712 | 3,456 | 3,346 | 2,817 |
| Small ° | 64 | 54 | 118 | 135 | 146 |
| Total Commercial | 1,808 | 1,766 | 3,574 | 3,481 | 2,963 |
| U.S. Government Vessels: °° | | | | | |
| Oceangoing | 187 | 187 | 374 | 381 | 57 |
| Small ° | 8 | 9 | 17 | 40 | 38 |
| Total commercial and U.S. Government | 2,003 | 1,962 | 3,965 | 3,902 | 3,058 |

° Vessels under 300 net tons or 500 displacement tons.

°° Vessels on which tolls are credited. Prior to July 1, 1951, Government-operated ships transited free.



Culinary Capers



By Fannie P. Hernandez

THANKSGIVING, the day we give thanks for the many blessings of the past year, is just around the corner. In many homes preparations already have begun for this event which is the "eatingest" day of the year. Whenever there are U.S. citizens, housewives are busy with plans for family reunions, lavish dinners, and rejoicing with friends and relatives.

The turkey—traditional symbol of the feast—is in the freezer. Pumpkin and mincemeat pies have been baked. Cupboards overflow with fruits and nuts, cranberry sauce, jars of pickles, relishes and olives, small white onions for creaming, and other trimmings. All await the expert hand of the hostess for the yearly ritual.

The adventurous cook or hostess who is not too timid to draw on another cultural heritage for culinary inspiration may enjoy preparing a Thanksgiving dinner Panama style. The observance of this happy day is as good as any to learn of native favorites and food features of the locale.

Adapting some of the native foods of Panama to the Thanksgiving menu which North Americans have preserved since Colonial times may be a challenge, and fun.

Many Nations

Panama's cooking has been influenced over the centuries by the people of many nations. The Spanish settlers, the Negro slaves, the French, Italians, Chinese, Hindu, and since Canal construction days, the Yankees, have left on the Isthmus vestiges of their cultures and their kitchens.

The culinary habits of Panama have been shaped by the fruits, vegetables, and herbs native to the country, the abundance of fish, and local animals and fowl.

The even, tropical temperature permits a large number of fruits and vegetables to be available throughout the year in Panama markets and at stalls along the roadside in the Interior. Meat and fowl are plentiful all year.

Down through the years, Panama has developed its own "cuisine" replete with delicious dishes that are appetizing and distinct. Seasoning is the secret in Panama's kitchens just as it has been since primitive cooks added a bit of this and that to enhance the flavor or texture of the daily nourishment. Two flavoring agents work near miracles in Panama cookery, the "recao verde" and achiote.

Epicurean Pleasure

The mere aroma of "recao verde," which fills the air with a sweet pungent bouquet, lifts ordinary food into the realm of epicurean pleasure. "Recao verde" is a combination of herbs—sweet basil, culantro, parsley, and thyme, chopped onion, tomatoes, green pepper, and crushed garlic cooked in a little oil or butter. It makes the difference when added to sauces, stews, meats, fish, fowl and vegetables.

Achiote, the brownish-red seeds found in the market and cooked in a spoonful of lard, adds the magic of color and mild flavor much like that imparted by paprika and saffron.

A menu for a special holiday dinner in Panama may include hors d'oeuvres

of sweet sausages cooked in Malaga wine, pejibaye—the red or yellow fruit that grows in clusters on a palm tree—or the favorite of favorites, seviche, fish "cooked" in lime juice and hot peppers. There may be a roast turkey or arroz con pollo, tamales steamed in tender banana leaves, baked plantain, mashed yuca and a dessert of "glory soup" or "flan."

Sweet Sausages

Here is the recipe for the sweet sausages in wine, which are really little meatballs with a taste that's different.

| | |
|---------------------------------|--------------------------------|
| 1 lb. lean pork | 1 tsp. salt |
| 1 clove garlic | $\frac{1}{4}$ tsp. nutmeg |
| 2 small onions | $\frac{1}{4}$ tsp. cinnamon |
| 1 cup Malaga wine | $\frac{1}{4}$ cups brown sugar |
| $\frac{1}{4}$ tsp. allspice | |
| $\frac{1}{4}$ tsp. black pepper | 2 cloves |
| $\frac{1}{2}$ cup water | 1 stick cinnamon |
| 1 small bunch parsley | toothpicks |

Grind the pork with the garlic, onions, sprig of parsley, and powdered condiments and one tablespoon of wine. Mix well and let stand for 2 hours. Take a level teaspoon of the mixture and roll into balls the size of a marble. In a heavy frying pan place the water, stick of cinnamon, cloves, and brown sugar. When this boils, drop in the meatballs and add the wine. Cook slowly, stirring often until the meatballs have absorbed the liquid and are dark brown. Remove and insert toothpicks. Spear a little parsley through the toothpick first to give it that gourmet touch.

Here is one guaranteed to add zip and even a little "fire" to your holiday repast.

Seviche

Cut up 2 pounds of corbina into bite size pieces. Put the fish in a glass bowl and cover with a dressing made of lime juice, ½ teaspoon sugar, a dash of Worcestershire sauce, salt, and pepper to taste. Add two medium onions, sliced very thin (a potato peeler works just fine as it shaves the onion) and 4 or 5 little, yellow hot peppers without the seeds, slivered very thin. Mix all together, cover the bowl and let stand in refrigerator overnight. Stir and taste. Add more salt if necessary, or more peppers if it isn't hot enough. Or remove bits of pepper if it is too hot! Serve with saltines.

Panama, Ecuador, Peru, and Bolivia, each claim seviche as their very own. No matter where the first seviche was concocted, it is by far the most popular "bite size" food in Panama. Any white fish or seafood will do to make seviche and there are many versions for making this gastronomic delight.

Bocas

To prepare the "bocas" (as hors d'oeuvres are called in Panama) of peji-baye, boil them in salted water for half an hour and peel. Cut in half, discard the pit and fill the cavity with mayonnaise or butter. The nutty flavored fruit which is available from September to December, has the meaty taste of sweet potatoes or chestnuts and a slight flavor of peanuts. It is especially good as a snack with cold drinks.

Tamales

Tamales are made of rice or corn and are a typical dish of Mexico, Central America, Panama, Colombia, Venezuela, and the Caribbean area. Each country has its own version of the tamale and may call it by another name. They are a little time consuming to prepare, but the end result is well worth the effort. Small tamales are served as hors d'oeuvres at Panamanian cocktail parties and sometimes at teas.

