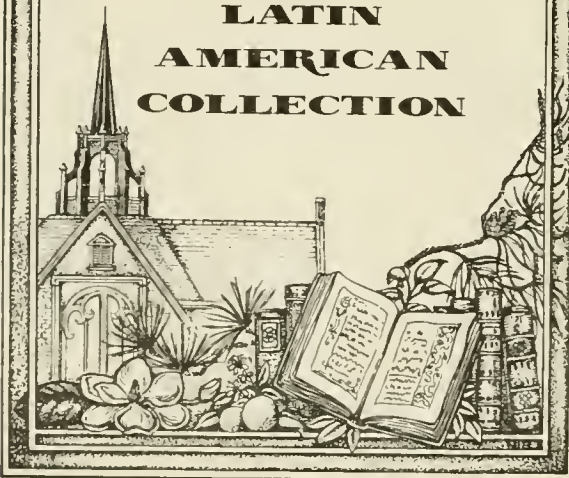




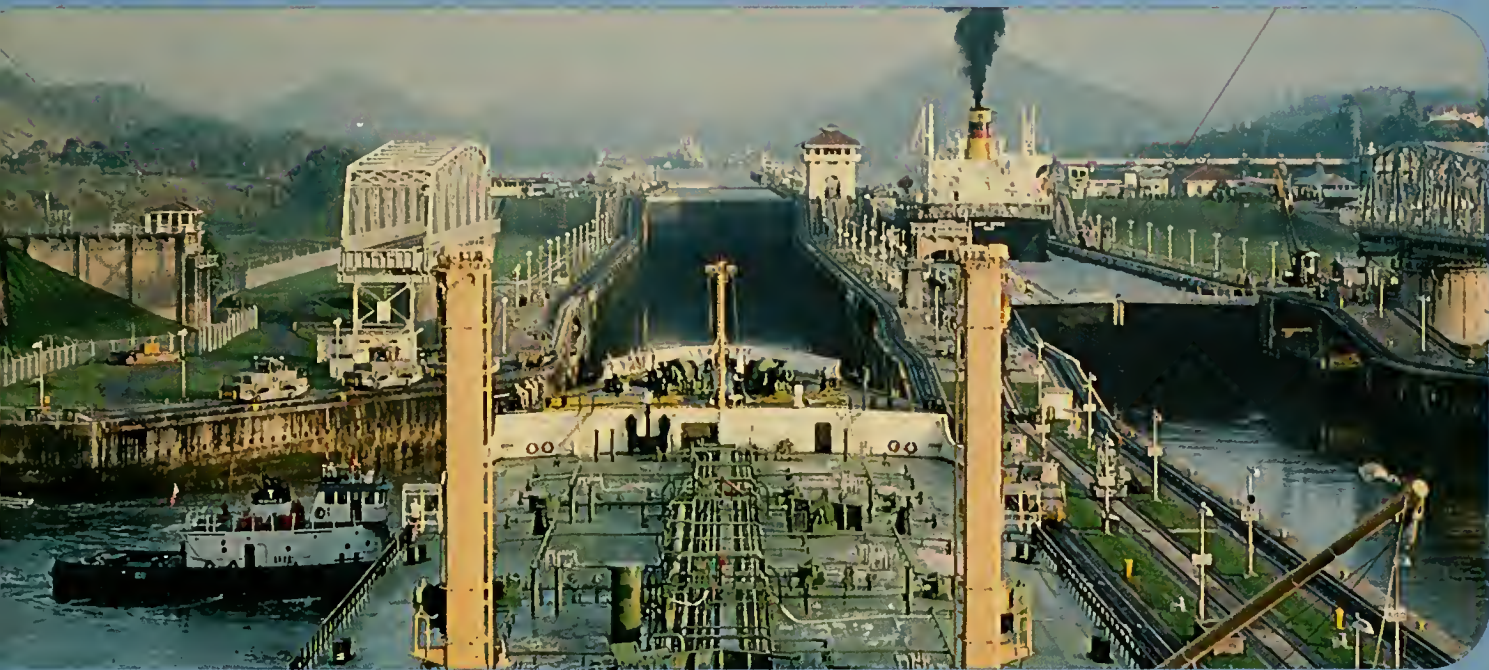
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THE PANAMA CANAL
REVIEW
SUMMER 1978

Official Panama Canal Publication

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Canal watchers—those who visit the locks regularly to take a look at the passing parade of ships—know that traffic has taken on a different look. Even a casual observer must have noticed the large number of heavily laden oil tankers passing through the waterway.

Oil from the North Slope of Alaska has reached the Canal and in this issue we are featuring a story on how the merging of the Alaska pipeline with the Panama Canal has become a temporary solution to the problem

Credits: The following individuals and companies have contributed to this edition of the REVIEW: C. Fernie & Co., agents for SOHIO at the Canal; the Overseas Shipholding Group; Jack Ott, of "The Sohian," the Alyeska Pipeline Service Co.; Duncan Beardsley, Vice President, Royal Cruise Line; and captains and crews of the "Overseas Chicago," the "Maryland," and the "Renown." Special credit for panoramic views of the Canal Zone and for layout assistance goes to Mel Kennedy, and to Kevin Jenkins, who photographed the entire voyage of the "Overseas Chicago." Other photographers, whose work is included are Arthur L. Pollack, Don Goode, and Alberto Acevedo. Map and graph are by Carlos Méndez.

In This Issue

of moving the oil to the Gulf and East Coast ports of the United States.

Along with the tankers, Canal observers probably have noticed the increase in the number of cruise liners. Much new air/sea cruise business has been generated by the Panama Canal being in the news spotlight throughout the past year as a result of the Treaty negotiations and this issue contains a collection of recipes from these luxurious ships.

On The Cover

The Trans Alaska Pipeline, the *Overseas Chicago* entering Miraflores Locks and the *Chicago* moving up the Mississippi River, appear on the front cover. On the back, the *Overseas Chicago* leaves Valdez in Alaska laden with North Slope oil. Front cover photos are by Kevin Jenkins. The back cover was provided by the Overseas Shipholding Group.

Also in this issue is the story of the Canal's watercraft, which plays such a vital role in the movement of ships through the waterway.

At right: The "Overseas New York," which broke the cargo record for the Panama Canal when she transited in April with 64,603 long tons of oil, passes the "Overseas Chicago."

The new treaties governing the future operation and defense of the Panama Canal were signed by the United States and Panama in a ceremony at OAS headquarters in Washington on September 7, 1977. They were approved by Panama in a plebiscite on October 23 of that year and the U.S. Senate gave its advice and consent to their ratification in March and April 1978. The new treaties are scheduled to go into effect 6 months after the exchange of ratification instruments between the two governments becomes effective. Panama would then assume plenary jurisdiction over what is now the Canal Zone, although U.S. police and courts would retain limited authority for a 30-month transition period.



The Panama Canal

Oil from the Arctic travels through the tropics as the Panama Canal and the Alaska Pipeline merge to move North Slope oil to U.S. East and Gulf ports

By Willie K. Friar

The Alaska Pipeline stretches 800 miles from Prudhoe Bay on the Arctic Ocean to Valdez, an ice-free port.

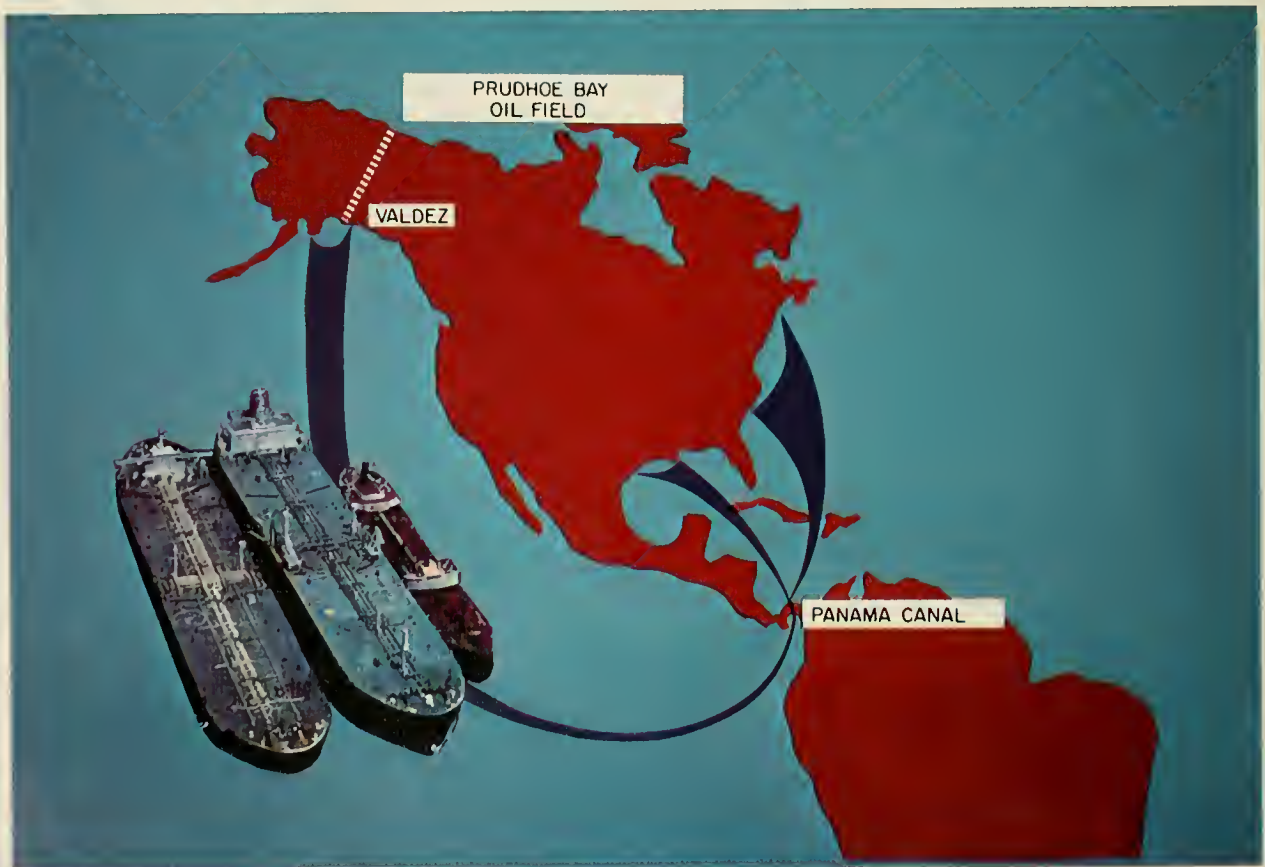
Map of North Slope oil route with ships positioned in Parita Bay.

THERE ARE 1,191,299 BARRELS of North Slope crude oil in the Panama Canal at this moment." This statement from Canal officials on April 28 announced the movement of the biggest shipment of Alaskan oil to transit the Canal at one time.

The oil, equal to the total amount of fuel consumed in the Canal Zone each

year for the generation of electricity, was aboard the *Overseas Alaska*, the *Overseas Arctic*, and the *Overseas New York* all northbound en route to U.S. Gulf ports. Laden with 64,603 long tons of oil, the *Overseas New York* set an all time high cargo record for the Canal.

It was on June 20, 1977 that the



onnection

Alaska oil first entered the pipeline at Prudhoe Bay on the Arctic Ocean. This marked the completion of the largest engineering project ever undertaken by private enterprise.

Crude oil began gushing into the big pipeline at 300,000 barrels per day. It required 9.4 million barrels of oil just to fill it and it was a month before the first oil emerged from the pipeline at Valdez Marine Terminal. In the following weeks, the movement of oil reached 600,000 barrels per day and gradually was raised to 1.2 million barrels. It now takes about a week for a barrel of oil to make the 800-mile trip from the North Slope through the pipeline to Valdez.

Construction of the Pipeline

Those acquainted with the problems involved in the construction of the Panama Canal have a special appreciation for the successful completion of the trans-Alaska Pipeline. Few engineers have ever been faced with such formidable complications of climate, terrain and government regulations as those encountered in the building of this pipeline.

Designers, choosing the route for the pipeline, had to figure the best way to cross three mountain ranges, how to cope with problems of potential earthquakes, protection of wildlife, permafrost, and the heat generated by the flow of warm oil at temperatures of 130 to 140 degrees Fahrenheit through pipes erected over frozen ground.

There were streams that crossed the route on an average of one each mile and the migration paths of caribou had to be considered as well as the salmon spawning streams and the nesting sites of birds along the routes.

Although oil was discovered at Prudhoe in 1968, it was not until April 1974 that construction began on the 358-mile road between Prudhoe Bay and the Yukon River. As soon as the road was completed, the pipeline work began in earnest with more than 22,000 persons engaged in the construction work. A monument to 20th-century technology, the pipeline construction required less than half the number of



The "Overseas Joyce," which is almost 103 feet in the beam and 736 feet long, moves through Gaillard Cut en route from Parita Bay to the East Coast of the United States with a cargo of Alaska crude oil.

workers required to build the Panama Canal.

The Alyeska Pipeline Service Co., which is the firm responsible for the design, construction and operation of the pipeline, is owned by eight firms—Amerada Hess Pipeline Corp., ARCO Pipe Line Co., SOHIO Pipe Line Co., Exxon Pipeline Co., Mobil Alaska Co., Phillips Petroleum Co., Union Alaska Pipeline Co. and BP Pipelines, Inc. Total cost of the project has been estimated at almost \$12 billion, of which \$9 billion has been spent on the pipe-

line, and \$3 billion developing Prudhoe Bay and associated facilities.

The pipeline which begins at Prudhoe Bay on the Arctic Ocean, stretches across the largest state in the nation to the ice-free port of Valdez. Between Prudhoe Bay and the Brooks Mountain Range, it crosses miles of treeless tundra underlain by permafrost where, for almost 2 months in the winter, the sun never appears. Rainfall here is about the same as in the deserts of Nevada and Utah.

The line reaches its highest point, the

The "Overseas Chicago" approaches the Exxon Refinery at Baton Rouge, La. The vessel makes regular shuttle trips through the Canal transporting oil to East and Gulf ports.