To prepare Panamanian tamales, which are made of corn, first make a good stew with 1 pound of pork and 1½ pounds of chicken. Cut the meat into chunks and add the ingredients of "recao verde" such as chopped toma-

toes, onion, garlic, oregano, green peppers, salt, and pepper. Add a small can of tomato paste and a little water. Cook slowly until the meat is tender.

While this is cooking, wash 1 pound of crushed grain corn and boil until soft. Drain and grind it to make a dough. Add ¼ pound lard to the corn dough and knead well. Pour a little of the sauce from the stew in the dough and stir until the dough is soft and manageable. Add salt to taste. Put a portion of the dough on a piece of banana leaf which has been dipped in boiling water to tenderize it. (First grease the leaf where the dough is to be placed). Spread the dough, put pieces of meat, olives, capers, pickles, prunes and a little sauce on the dough. Cover with more corn mixture. Wrap the tamales as you would a package, tying with string to make sure they are sealed. Place in boiling salted water and cook for ½ hour.

Plantain

One of the most important contributions to Isthmian cookery is the plantain, the big banana-like vegetable in season all year. This versatile vegetable should always be cooked whether green or ripe. It is used in soups, stews, fried, mashed or baked. For a delicious treat serve baked plantain in place of candied sweet potatoes with your Thanksgiving dinner. Plantains may be baked in the skin or peeled. Here is a recipe for the peeled method:

Remove the skin from 2 or 3 ripe plantains, depending on the number of dinner guests. Partly split through the center lengthwise and remove the dark vein. Fill with pieces of butter and brown sugar. Pour a cup of sherry over the plantains and bake for 1 hour at 350 degrees. If liquid should evaporate before the plantains are soft, add a little water.

Turkey

A turkey will grace a Panamanian dinner table only on the most special occasions such as Christmas and New Year's. For a culinary adventure and a tasty treat, try this Panamanian-style dressing for the Thanksgiving turkey. The following recipe should be sufficient to stuff a 14 pound bird.

- 2½ lbs. fresh lean pork, cut in pieces
- 1 chopped onion
- 1 chopped tomato
- 1 tsp. oregano
- culantro, a few leaves

- 1 tsp. soy sauce
- 1 tsp. Worcestershire sauce
- 1 tsp. vinegar
- salt and pepper to taste

Mix all the ingredients and place in refrigerator for about 4 hours. Then cook over medium heat until the meat is tender. When cool put through a meat grinder and add:

- 1 cup raisins
- 12 olives
- 4 hard cooked eggs, chopped
- 2 tbsp. capers and 2 tbsp. juice from capers

Mix well and stuff turkey and roast according to usual method.

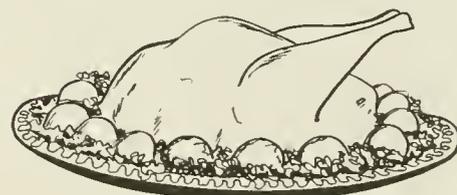
Dessert

To bring the Thanksgiving feast to a grand finale, here is the recipe for "Sopa de Gloria" which is not a soup at all but a delicious cake with custard sauce and rum or port wine.

- 2, 8-inch sponge cakes
- 1 quart water
- 1 large can condensed milk
- 1 large can evaporated milk
- 3 eggs, separated
- 2 tbsp. corn starch
- 1 tsp. vanilla
- ½ lb. sugar
- ¼ cup rum or 1/3 cup port
- ½ tsp. almond extract
- 3 sticks cinnamon
- a pinch of salt

Put the water, milk, sugar salt, corn starch and cinnamon stick in pan and cook over low heat for 10 minutes. Beat egg yolks in cup and add 2 tbsp. water. Remove milk mixture from fire and add egg yolks, stirring well. Add vanilla and let cool. Cut sponge cake into squares and place in a pyrex dish. When mixture is cool, add rum or wine and cover pieces thoroughly. Make a meringue with the egg whites and ½ lb. sugar. Cover cake with meringue and place in hot oven for 2 or 3 minutes to brown slightly. Serve cold.

(Illustrations by Carlos Méndez)



COPA = PROGRESS



MECHANIC works on COPA plane at Tocumen International Airport. Most maintenance work is done at night.



"COPA, COMPANÍA PANAMEÑA de Aviación, announces the departure of its flight to David, Panama."

The announcement over the loudspeakers in the terminal building of Tocumen International Airport in Panama City on August 15, 1947, signaled the first official flight by Panama's first scheduled domestic airline. Significantly, the start of COPA's operations coincided with the 34th anniversary of the opening of the Panama Canal. Over the years, both the waterway and the airline have been active ingredients in Panama's progress.

A few months prior to COPA's first official flight, on March 11, 1947, the loudspeakers in the Civil Air Terminal at Albrook Air Force Base, in the Canal Zone, had carried a historic announcement: "COPA, Compañía Panameña de Aviación, announces the departure of its flight number 1, to Tocumen, Panama."

Dedication

Aboard the airline's DC-3 were the President of Panama, Enrique A. Jiménez, and other high officials on their way to participate in the dedication of Panama's first truly international airport. It was also the first time that an aircraft bearing COPA's emblem—now widely known throughout the country and familiar also in airports in Central America, Colombia, and the Caribbean area—flew across Isthmian skies.

That Albrook-Tocumen flight by

COPA opened the skyways to Panama's progress.

Operating from Albrook for the next 5 months, pending the opening of Tocumen Airport to commercial aviation, COPA flew the northwest route to David, near the boundary with Costa Rica. It was a vital route, for at that time there was no modern highway linking Panama City with the capital of the country's richest province of Chiriquí. Travel by automobile to David took 10 difficult hours.

Isolated

COPA shortened the trip to 1½ hours and quickly built up a large business. It later extended its flights to Changuinola and Bocas del Toro, on the western Atlantic coast. Even today, the island capital of Bocas del Toro Province, isolated from the rest of the country and with access by sea a dangerous one, gets most of its supplies by air.

COPA's cargo manifests reflect the airline's importance for these regions. High grade poultry, refrigerators, stoves, television sets, watches, blood plasma, and the mail are some of the many goods flown daily from Panama to David. A much wider variety—even cement sacks—goes to Changuinola and Bocas del Toro.