The oil arrives at Parita Bay aboard supertankers and then is discharged into smaller vessels able to transit the Canal. Above: the "Overseas Chicago," left, takes on oil from the "British Renown," which is receiving oil from the "Maryland." The "Renown" and the "Maryland" are supertankers about 178 feet in beam and 1,100 feet long. Below left: Capt. Karl Jaskierny, master of the "Overseas Chicago" watches as his ship is docked alongside the "Renown." Center: Luis Blades, Senior Port Officer of the National Port Authority of Panama, checks documents with Capt. Fred H. Adams, Master of the "Maryland." At far right: Capt. Roger Woodcock, Staff Captain of the "Renown," logs in the amount of oil taken on by the "Overseas Chicago."



4,800-foot Atigun Pass, as it climbs the Brooks Range. As it moves south approaching the Yukon River, it passes through areas where temperatures range from winter's record minus 80 degrees Fahrenheit to 90 degrees in summer.

After crossing the Yukon River, the route passes Fairbanks and then climbs over the Alaska and Chugach mountain ranges before arriving at the wet coastal area at Valdez.

The pipeline is built of 48-inch diameter steel pipe which is welded together with over 100,000 welds. The final weld, which was made May 30, 1977 about 100 miles south of Prudhoe Bay, tied together two sections of above-ground pipe. Slightly less than half the pipe is buried below ground. The rest is elevated in sections of varying length, most shorter than 30 miles.

Environmental Safeguards

One of the most sophisticated, fully automated pipeline systems in the

world, it is equipped with a computer which scans the line every 20 seconds and reports flow, pressure, temperature, rate of discharge and thousands of other types of data. The whole operation is controlled from Valdez and is tied together by microwave communication and backed up by earth satellite.

The multiple environmental safeguards covering the operations are unprecedented and include 175 cut-off valves along the line to minimize any possible oil spills.

At Valdez, the oil is stored in 28 enormous steel tanks which hold 510,000 barrels each. Built on bedrock 500 feet above the tidewater, the terminal is safe from most natural disasters including tidal waves of the type which engulfed the port at the time of the 1964 earthquake.

It was at 11:02 p.m. Alaska Daylight Time, July 29, 1977 that the first North Slope oil gushed from the pipeline at Valdez.

The Role of the Canal

It took another month for the first oil to reach the Panama Canal. On August 31, the *Washington Trader* transited the waterway with 39,776 tons of oil. This milestone, coming 63 years after the opening of the waterway, marked the beginning of the vital role of the Panama Canal in the movement of North Slope Oil to the East and Gulf coasts. The immediate solution to the problem of transporting the oil proved to be the joining together of two of the United States' greatest engineering achievements, the trans-Alaska Pipeline and the Panama Canal.

The transportation of oil through the Panama Canal involves two fleets of U.S. flag ships and two British flag vessels. The latter are the *British Renown* and the *British Resolution* two Very Large Crude Carriers (VLCCs) of approximately 265,000 deadweight tons. These ships, which are 1,100 feet long and 178 feet in beam, are an-

chored 14 miles off Chitre in Parita Bay, about 65 miles from the Canal.

A number of ships (at last count 28 or 30—it changes often) one of which is a tug-barge combination, are engaged in transit cycles of laden and ballast voyages between Parita Bay and East Coast and Gulf ports in the United States and to Puerto Rico. Supertankers, too large to transit the Canal, are used to bring the oil down from Valdez to Parita Bay. There it is pumped into the tanks of the British vessels which act as floating terminals. From them, it is transferred to smaller tankers able to fit in the 1,000 by 110 feet dimensions of the Panama Canal locks.

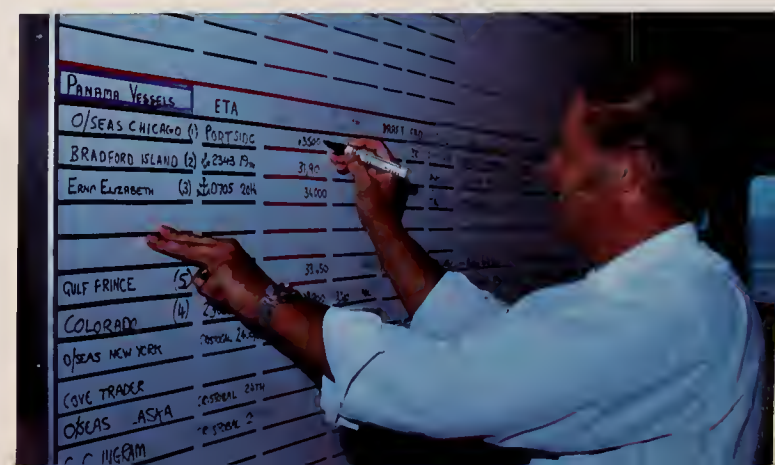
This type of operation is not unique to the Alaska oil shipments. The transfer of oil to smaller vessels is a frequent operation in places where harbor facilities cannot accommodate the supertankers. In fact, most oil imported by the United States is handled in this manner.

Operating around the clock, the

crews of the British terminal vessels can receive about 10,500 long tons per hour and discharge into the Canal shuttle ships at about 4,500 long tons per hour. The ships are equipped to take oil into their storage tanks, to transfer oil directly from one vessel to the other or to perform both operations at the same time.

Much care is taken to avoid oil pollution and at Parita Bay nothing is discharged into the sea. The oily ballast water removed from the tankers at Parita Bay is pumped into the empty supertankers for transport back to Valdez where the ballast water is cleaned in a special treatment facility, the largest of its kind.

From Alaska to the U.S. Gulf ports, via the Panama Canal, is a long journey and the oil customer might be impressed to know that from Valdez to the northernmost port on the U.S. West Coast is over 1,000 miles. It is another 2,000 miles to the Port of Long Beach in Southern California and over 6,000





Above: At the port of Valdez in Alaska, oil is stored for transfer to supertankers, such as the "Alaska," center, which is pumping oil into the "British Resolution" at Parita Bay. At right: The "British Renown," sister ship of the "Resolution," (top) receives oil from the "Maryland." At right: Panamax tankers transport oil through the Canal. At far right: Pumping oil at Parita Bay. Below: Prudhoe oil fields.



miles to Gulf Coast ports.

Close to 600,000 barrels a day of North Slope crude are being delivered to West Coast refineries and shipments through the Panama Canal have averaged 234,298 barrels a day through the first 7 months of FY 1978.

Because of the draft restrictions of the Canal, tankers larger than 50,000 deadweight tons normally cannot transit the waterway when fully loaded and most vessels over 90,000 deadweight tons cannot transit even with partial loads. But tankers able to fit in the Canal averaged 2.5 transits a day during April on the oil shuttle.

Under Federal law, domestic oil can be moved between two U.S. ports only by ships that are owned and manned by Americans. The movement of the oil through the Canal has proved very advantageous to owners of U.S. flag ships.