On their return flights to the national capital COPA's aircraft bring flowers

and vegetables from Panama's highlands along with medical samples used by the Gorgas Memorial Institute for its research into tropical disease.

COPA flies regularly to Managua, Nicaragua; San José, Costa Rica; Kingston, Jamaica; and Barranquilla, Colombia. But whenever there is need, it flies to other parts of the continent. It has hauled pedigreed horses from Chile to Panama and dressed beef from Panama to Venezuela.

COPA began operations with Douglas DC-3 airplanes. Today, its fleet includes two radar-equipped AVRO-748 jet-props with Rolls Royce turbines which are among the most modern aircraft of their type. Negotiations are underway now with the Hawker Siddely factory in England for the purchase of a third 52-seat AVRO, at a cost of \$1.5 million. The rest of the fleet is made up of one 44-seat CONVAIR-340 and three DC-3's.

One reason for COPA's popularity with Isthmian air travelers is that it flies on schedule. Businessmen have no trouble keeping appointments when they fly COPA. But above all, the airline's outstanding safety record is one of its distinguishing credits. It has never had a major accident, a record that has been made possible by painstaking maintenance of its aircraft.

The Stock

Of the stock of COPA, 76 percent is owned by Panamanians, the balance of 24 percent by Pan American World Airways. All its personnel—from pilots to porters—are Panamanians. The president is Dr. Mariano Oteiza.

"We are a group of men dedicated to a single purpose and responding to a single responsibility: the growth of the company to serve the growth of Panama," says Capt. Hermes Carrizo, general manager of COPA. "We're all one team with but one job—to make COPA, which is 'proudly Panamanian', bigger, and to carry on 'COPA's cordial wings' a message of friendship and a projection of the culture and capability of Panamanians to the sister nations it serves." In his remarks, Captain Carrizo stressed both of COPA's slogans.

A former COPA pilot now tied down to an executive's chair, Captain Carrizo speaks with enthusiasm of the airline's achievements.

In 9 months this year, COPA has flown the same number of passengers—84,000—that it carried during its first 15 years of operation. At the present rate, by December 31, COPA will have transported 110,000 passengers in a single year. From January to September 1969,

RIGHT: Passengers receive help in planning their trips at Copa's busy office in Panama City.

BELOW: Captain Hermes Carrizo, general manager of Copa.



the airline has carried more than 5 million pounds of cargo. By the end of 1970, it expects to have an all AVRO-748 jet-prop fleet and in the near future Captain Carrizo expects to see jets on all COPA routes.

Stewardesses

He speaks with pride of the training provided for flight personnel. "Our pilots start their training in Panama. Then they are sent to England, Curacao and other places to specialize in flying our aircraft. We are extremely proud of their skill. So far we have trained our stewardesses locally, all of whom are

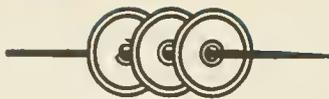
Panamanians. Starting next year they'll train in Florida."

But it is COPA's safety record that makes Carrizo proudest. "This is a credit to the skill of our pilots and the continuous maintenance program carried out by our ground personnel. Every night, all our aircraft are checked to assure perfect mechanical conditions for the following day."

COPA's maintenance hanger at Tocumen International Airport is indeed a busy place at night. Under bright lights, mechanics and technicians work feverishly on the silvery planes to keep them flying safely carrying a message of progress on "the cordial wings of COPA."

FLIGHT completed, members of Copa crew head for home. Left to right: Capt. Isauro Carrizo, pilot; Nilka Recuero, and Estela Villarreal, stewardesses; and co-pilot Rogelio Ponce.





By Tomas A. Cupas

THE BIGGEST sports festival ever held in the Republic of Panama—the XI Central American and Caribbean Games—will bring to the Isthmus an estimated 3,000 athletes from 20 Western Hemisphere nations next year.

An invasion of 15,000 to 20,000 sports fans is expected from Central America, the Caribbean, and Mexico. To cope with this unprecedented influx, authorities are conducting a housing survey to determine how many private residences will be available to accommodate visitors.

February 28 to March 14, 1970, are the dates for the games, which started 44 years ago.

It will be the second time that Panama hosts the Central American and Caribbean Olympics. The fourth Olympic games, held here in February 1938, brought 1,325 athletes from 10 countries.

Will Send Athletes

Participating this time will be the Bahamas, Barbados, Colombia, Costa Rica, Cuba, the Dominican Republic, the Netherlands West Indies, El Salvador, Guatemala, Guayana, Haiti, Jamaica, Mexico, Nicaragua, Puerto Rico, Trinidad, Tobago, Venezuela, the Virgin Islands, and of course, Panama.

The largest delegations—400 athletes for all 14 sports—are expected from Cuba, Colombia, Mexico and Panama. Venezuela is sending 360 men and women to compete in 13 sports events.

The Central American and Caribbean Games date back to 1926 when the first of these competitions was held in Mexico City after official approval from the International Olympic Committee.

Only three countries—Cuba, Guatemala, and Mexico—took part in the first event, then called the Central American Games. Caribbean was added to the official designation in 1935, when the third Olympic event was held in San Salvador.

Earthquake

Scheduled every 4 years, the games have been held only twice in off-years—in 1935 in San Salvador because of an earthquake the previous year, and

in 1959 in Caracas, Venezuela, because of elections.

The second was held in Havana. After the fourth regional Olympics in Panama City in 1938, there was a 4-year break because of World War II. The fifth event was hosted by Barranquilla, Colombia, in 1946; the sixth, by Guatemala in 1950; the seventh, by Mexico City in 1954; the eighth by Caracas in 1959, the ninth by Kingston, Jamaica, in 1962, and the 10th by San Juan, Puerto Rico, in 1966.

Puerto Rico collected the largest number of medals in the 1966 games. The home team garnered 28 gold, 28 silver, and 29 bronze medals—a total of 85—to edge Mexico by 3. The latter, however, won 39 gold prizes and Cuba 34.

Panama is well along in its preparations for the regional sports festival. The area adjacent to the Presidente Remon race track, some 8 miles from downtown on the Juan Diaz highway, is the site of the main installations under construction. There is a new 20,000-seat Olympic stadium for soccer and track and field events; an indoor Olympic gymnasium for basketball which will seat 10,000 spectators; and an Olympic pool for swimming and diving events which will accommodate 3,000 spectators.

Near Tocumen

A pistol range and bicycle race track are under construction near Tocumen International Airport.

The old Olympic stadium, one block off National Avenue (Automobile Row), which was built for the 1938 games, is being reconditioned for baseball and its capacity is being increased for 13,000 spectators.

The Olympic pool on Justo Arosemena Avenue will be used for water polo in 1970. Boxing events will be held in La Macarena bull ring, in suburban San Francisco de la Caleta, and at the national gymnasium on "A" Avenue, opposite National Guard headquarters.

Fencing events will be held at the old Union Club; judo, weight lifting and wrestling at the Colegio Javier gymnasium, on Via España; gymnastics, at the Colegio La Salle gymnasium in El Cangrejo; volleyball, at the Colegio San Agustín, on Balboa Boulevard at Paitilla.

OLYMPIC GAMES COME TO PANAMA

Ceremonies

Opening and closing ceremonies are scheduled in the new Olympic stadium the afternoon of February 28 and the evening of March 14, respectively.

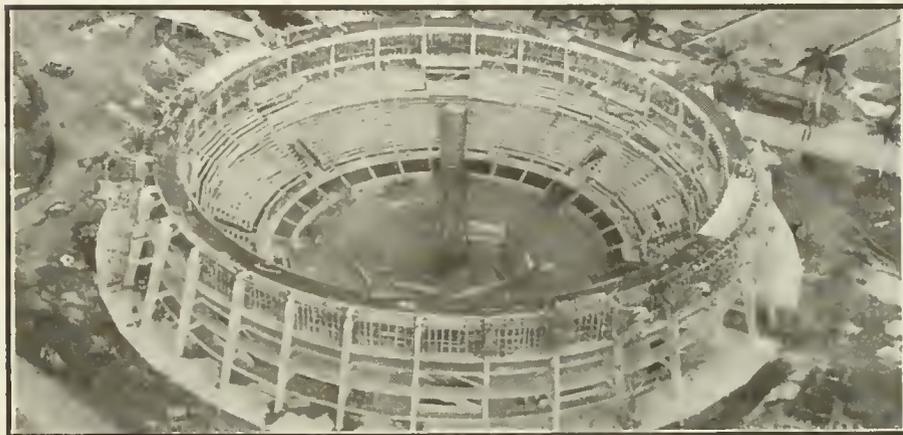
All athletes will be housed in the Central American Villa, which will be located in the Paitilla school complex that includes the city's three largest high schools. The dates for the games occur during Panama's dry season school vacation.

A large center will operate in the Justo Arosemena Institute, also in Paitilla, and will be provided with communications facilities for quick coverage of the competitions by the hundreds of newspapermen expected for the games.

Including the cost of construction, Panama is spending \$13 million for the Central American and Caribbean Games. Coaches have been brought under contract from the United States, Japan, Italy, Chile, Mexico, and other countries to train Panamanian athletes.

Held under the supervision of the Central American and Caribbean Sports Organization (ODECABE), composed of the Olympic committees of the area countries, the Central American and Caribbean Sports Games pursue the Olympic ideal of fostering friendship among nations.

Panama is concentrating its efforts to maintain the reputation it earned back in 1938 as a fine host for the Central American Olympics.



TOP: An architect's drawing of the new Olympic gymnasium which will have the capacity to seat about 10,000 spectators.

CENTER: The gymnasium under construction. Cables will support the ceiling from a cylinder in the center of the building.

BOTTOM: Inauguration and closing ceremonies of the games and various athletic events will be held at the Olympic Stadium which will accommodate 20,000 sports fans.

Biggest Sports Spectacle In History of the Republic



Dr. Horace Loftin, assistant professor of biology at Florida State University, Canal Zone Branch, looks over a topographical map of Panama.



Students register at Florida State University in the Canal Zone. The school is accredited to grant the 4-year bachelor degree.

Miss Gloria Bósquez, left, office manager, and Mrs. Haldée De Espino, secretary, check student's records.



WHEN LOUIS Morano graduated from Buffalo's Canisius High School in 1943, a black-robed Jesuit priest handed him a diploma and advised him to go out and learn more about the world. For some students, this meant a college education. But for others—including Morano—it meant service in the Armed Forces of the United States, then engaged in World War II.

Following the armistice, Morano joined the foreign service, in which he later served at many American embassies around the world. But he wanted more than a job—he wanted an education.

So he began his college work in 1956, through a University of Maryland extension program in Athens, Greece. He continued his studies for 2 years, until he was transferred to another post, and his studies lapsed until 1967. Then, an assignment to Panama allowed him to resume his education at Florida State University's Canal Zone Branch.

Dr. Corin arrived on the Isthmus in the summer of 1968, shortly after the Southern Association of Colleges and Schools had approved conversion of the F.S.U. Canal Zone undergraduate program into a fully-accredited, degree-granting branch. Since that conversion, enrollment at the school has sharply increased.

Fallen Behind

"We've grown so fast since I got here a year ago," says Corin, "that not only have we failed to keep up, but we've fallen behind."

The statement is misleading. For although Corin may lament unread novels, lagging social obligations, and the ever-shrinking hour, his school is progressing fast, and the growing enrollment—now 1,000 strong—proves it.

Florida State University was established in the Canal Zone in 1957 on the invitation of the U.S. Army Forces Southern Command (USARSO) when Louisiana State University closed its

make tremendous progress toward a degree. "The military man can achieve up to 2 years of college work during a normal tour, and the civilian can easily get his bachelor's.

"Our 4-quarter calendar system and the diverse course offering permits a prospective student to begin at almost any time," he adds.

Tuition at F.S.U. is \$18 per quarter-hour, or \$54 for the typical course. Military students receive 75 percent tuition assistance, and for approved courses the Panama Canal Company pays the full cost for its personnel—if they achieve a "C" grade or better.

Improvement

"Our goal here is to make the student a better person and citizen. Secondly, we strive to effect occupational improvement. But, if we fail in the first then we fall short as an institution of higher learning," said Corin.