It has also been a great, though probably temporary, benefit financially to the Panama Canal. Several measures have been suggested to effect a long term solution to the disposition of the West Coast oil surplus. Sohio has proposed a 1,000 mile pipeline system running from Long Beach, Calif. to Midland, Tex. This would involve reversing the flow in an existing 800-mile natural gas pipeline and converting it to an oil carrier, a relatively simple and inexpensive operation. This would then be connected to about 200 miles of new pipeline. At Midland, the

system would connect with existing oil lines into the Midwest. This project would have sufficient capacity to handle most of the surplus oil at current levels. It could be completed in 14 to 24 months if the necessary permits could be obtained. However, the project has run into serious opposition from the California Air Resources Board, which is concerned about further air pollution in the area. The Board contends that the emissions resulting from the unloading of oil tankers in the harbor and escaping from the storage tanks would violate both state and Federal air quality standards.

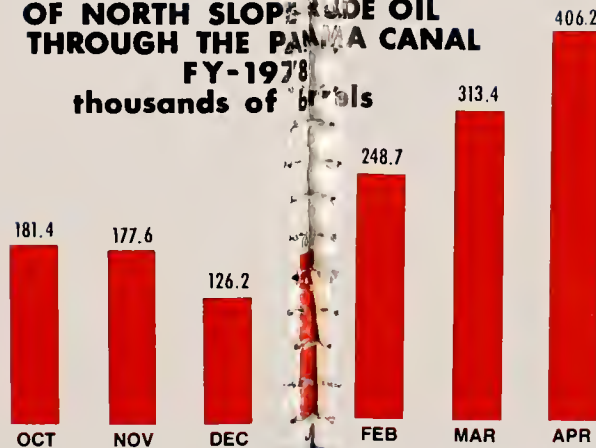
Other pipeline possibilities are being considered including a trans Guatemala and a trans Panama line. Another possible alternative is to ship the oil in VLCCs around Cape Horn. However, at this time, there are enough U.S. flag

tankers available to make the high cost Panama route feasible on a short-term basis.

From October 1977 through April 30, 315 Alaska oil tankers transited the Canal carrying 6,849,077 long tons of oil and paying \$8,419,291 in tolls. During the same period, tankers carrying Alaskan crude oil paid an average toll of \$29,880 laden and \$23,515 in ballast. During the month of April alone, 74 North Slope oil carriers transited and the daily average could remain close to 2.5 until some alternative to use of the Canal is found.

In the meantime, Northville Industries, a New Jersey company, is going ahead with construction of a permanent storage tank facility at Puerto Armuelles in Panama. Sohio has a contract with Northville to use the on-shore facility through July 1, 1980.

AVERAGE DAILY SHIPMENTS OF NORTH SLOPE CRUDE OIL THROUGH THE PANAMA CANAL FY-1978
thousands of barrels

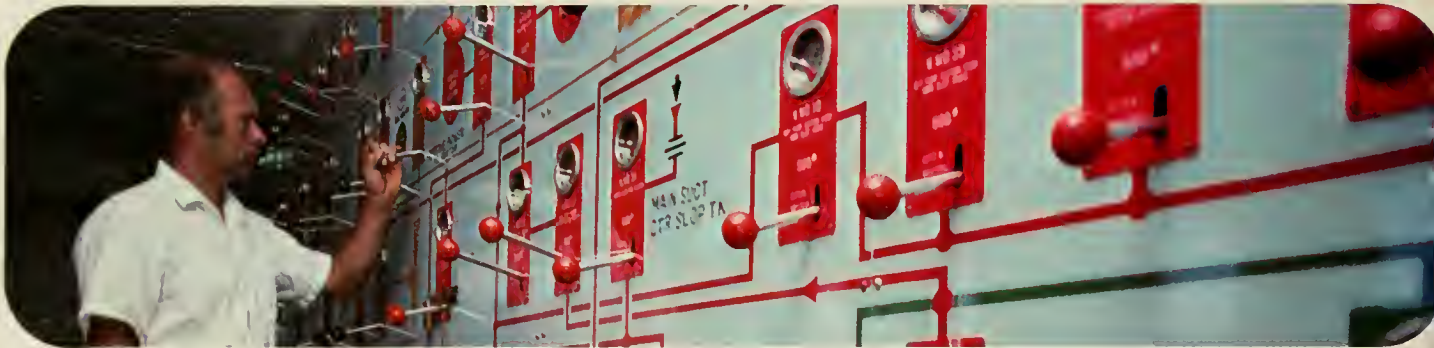




Typical of the tankers carrying oil through the Panama Canal to Gulf and East Coast ports is the "Overseas Chicago," a U.S. flag ship. With a beam of 105.9 feet and a length of 861.8 feet, the "Chicago" can take full advantage of the 110 feet by 1,000 feet dimensions of the Canal locks. The "Chicago" makes regular trips through the Canal and recently transited with 62,141 long tons of oil en route to the Exxon Refinery in Baton Rouge.



The "Overseas Chicago" takes on oil from the "British Renown" in Parita Bay.



The pumping of oil and ballast is carefully monitored aboard the "British Renown."



The heavily laden tanker moves through Gaillard Cut. Below: A Canal pilot gives instructions on his radio as the ship approaches Gatun Locks.





As the ship moves across the Caribbean, complex electronic equipment provides constant communication with the outside world.



Activity in all cargo holds can be observed quickly on this highly automated control board.



Breakfast is prepared in the modern stainless steel kitchen. Meals are served cafeteria style.



The tanker moves up the Mississippi en route to the Exxon Refinery at Baton Rouge, shown below.



Watercraft Fleet Keeps Canal Afloat

By Vicki Boatwright

THE ORIGINAL NAME OF A little workboat with bright red awnings that residents of Gamboa are accustomed to seeing chugging up and down the Chagres River is lost in history, but its usefulness goes on. Now the *Hyacinth II*, this craft was built in 1882 and was the property of the Compagnie Universelle du Canal Interocéanique. When Lt. Mark Brooke signed the receipt for the assets of the French in early 1904, the little craft became the property of the Isthmian Canal Commission. Its amazing continuance in service is due to its special talent: it is the only Company powerboat that can pass under the Gamboa Bridge at high water, and as such it is invaluable in hyacinth control work.

While the *Hyacinth II* is the oldest member of the Panama Canal fleet, it is but one of many different types of specialized watercraft in the service of the Canal organization today. The powerful tugs that assist ships in transit; the floating dredges that clear the channels of rocks and mud; the mighty cranes that offload cargo and salvage sunken vessels; and the myriad of launches that transport members of the Canal workforce to their duty stations all play an essential role in keeping the Canal operating at peak efficiency the year round.

Though none can compete with the *Hyacinth II* in age, two members of the present fleet date back to the opening days of the Canal. The crane *Hercules*, the only piece of equipment capable of

lifting the huge locks miter gates, was built in Germany and put into service in 1914. The dipper dredge *Cascadas*, now the backup for the new *Rialto M. Christensen*, was built by the Bucyrus Co. and commissioned in 1915. Over its 63-year career it has participated in some of the most dramatic of Canal projects, such as the widening of the 8.3-mile Gaillard Cut from 300 to 500 feet.

Not all the watercraft presently in use were acquired off the Isthmus. The craneboat *Atlas* and the diesel-electric tug *Arraijan*, built in 1934 and 1936 respectively, were the handicraft of the Balboa Mechanical Division. This year the Industrial Division, successor to the Mechanical Division, assisted in the installation of a new crane that gives the

An aerial view of the Dredging Division in Gamboa, home of the Canal organization's largest watercraft.



Atlas a lifting capacity of 75 tons. The new crane, which replaces a main crane and a smaller one that was located on the bow, is invaluable to the seagoing *Atlas* in its job of maintaining navigational aids, which includes the changing of buoys.

Some of the largest and most important floating craft used in Canal maintenance have no means of self-propulsion. The *Hercules*, the derrick barge *Goliath*, the suction dredge *Mindi*, the dipper dredge *Rialto M. Christensen*, the drill barge *Thor*, plus a multitude of dump scows and barges, all must rely on tug-power to get them to and from a worksite. Of the Canal organization's 17 large tugboats, one is used almost exclusively for moving dead tows.

The versatile *Goliath* has a clamshell bucket for dredging, can operate a pile driver, and has a crane with a lifting capacity of 80 tons which can be used to load and unload ships. In April of this year, the *Goliath* was essential in the removal of the softnose at Pedro Miguel after it collapsed and sank as a result of being struck by a transiting ship. The *Goliath's* next project will be the replacing of 700 dolosse, the giant concrete jacks that interlock to form the armour of the breakwater at Cristobal.

The *Mindi*, the Canal's only suction dredge, is capable of removing from the Canal bottom large quantities of fine silt material that cannot be handled efficiently by the dipper dredges. Since its acquisition by the Canal organization in 1942, the *Mindi* has been involved in dredging approaches, harbors and piers on both the Atlantic and Pacific sides, as well as working in Gaillard Cut. One of the unique jobs performed by the *Mindi* was when the suction dredge was modified and used to pump the cargo of rice and cotton out of the vessel *Sian Yung* after it sank in the Cut off Paraiso.

The *Mindi's* last large project, before being sent to the Industrial Division for repowering and overhaul, was the completion of the suction dredging phase of the widening of Gamboa Reach. The repowering of the *Mindi* will convert it from steam to diesel electric. In addition, a ladder pump will be installed. Because it will be mounted close to the cutterhead, or suction point, it will increase dredging efficiency at greater depths.

The dipper dredges rely on the drill barge *Thor*, equipped with four drill



The "Hyacinth II," a remnant of French construction days, will soon be replaced by two modern workboats from Holland after nearly 100 years of Canal service.

towers for underwater drilling and blasting operations, to break apart solid material in the Canal that would otherwise be too hard or too large for their bucket capacity. The *Thor* has been engaged since 1970 in channel deepening in Gaillard Cut, as well as being involved in two major construction projects, the widening of Gamboa Reach and of Mamei Curve north of Gamboa.

The real workhorses of the Canal fleet are the tugs, whose major function it is to assist ships in transiting and in docking and undocking. Operating out of Cristobal and Balboa harbors and out of the Dredging Division in Gamboa, the tugs at Balboa alone put in, in 1 month's time, 2,789 hours assisting ships. The tugs vary in strength from 1,000 to 3,000 horsepower. Depending on the size of the vessel they are assisting, at times two tugs may be needed to see one ship safely through the locks, as was the case with the *Queen Elizabeth 2*, earlier this year.

Besides having in its fleet some of the oldest watercraft afloat, the Panama Canal can also boast some of the most modern. The dipper dredge *Rialto M. Christensen*, built in 1977 in Hakodate, Japan at a cost of \$6 million, is one of the largest dredges of its kind in the world. Its bucket has a capacity of 15 cubic yards and can dredge 60 feet below the water surface.

The same year the Canal organization also acquired the omnidirectional tugs *M. L. Walker* and *H. Burgess*, named after the fourth and fifth gov-

ernors of the Canal Zone. These sisters feature a pair of propulsion units which can be rotated 360 degrees, enabling the tugs to thrust all 2,400 horsepower of their diesel engines in any horizontal direction. The tugs are the first of their kind in the Western Hemisphere and were built especially for work in the Panama Canal.

Presently on order from Holland are two specially designed workboats known as Multi-Cat and Mini-Cat, which feature a heavy duty steel hull construction and are equipped with a special push bow. The boats are capable of handling a whole range of tough demands put upon them by the Dredging Division, such as breaking apart suction dredge pipeline and pushing small barges and floats. Their engines have an internal fresh water cooling system, a distinct improvement over the external water intake systems that were subject to damage by the aquatic vegetation that infests Canal waters.

The Panama Canal fleet is indeed varied, ranging from rowboats to floating cranes. But each has a specialized task to perform, whether it be to respond to a slide or accident in the Canal channel or to keep the Canal Zone free from malaria by spraying insecticide on backwater mosquito breeding grounds. The stories and pictures that follow are representative of the many floating craft that keep the Panama Canal continuously open to world shipping.



Three tugs are needed to assist the "Queen Elizabeth 2" into port at Cristobal. Assisting transiting vessels is the major activity of the 16 tugs at Cristobal and Balboa harbors.



Two of the Canal's "workhorses" are locked through with a transiting vessel to be available for work at the other end of the locks. The 8-year-old "Mehaffey" is one of the largest, a 3,000 horsepower diesel tug.



The "H. Burgess" and its sister the "M. V. Walker" are the Canal's first omnidirectional tugs, capable of thrusting their power in any horizontal direction. The tugs are named after the fourth and fifth governors of the Canal Zone.



All of the Canal's tugs are equipped for firefighting, having the ability to generate foam from large capacity tanks as well as carrying dry chemicals and being able to pump water directly from the Canal.



Put to work as a survey boat, the "Papagallo" uses a sonar depth finder to locate obstructions in Canal waters.



Personnel launches are used to transport boarding parties, deckhands and pilots out to transiting ships, but getting there is only half the fun. Next is the long climb up the Jacob's ladder.



The long, narrow hull of the pilot's launch is built to withstand the rough waters of the outer anchorages.



Oil containment boom is deployed from a motorized fiberglass catamaran after a major oil spill in Balboa piers.



A panga is used for the cleanup job, as boatmen pick up oil-soaked polyurethane foam and deposit it in a drum.



With the additional current provided by an outboard motor, water hyacinths are herded through culverts under Gaillard Highway to a pond for harvesting.



The airboat "Santa Sierra" glides into weed-infested waters to spray herbicide on the floating vegetation that if left untreated would overrun the Canal.



A motorboat is essential in the spraying and fogging of Canat backwaters to keep the mosquito population under control.



A fast, lightweight craft is what's needed to change light bulbs on buoys close to shore.



IT IS GETTING DARK AND A drizzling rain falls as a ship cautiously approaches the entrance to the locks. The deckhands lean over the bow railing, their eyes scanning the water. They spot two men in a rowboat coming towards the ship.

The rowboat trails a messenger line that is being fed out by linehandlers on the locks wall.

As the rowboat nears the ship, shouts of instruction are exchanged. At the precise moment the deckhands throw a weighted heaving line; it arcs out from the bow of the ship across the rowboat and splashes into the water. The boatman in the stern grasps the line, knots it to the messenger line with practiced

speed, and casts the joined lines off. The rowboat scurries out of the way of the oncoming ship and quickly makes its way back to the locks wall. The deckhands on the ship haul in the line which linehandlers have connected to a steel locomotive cable. Only seconds have elapsed, but the ship is now safely joined to the first of the towing locomotives that will guide it through the locks.