Florida State University-Canal Zone currently offers the bachelor's degree in

No Football Team, Fraternities or Snack Bar, But FSU Fills the Bill

By Jay Anthony Kerans

Last August, Louis Morano walked to the front of an F.S.U. classroom in its main building at Albrook Air Force Base, turned in an examination, and qualified for a bachelor's degree in social sciences. It was his last class. He graduated several weeks later.

At The Embassy

"For me, it was a real opportunity," Morano says. "I tell the other employees here at the embassy that the opportunity is there—take it!"

Morano is now one of 12 individuals who have received their college degrees from Florida State University-Canal Zone, the only school in the Zone accredited to grant the 4-year bachelor's degree. It has no football team, fraternities or snack bar, and it operates from World War II buildings, but it performs its assigned function—education.

The resident director of Florida State University-Canal Zone is 41-year-old Theodore S. Corin, educated at the University of Miami and the parent F.S.U. campus in Tallahassee, Fla., where he received his doctorate.

extension program here. It was done primarily to provide undergraduate education for U.S. military personnel. But from the first, there was a significant civilian enrollment, now accounting for almost half of the total student population. This has enhanced the program and made possible a wider range of courses.

F.S.U. was chosen by USARSO because the school originated the "Bootstrap" concept of continuing higher education for military personnel in 1949 at Tyndall (Fla.) Air Force Base.

Mission

Bruce Blevins, education director for USARSO, explains the school's mission: "We work directly with Florida State University-Canal Zone on the curriculum, shaping it to meet the demands of the military and other students."

Blevins provides an example of the school's responsiveness: "We developed weekend classes, enabling a man to take up to 9 hours by attending Friday night and all day Saturday."

Corin says the average student can

five areas: social science, inter-American studies, English, Spanish, and a combined English business program. A terminal program in law enforcement and corrections is also available and has drawn wide response from civil and military police.

Applicants must complete an application for admission and have an academic interview with an F.S.U. counselor. Transcripts of high school and college work are also necessary. College entrance examinations may be deferred up to one full quarter to facilitate immediate enrollment.

Each academic quarter at Florida State University runs for 10 weeks, and the student may take up to 18 hours per quarter. There are 5 full-time and 20 part-time instructors currently teaching a total of 33 courses at the main Pacific campus in Building 808 at Albrook Air Force Base, plus 10 courses at the smaller Atlantic campus in Building 32 at Fort Davis.

All F.S.U. teachers must hold at least a master's degree in their fields.

(See p. 28)

(Continued from p. 27)

Tropical Studies

A typical full-time member of the F.S.U. staff is biologist Dr. Edwin Tyson. Tyson has a full course load and also assists fellow biologist Dr. Horace Loftin in operating the Florida State University Center for Tropical Studies.

"We operate three field stations in the interior," says Tyson. "These stations can accommodate a total of 16 persons at one time." F.S.U. has extended its administrative and logistical support to nearly 100 researchers since the center was founded in 1961.

Tyson went to a filing cabinet and took out several letters. One was from Korea, another from Vanderbilt University, and a third from an order of Catholic priests—all wanting to send men to Panama for research.

The assistance the University offers in this regard can be very practical. "A fellow wanted to come here to study the horsehair plant," says Tyson. "We saved him a lot of trouble—told him it wasn't to be found in Panama.

Bird Habits

Tyson shares office space with Loftin, another full-time teacher and director of the Center for Tropical Studies. Loftin has received several grants for his research in Panama, dealing with the migratory habits of birds.

Other full-time teachers include Dr. Eneida Avila, professor of sociology and Spanish; Richard Koster, professor of English and humanities; and Dr. Helen Delpar, professor of history.

Assisting the full-time staff are the University's adjunct professors, men and women employed as specialists in another job, whose background and education qualify them for teaching.

Typical of this group is Dr. Victor Slater, chief of psychiatry at Gorgas Hospital, who teaches criminology and human behavior.

Dr. Slater came to the Isthmus 3 year's ago, following 7 years at the University of Miami's Jackson Memorial Hospital, where he became skilled in forensic psychiatry, which deals with criminals and the law.

His Field

He speaks of his teaching in earnest: "It's very gratifying," he says. "In addition, I think it's good for the policeman, the housewife, everybody to become more acquainted with this field of mental health."

One of Slater's students is John Gilbert, a Canal Zone police sergeant with 17 years on the force. Gilbert is participating in the F.S.U. accreditation

program in law enforcement and corrections.

"I'm taking courses for promotional reasons," Gilbert explains bluntly. "Right now, I'm in my fourth. What you take has got to be useful to the department. I've had courses in race relations, minority groups, criminal and delinquent behavior, and now, juvenile delinquency."

So far, 70 Canal Zone policemen have taken courses at F.S.U., which is 26 percent of the total uniformed force. Of these, 17 have earned the Certificate in Law Enforcement and Corrections. One, Detective Jack L. Gregory, also earned his bachelor of science degree, graduating with honors.

Lacked Training

The curriculum for police officers first began in 1964, when a Canal Zone policeman, enrolled in regular courses, advised Florida State that many of the Canal Zone police lacked academic training. His question was, could the school do anything to meet this need?

The main Tallahassee campus was already offering both terminal certification and criminology degrees. This program was expanded to the Canal Zone with immediate success.

Until F.S.U. began offering these courses, all Canal Zone policemen chosen to receive additional training were sent to the States.

Canal Zone Police Chief Gaddis Wall is enthusiastic about the Florida State program. "The education of our police has definitely improved," he says.

In addition to its civilian and military students from the Canal Zone, F.S.U. has a Panamanian enrollment comprising 8 percent of the total student body.

Exchange Program

A program of scholarships for Panamanian students was established in

1965, administered by the Institute for the Formation and Utilization of Human Resources (IFARHU), an agency of the Panama Government. Florida State also has been linked with Panama via a faculty exchange program with the University of Panama.

Students at Florida State have access to nearly all the libraries of the Canal Zone, with more than 300,000 books on hand. In addition, F.S.U. maintains a special "core collection" of 4,500 volumes at the Fort Clayton Library, purchased by USARSO to support the curriculum offerings at the school.

The Albrook Air Force Base campus contains 10 classrooms and a small auditorium. In addition, there are two language laboratories accommodating 48 students. On the Atlantic side at Fort Davis, there are three classrooms and one language laboratory.

Opportunity

This then, is Florida State University-Canal Zone, providing the soldier, the civil servant, and the citizen of Panama an opportunity for a college degree.