The activity just described could have occurred in 1914 as easily as today because the procedure for getting the messenger line out to a ship is as old as the Canal itself. Today the rowboats are made of fiberglass instead of wood and the manila rope lines have

been replaced by high-strength synthetic line.

The rowboats, still referred to by many as "pangas" despite their official title of "fiberglass workboats," are among the smallest vessels that aid in putting ships through the Canal. The job of the boatmen that man them is one of the most dangerous and is performed 24 hours a day, 365 days a year in all kinds of weather. Over the years, many Marine Directors and at least one Governor of the Canal Zone have sought to find a safer and speedier way to get the job done.

Robert J. Fleming, Jr., Governor of the Canal Zone from 1962 to 1967, was convinced that there had to be at

least a more modern way. In one of his memos written on personal stationery, and wryly referred to as "snowflakes" by their recipients, the Governor insisted:

"Every time I visit the locks and see the archaic method we have of getting the lines from the mule to the ships, I cringe. . . . Other people around here have made the same remark to me that this certainly seems to be an anachronism. . . . It seem to me it should be possible to find a simpler and more effective method without going into an elaborate Rube Goldberg device."

The Governor's memo closed with a suggestion that a crossbow be used to shoot the line from the ship to the wall.

The order went out to "find a better way." E. C. Abbott, the first civilian Port Captain at Balboa, jokingly commented to the Chief of the Navigation Division: "The Governor remarks about this system being archaic but seems to think the crossbow that went out with Robin Hood would be more modern."

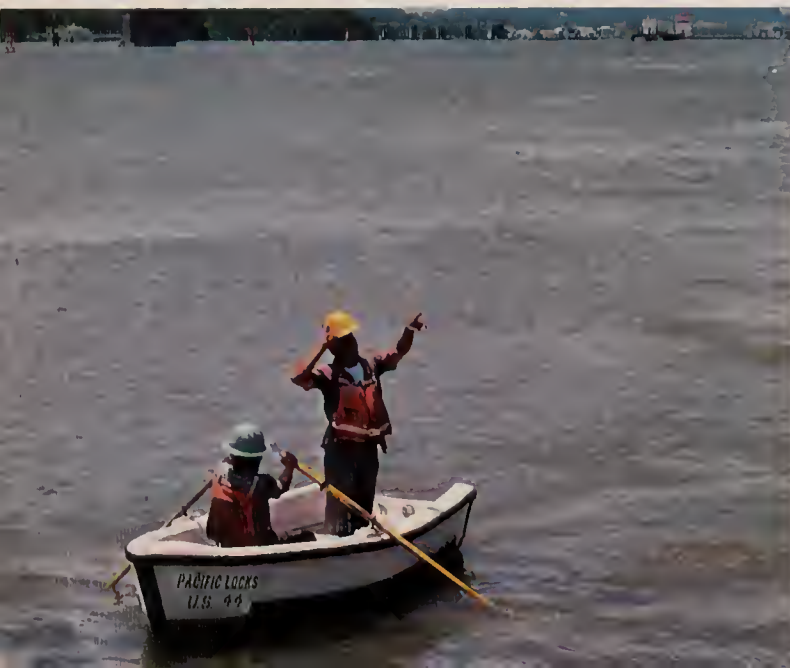
Notices were posted on bulletin boards throughout the various units of the Marine Bureau and an article appeared on the front page of the SPILLWAY asking for ideas and suggestions of ways to improve on the "row and throw" method.

A total of 22 suggestions were received, ranging from variations on the

crossbow idea to the lowering of a messenger line onto the ship by means of a gantry crane. One person suggested replacing the rowboats with a saucer-type boat with 360 degree drive. He was told to submit plans for such a craft and it would be tried out. Nothing more was heard from him.

All of the ideas were, in fact, either impractical or too dangerous, with a net result that the campaign to find a replacement for the rowboats was eventually abandoned. The records do not show Governor Fleming's reaction to the matter; but one Marine Director, recognizing the value of the rowboats, remarked, "A machete is also archaic, but it works."

The job begins when a ship comes into view . . .



Little Rowboats Perform Big Job In Panama Canal



and ends when the last messenger line is aboard.



Workmen are dwarfed by the huge hook of the "Hercules" as they loop one of four cables that will enable the crane to raise the 160-ton structural steel ladder from the dredge "Mindi" at the Industrial Division in Mount Hope. The "Hercules" and its sister the "Ajax" were built in Duisburg, Germany at the start of World War I. Tradition has it that at the request of the U.S. Department of War, hostilities were delayed for 3 days to allow the floating cranes to pass through the British blockade and proceed to the Panama Canal.



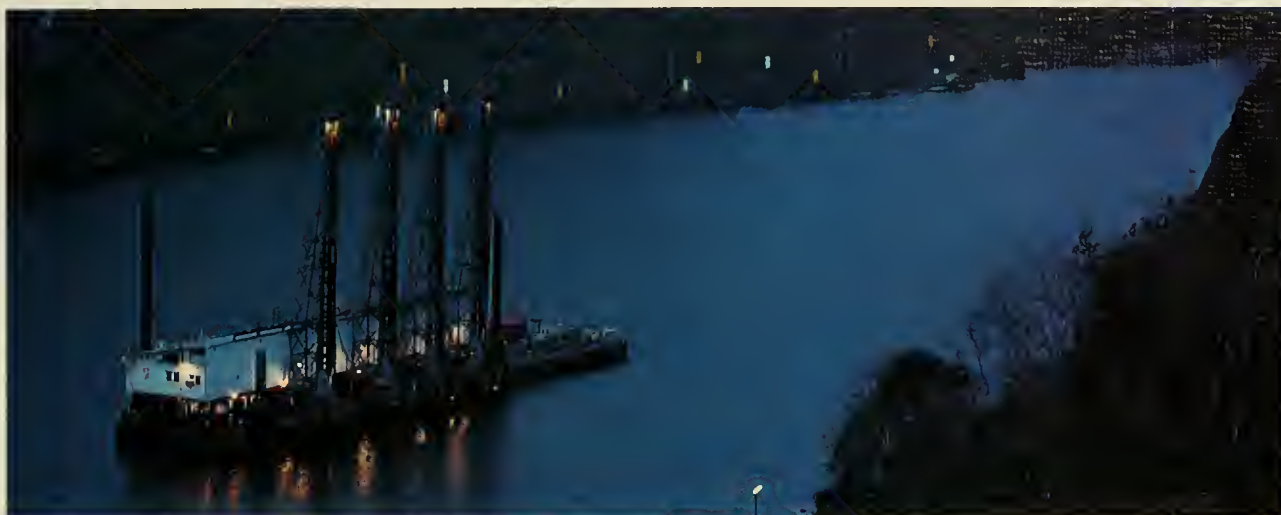
The 250-ton capacity crane "Hercules" is the Canal's only piece of floating equipment capable of lifting the 700-ton locks miter gate off its pintles for overhaul. The buoyant gate is raised into a horizontal position in the full locks chamber and floated to a drydock for maintenance.



Two Canal giants in a tandem tow, the floating cranes "Hercules," left, and "Goliath" are pushed to a worksite in Caillard Cut by the tug "San Pablo."



The suction dredge "Mindí" sucks up the continuous accumulation of silt in Balboa harbor capable of restricting the draft of vessels and pumps it outside of the channel.



It's the "graveyard shift" for the drill barge "Thor," as it performs drilling and blasting operations during channel deepening tests this year at Gold Hill.



In addition to her duties in construction dredging, the venerable "Cascadas" responds to emergencies. Here the dipper dredge works to free a fully laden oil tanker that ran aground in the Canal.



An anchor barge positions one of the huge steel pontoons used in an attempt to raise the Colombian cargo ship "Tairona" after it sank in 44 feet of water at the entrance to Cristobal harbor.



One of the largest dipper dredges in the world, the "Rialto M. Christensen" dredges alongside Santa Cruz Island at Gamboa as part of a Canal widening project. The dredge's 15-cubic yard bucket empties into a scow which will be pushed by tug to a dump site.



A familiar sight to Canal employees, the SS "Cristobal" unloads cargo on the Atlantic side piers. Originally one of three passenger ships of the Panama Line that transported employees on home leave, the "Cristobal" is now used mainly to carry supplies from New Orleans to the Canal Zone.



The ever-popular tourist launch "Las Cruces" serves Panama Canal "oldtimers" and newcomers alike on its regular Saturday afternoon outing. Following page: The view of the Chagres River from the Gamboa Golf Club is a panorama of unsurpassed beauty and a favorite scene for Isthmian residents.



Cruising Cuisine

By Fannie P. Hernandez

WORLD INTEREST IN THE Panama Canal generated by the treaty negotiations between the United States and Panama has created a sentimental curiosity in the public reminiscent of the days following the opening of the Canal when passenger ships brought to the Isthmus the first starry-eyed visitors to see the engineering wonder.

Publicity on the Canal has prompted many of those inspired by the emotionally-packed issue to come and have a look for themselves. People who until now have not given a second thought to the Canal suddenly realize it's there and must be seen. Others need only a slight nudge to fulfill the dream of a lifetime.

Whatever the reason, more and more visitors are coming to the Canal these days. They come by land, by air and the more fortunate, by sea, aboard the luxury passenger ships. Smaller cruise vessels and shorter cruises, new fares and a myriad of attractions have opened the cruise experience, formerly the exclusive pleasure of the very rich, to the less-affluent younger passenger. Cruise planners too have taken advantage of the world-wide focus on the Panama Canal and are offering more cruises that include the Canal transit. As a result, Canal devotees are filling the cruise ships to capacity.

Another important factor figuring in the growth of cruising is the advent of the air sea package cruise in which the steamship company subsidizes the cost of flying the passenger to and from the port of embarkation. Several cruise lines offer free airfare to and from the ship.

Among the passenger ships that transited the Canal in the past few months are the P. & O. Lines' *Canberra* and *Oriana*; Princess Cruises' *Pacific Princess*, *Island Princess* and *Sun Princess*; Sun Line's *Stella Solaris*; Prudential's *Santa Magdalena*, *Santa Mercedes* and *Santa Mariana*; Sitmar's *Fairsca* and *Fairwind*; Royal Viking Line's *Royal Viking Sky*, *Royal Viking Sea* and *Royal*

Viking Star; Royal Cruise Line's *Golden Odyssey*; Norwegian America Line's *Vistafjord* and *Sagafjord*; Holland America's *Rotterdam*, *Statendam* and *Veendam*; Flag Ship Cruises's *Kungsholm*; Costa Line's *Eugenio C*; Hapag-loyd's *Europa*; Black Sea Shipping's *Maxim Gorky*; Baltic Shipping's *Mikhail Lermontov*; Carras Cruises' *Danae* and Cunard's *QE2*.

Sitmar's spring cruises, offering free air fare to and from the ship, featured four 14-night cruises through the Canal. On the April 22 and May 6 sailings between Fort Lauderdale and Acapulco, the *Fairwind* presented "Broadway at Sea" with Peter Duchin and his orchestra and a repertory group performing special renditions of favorite Broadway shows. On the May 6 and May 20 sailings from San Juan to Los Angeles, the *Fairsca* featured Bob Crosby and his Bobcats and special guests Edgar Bergen and Helen Forrest. Sitmar Caribbean cruises also departed on May 27 and June 10 and sailings are scheduled for September 2 and 16. Passengers on any of these sailings visit the best ports in the Caribbean and have the thrill of transiting the Panama Canal.

Royal Viking Line's three sister ships, in the course of their Trans-Canal/



Typical of the air/sea cruise is this voyage of the "Golden Odyssey," which runs a regular schedule of cruises throughout the dry season.



Mexico/Caribbean cruises scheduled throughout most of the year, offer more Canal transits than any other line. Ports of call for the Royal Viking's Trans-Canal cruises include Caribbean islands and resorts of Mexico. Other cruises have slightly varied routes and include such ports as Cartagena, Montego Bay, Port-au-Prince, Nassau, Curacao, San Juan, St. Thomas, Acapulco, Puerto Vallarta and Mazatlan. Fly/cruise combinations are available and passengers may also cruise round-trip from either coast of the United States.

The *Golden Odyssey*, the Greek flag ship of the Royal Cruise Line, has had a major role in fulfilling clients' interest in the Canal by increasing its promotional material and adjusting its itineraries to accommodate the demand for Canal transits. The beautiful vessel that has the look of a giant private yacht has made 8 trans-Canal cruises this year and 10 cruises are scheduled for next year. The 10-day Panama Canal air/sea cruise includes round-trip air transportation from Los Angeles to Aruba where passengers board the ship, visits to Cartagena, Colombia, Acajutla, El Salvador and Acapulco, Mexico and docking at Balboa on all trips whether eastbound or westbound.

Frequent visitors to the Canal are the three Princess Cruise vessels *Princess Sun*, *Island Princess* and *Pacific Princess*, which make 14-day trans-Canal cruises back-to-back every other

week throughout winter, spring and fall. Passengers embark at Los Angeles, the ship sails to Acapulco and docks at Balboa. Following the Canal transit, the main highlight of the cruise, the Princess liner cruises the Caribbean and ends the cruise at San Juan, from where passengers are flown back to Los Angeles free. At San Juan, another group of passengers flown down from Los Angeles, boards the ship for the Caribbean cruise. After a stop at Cristobal, the vessel transits the Canal and then sails to Acapulco, Cabo San Lucas and on to Los Angeles. These beautiful ships feature a glassed-in area around the swimming pool which is ideal for viewing a transit from all sides.

This summer and fall, four Prudential cruises around South America will make special northbound stops at Balboa so passengers can meet one of the line's cargoliners here for a 40-day cruise that includes both the Panama Canal transit and the Strait of Magellan. Twelve Latin American ports will be visited before returning to Balboa. Transiting every 2 weeks, the U.S. Flag Prudential Santas are among the most frequent users of the Canal.

Visiting the Canal for the first time, the *Mardi Gras*, formerly sailing out of New Orleans to the Bahamas, recently offered a 14-day and a 17-day trans-Canal cruise; the southbound Silver Screen Cruise with June Allyson and Margaret O'Brien, and the northbound Silver Chalice Cruise featuring wine

seminars by the well-known wine columnist Robert Lawrence Balzer of the Los Angeles Times Home Magazine and Holiday Magazine. The *Mardi Gras* also called at St. Thomas, St. Maarten, Caracas, Curacao and Acapulco. The cruise included free jet flights between Acapulco and Miami and Los Angeles and Miami.