Dr. Slater, makes this observation: "I see the development of a university much like that of a human being. There are crises, traumas and growing pains.

"I don't know what crisis stage we're in right now," he confesses, "but we are maturing."

And the one dozen graduates of Florida State University-Canal Zone, recipients of the first bachelor's degrees ever granted in the Canal Zone, will agree to that.

Jay Anthony Kerans is a former broadcaster in St. Louis, Mo. He is now in the Canal Zone serving as an enlisted man with the Army, and has attended Florida State University's Canal Zone Branch.

Dr. Theodore S. Corin, director and professor of higher education at Florida State University, Canal Zone Branch, is shown at his desk on the Albrook Air Force Base campus.



SHIPPING

New Fishing Trawler

THE U.S. MARITIME industry has come up with a new type fishing trawler designed to compete with foreign flag fishing vessels. The ship, named *Seafreeze Pacific*, transited the Canal southbound in October on her way to the Pacific fishing grounds. Her builders call her the world's most modern and efficient factory stern trawler to enter open competition with foreign maritime nations which have dominated the world's fishing industry.

The *Seafreeze Pacific* is only 295 feet long, but she packs a lot of "firsts" in her 1,593 gross tons. With a 50 percent construction differential subsidy provided by the U.S. Department of the Interior under the Fishing Fleet Improvement Act, the new pioneer trawler was built by the Maryland Shipbuilding and Drydock Co. in Baltimore, the first U.S. shipyard to produce this class of vessel. A sister ship, the *Seafreeze Atlantic*, will soon go into service.

The ships were designed to make maximum use of the sea's fish resources. Inedible or trash fish and waste from the cleaning process are converted to fish meal. Valuable fish oils are extracted on board. Refrigerated holds maintain packaged fish at -20° Fahrenheit in the finest reefers the refrigeration industry has produced.

Equipped for both bottom and mid-water trawling, these sturdy ships can fish under all weather conditions, short of hurricane. Stabilizing systems lessen severe rolling to provide greater comfort and more stable working conditions

for personnel. Each vessel has the capacity to process and take to market 2 million pounds of fish on a single voyage. And before leaving the ship, each pound is washed, filleted, skinned, inspected, frozen, packed, wrapped, and freezer stored.

Foreign Flag Carriers

THE NUMBER OF U.S.-owned ocean-going foreign-flag merchant vessels, most of them regular customers of the Panama Canal, has substantially increased in the past year.

The U.S. Maritime Administration said the tonnage of this type ship as

of January 1 this year increased by 2.3 million deadweight tons over that of January 1, 1968. At the beginning of this year, there were 436 of these U.S.-owned, foreign-flag vessels aggregating more than 18 million deadweight tons, as compared with 429 ships totaling 15.7 million tons on January 1 of last year.

These ships are registered mostly under the Liberian, Panamanian, and British flags. Most of them are engaged in the worldwide transport of liquid and dry bulk commodities which requires their operators to transport these commodities as cheaply and efficiently as their foreign competitors. †

Cruise Season

(Continued from p. 19)

vessel will visit Cristobal for an identical stay. Her last visit to Cristobal during this season will be on March 3.

On Caribbean cruises, the *Hamburg* will dock at Cristobal for 12 hours, on February 6, February 23, and March 31, 1970. The *Carmania*, also represented by Pacific Ford, S.A., will dock at Cristobal for a stay of 17 hours on February 11, transit the Panama Canal the next day for the Caribbean.

The Holland-America Line's *Statendam* is to arrive at Cristobal December 18 from San Francisco on its Golden West Cruise which will stop at numerous ports of the Pacific and the Caribbean. The *Statendam* will visit the Isthmus again on December 31.

The *Hanseatic*, under the German flag and chartered by the Holland-America Line, will touch at Cristobal December 23 during a Caribbean cruise and will return to Cristobal on February 15, 1970.

C. B. Fenton & Co., local agents for the Swedish-American Lines, Norwegian American Lines and Costa Armatori Lines, also announced the arrival of other luxury liners this season.

The *Kungsholm* of the Swedish-American Lines, stopped at Balboa October 28 and left the following day on her around South America cruise which originated in New York. She will return to the Isthmus April 13, 1970, on her voyage back to New York.

The *Gripsholm*, also of the Swedish-
(See p. 30)

PANAMA CANAL TRAFFIC STATISTICS FOR FIRST 3 MONTHS OF FISCAL YEAR 1970

| | TRANSITS (Oceangoing Vessels) | |
|----------------------|-------------------------------|-------|
| | 1970 | 1969 |
| Commercial..... | 3,456 | 3,346 |
| U.S. Government..... | 374 | 381 |
| Free..... | 26 | 19 |
| Total..... | 3,856 | 3,746 |

TOLLS*

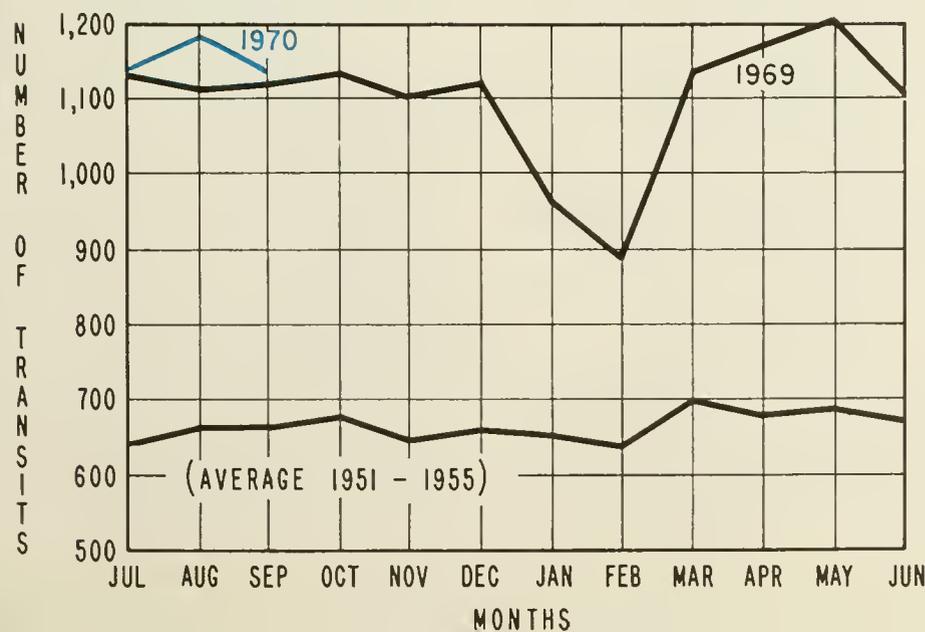
| | | |
|-----------------|--------------|--------------|
| Commercial..... | \$23,800,362 | \$21,932,175 |
| U.S. Government | 2,075,254 | 2,426,073 |
| Total..... | \$25,875,616 | \$24,358,248 |

CARGO**

| | | |
|-----------------|------------|------------|
| Commercial..... | 27,828,948 | 25,234,367 |
| U.S. Government | 1,400,274 | 2,312,423 |
| Free..... | 34,753 | 38,041 |
| Total..... | 29,263,975 | 27,584,831 |

* Includes tolls on all vessels, oceangoing and small.

** Cargo figures are in long tons.



Anniversaries

(Continued from p. 15)

SUPPLY AND COMMUNITY SERVICE BUREAU

Cecil G. Springer
Leader Cook
Winston S. Johnson
Furniture Repairman (Maintenance)
Orton Harding
Laborer (Heavy)
Benito Ortiz
Laborer (Heavy)
Horace D. Cooper
Sales Store Clerk
Eduardo C. King
Accounting Clerk
Dudley Knight
Truck Driver
José Grant
Extractor and Tumblerman
Fitz H. Grant
Inventory Management Specialist
Henry H. Lee, Jr.
Accounting Assistant
Horace A. Nurse
Supply Clerk (Typing)
Alfred A. Barnett
Leader Cook
Severiano Tiofil
Garbage Collector
Ted O. Gill
Guard
Felton L. Gill
Guard
Guillermo Benn
Warehouseman
William H. Marshall
Food Service Worker
Lyle M. Daniel
Meat Cutter
Clarence C. Bailey
Baker
Joseph Bailey
Leader Laborer (Cleaner)
Samuel C. Squires
Supervisory Sales Store Checker
Enid H. Henry
Sales Store Checker
Cuthbert C. Butcher
Supply Clerk
Henry M. Catherwood
Guard

ENGINEERING AND CONSTRUCTION BUREAU

Stephen H. Roach
Saw Filer
Benjamin J. Waterman
Mobile Equipment Mechanic
(Organizational)
George M. Clarke
Carpenter
Harris W. Hardy
Roofer
F. C. Treleven
Paint and Varnish Maker
Martin L. McNaughton
Helper Electrician

Edgar Beckford
Machine Operator
Gordon O. Small
Oiler (Floating Plant)
Hopeton W. Simms
Messenger
Augustus C. George
Leader Seaman
Charles Kurmer
Supervisory Construction Engineer
Kazimierz Bazan
Senior Operator (Generating Station)
Darnley Griffith
Oiler (Floating Plant)
James Morgan
Asphalt or Concrete Mixing Plant
Operator
David Tait
Maintenance man
Carol A. Scott
Automotive Equipment Operator
Natiel S. Douglas
Carpenter
Hilario L. Campo
Accounts Maintenance Clerk
Ignacio Betancourt
Carpenter
Hugh A. Fletcher
Painter
Rafael Valdés
Carpenter
Joseph Gerald
Carpenter
Demetrio Olmedo R.
Boiler Tender (High Pressure)
Herbert Johnson
Clerk
Cliff Beaty
Master Dipper Dredge
Charles B. Douglas
Power System Dispatcher
Luke J. Snaveley
Supervisory Civil Engineer
Nathaniel Litvin
Mechanical Engineer (Utilities)
Eulalio Arias
Laborer (Heavy)
Joseph M. Lavalas
Water Tender (Floating Plant)
Edwin N. Perryman
Motor Launch Operator
Clifford E. Cox
Seaman
Phillip H. King
Truck Driver
Kenneth Haughton
Rigger
Robert R. McCoy
Chief, Power Plant (Steam and Gas
Turbines)
Ellis B. Alleyne
Maintenance man (Dock)
Fernando Robinson
Carpenter
Cleveland J. Trowers
Carpenter
José Méndez
Joiner
Walter G. Nicholls
Plumber (Maintenance)

Arnold L. Brown
Pipelayer
James H. L. Thomas
Pipelayer
Louis H. Charles
General Foreman Painter
Rudolph A. Richards
Launch Dispatcher
Henry Bradfield
Supply Clerk
Javan E. Smith
Supply Clerk
John L. Joshua
Surveying Aid
Harold G. Walkes
Clerk-Typist
Carlyle S. Babb
Clerk
George Varsier
Clerk (Water Meters)
Goldburn P. Maynard
Clerk

CIVIL AFFAIRS BUREAU

Thomas Richards
Swimming Pool Operator
Curtis B. Darden
Supervisory Customs Inspector
D. A. Waddell, Jr.
Police Private
Edward S. Greaves
Swimming Pool Operator
Joseph B. Clemmons, Jr.
Administrative Officer
Assistant Director, Civil Affairs Bureau
Joseph N. French
Recreation Assistant

HEALTH BUREAU

Margarito Murillo
Decontaminating Equipment Operator
Raymond G. Bush
Supervising Safety Inspector
Lesep L. Barrett
Medical Aid—Ambulances
José Ortega R.
Pharmacy Assistant
Victor Knight
Clinic Clerk

Cruise Season

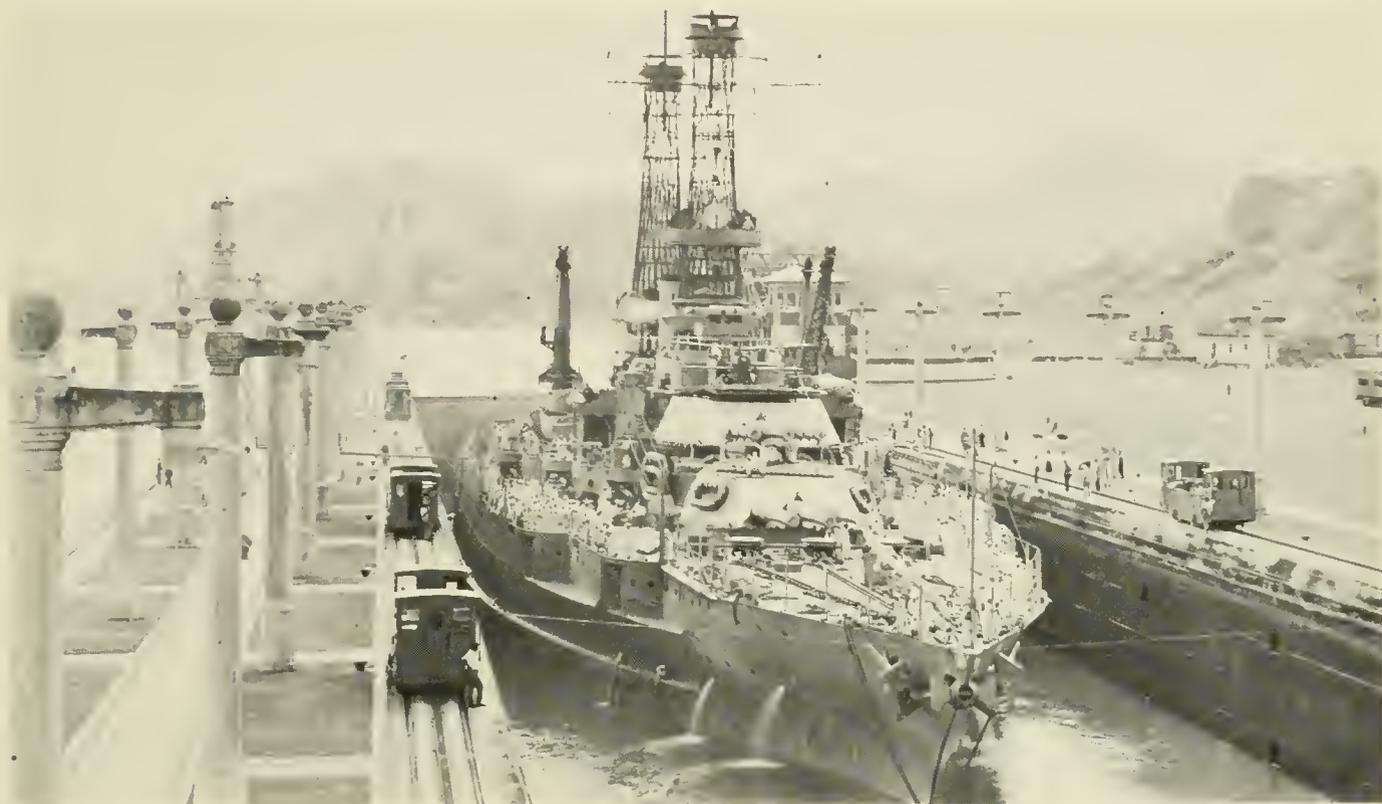
(Continued from p. 29)

American Lines, will transit the Canal January 29 and depart the following day for the Pacific on an around the world voyage.

The *Sagajford*, of the Norwegian American Lines, which stopped at Cristobal November 3 on a round South America cruise, will return January 12 and transit the Canal on her world cruise. While on the world cruise, the *Sagajford* will return to the Isthmus on March 28 and again April 3, while on her around South America cruise.

The *Carla C.*, *Federico C.*, and *Italia C.*, of the Costa Armatori Lines, will be making regular stops at Cristobal and Balboa during their Caribbean cruises from December until May 1970. ⚓

== HISTORIC MOMENTS ==



The U.S.S. Mississippi, shown in the east chamber of Pedro Miguel Locks on July 26, 1919, was one of 33 vessels of the U.S. Pacific Fleet of the U.S. Navy which went through the Canal 50 years ago on their way from the Atlantic, where they had served in the war zone, to their stations in the Pacific. The Mississippi and her sister dreadnaught, the U.S.S. New Mexico, were the largest ships ever to pass through the Canal or visit this part of the world at that time. They were 624 feet long and had beams of 97 feet 4½ inches with a displacement of 32,000 tons. The Mississippi had a draft at the time of her transit of 32 feet, 8 inches. Before that, the largest ship to pass through the Canal was the merchantman Minnesota with 622 feet in length. The transit of the Pacific Fleet was the largest operation taken on by the Canal to that date. The transit was handled smoothly and without mishap or delay in 2 days. The destroyers were handled in groups with a Canal pilot in charge of three destroyers. In the passage through the locks, six of these 310-foot vessels were placed in one chamber together in ranks of three each, lashed together. Other ships were handled individually with a Canal pilot on each.

25 Years Ago

IN THE FALL of 1944, apprehension was growing among Canal Zone residents as U.S. military leaders forecast the shift of emphasis to the Pacific theater of World War II. The collapse of Germany seemed eminent.

One Army general called for increased alert on the part of Isthmian residents and said "the enemy would take any risk involved in order to knock out any installation in this area which would impair the operation of the Canal."

In fiscal year 1944 there were 5,130 oceangoing transits of the Canal including commercial, U.S. Government and free transit ships. (There were 14,602 oceangoing vessels that transited in fiscal 1969).

It was estimated that more than 37 million hyacinth plants were destroyed

in 1944. Nearly 21 million were pulled out mostly by hand.

By order of Governor J. C. Mehaffey, 56 persons were deported from the Canal Zone during the fiscal year. Twenty-seven were convicts who had served sentences in the penitentiary and 29 were persons whose continued residence was regarded as undesirable.

There were 764 traffic accidents reported during the year, or an average of 64 a month. These accidents resulted in the deaths of 13 persons and injuries to 355 others.

10 Years Ago

IN THE FALL of 1959, Panama Canal employees were talking about the all-time record-breaking traffic through the Canal during the fiscal year. The records set were attributed to the con-

tinuing recovery from the economic recession in the United States; the economic growth of Japan; an unusually heavy flow of residual oil shipped from the United States' west coast to the east coast; and unusually large shipments of barley and other grain to Europe from the west coast of the United States and Canada.

Modernization and improvement of operating conditions of the Canal were moving forward at a fast rate. The power conversion program for locks machinery was just completed. Bids were being made for a lighting system for Gaillard Cut and the locks, and a performance contract had been signed for the design and installation of a modern traffic-control system.

Work was proceeding on the complete renovation of the Tivoli's first floor public rooms including the lobby, service desk and merchandise section.



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