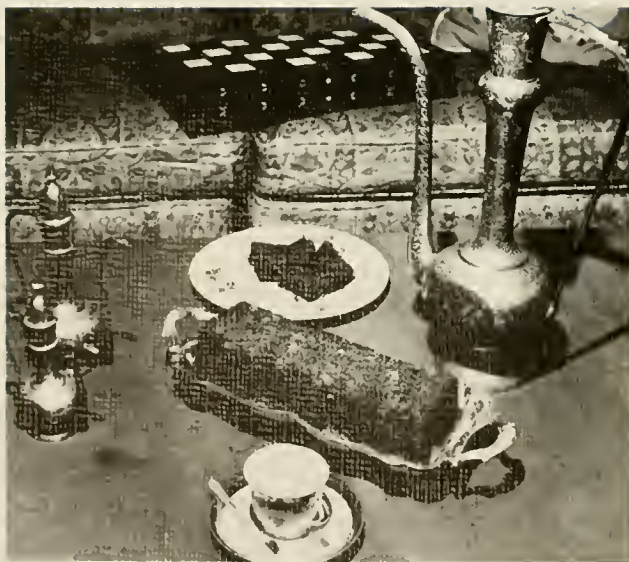
Also on her first transit of the Canal, the U.S. built SS *Universe* sailed from Port Everglades June 24 for a 23-day cruise calling at three ports in Mexico, Puerto Rico, Virgin Islands, Venezuela, Curacao, two ports in Colombia, the San Blas Islands, the Canal Zone, Costa Rica and El Salvador.

In this age of disappearing luxury, the tradition of fine cuisine is still upheld on passenger liners where cruising is more than being caressed by the sea, shipboard entertainment and sight-seeing. Food and dining in leisurely elegance is indeed an important part of a cruise.

The Management of several cruise lines has provided recipes for a sampling of dishes typical of cruise ship cuisine for REVIEW readers to enjoy while dreaming of dining at sea.

The largest passenger cruise ship in service and the largest passenger ship to transit the Canal, the *QE2* docked at Balboa for the first time on her third transit of the Canal last January.

Dining aboard the *QE2*, possibly the most exquisite occasion on any passenger liner afloat, can in itself be an



Kolokithi is Greek for zucchini. It is usually boiled, deep fried or stuffed with ground meat. Here it is the basic ingredient for a delicious nut bread, a perfect accompaniment for coffee or tea.



Lahanodolmados-stuffed cabbage leaves flavored with cinnamon and lemon for the authentic Greek touch. (Chandris Line)

unforgettable adventure. On her last winter cruise, the "Great Pacific Cruise," her larder included two tons of caviar and 33,750 pounds of lobster; her wine cellar stocked 35,000 bottles of champagne and other wines. Considered the epitome of life's gastronomic experience, the choices of food offered on the Queen are seemingly infinite. After early tea, coffee and scones on deck, breakfast possibilities include a choice of seven juices and fresh fruits; 11 kinds of hot and cold cereal; eggs prepared every imaginable way; 2 kinds each of bacon, ham and sausage; broiled tomatoes; French onion soup; kippered herring; poached finnan haddie; cold ham, chicken, beef and turkey; grilled lamb chops and sautéed potatoes; and an endless variety of breads and jellies and jams. Needless to say, a listing of the lunch and dinner offerings would boggle the mind.

Be it on the Mediterranean, the Mexican Riviera or the 10-day Panama Canal air/sea cruise, dining aboard the *Golden Odyssey*, the newest cruise ship to transit the Canal, is a memorable, mouth-watering event. From the superb cuisine of this magnificent ship and the chef's collection of favorite Greek recipes enjoy Tyropites, golden, crisp cheese pastries, and Kolokithi Nut Bread, a delicious nut bread made with zucchini (kolokithi in Greek).

Tyropites

(Savory Cheese Triangles)

- 1 8-oz. package cream cheese
- ½ lb. feta cheese, crumbled
- 2 eggs, slightly beaten
- 1 tbs. all purpose flour
- pinch of salt, if desired
- 1 tsp. ground nutmeg
- ½ lb. plus 3 tbs. butter or margarine, melted
- 1 lb. commercial filo pastry sheets, cut in thirds (3 x 11 inches)

In a bowl, combine cheese, eggs, flour, salt (omit salt if feta is very salty), nutmeg and 3 tablespoons butter. Cover bowl. Chill several hours or overnight. Take out of refrigerator 1 hour before using.

Pile up filo, cover with waxed paper and damp towel. Take 1 sheet. Keep rest covered. Butter filo, using pastry brush and ½ lb. butter or margarine, melted and warm. Put 1 tsp. filling 1 inch from end nearest you. Fold filo back over filling so bottom edge meets left edge, making a right angle. Keep folding back at right angles to make triangular shape with each sheet of filo. Repeat this procedure. Place on baking sheets and keep covered until all are ready to bake. Bake at 350°



Passengers aboard the "Royal Viking Sky" watch operations as their ship transits. Royal Viking Line's three sister ships offer more Canal transits than any other line.

20-25 minutes or until golden and crisp, turning once. Serve hot. Makes about 60 triangles (2½ inches).

Kolokithi Nut Bread

- 2 cups sugar
- 3 eggs well beaten
- 1 cup oil
- 1 tsp. soda
- 1 tsp. salt
- 1 tsp. cinnamon

- ¼ tsp. baking powder
- 3 cups allpurpose flour
- 1 cup finely chopped nuts
- 2 cups grated kolokithia (do not peel)

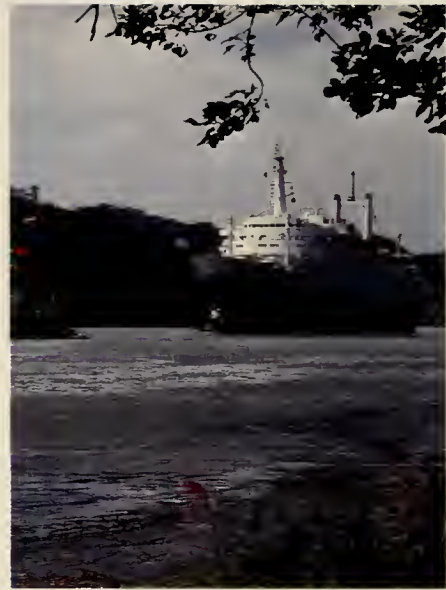
Mix sugar and eggs. Add all remaining ingredients. Bake in two large or three small loaf pans. Bake at 350° for 40-50 minutes. Allow to cool on rack before slicing. This bread freezes beautifully.



Hors d'oeuvres at cocktail time on the "Golden Odyssey" may include these golden, crisp cheese-filled pastries called tyropites.



On her third visit to the waterway, the "QE2" transited the Canal and docked for the first time at the port of Balboa.



The SS "Rotterdam" approaches Pedro Miguel.

All recipes were prepared and table settings arranged by Noreen Singer.



Deliciously aromatic, French Onion Soup Gratinée is served for breakfast everyday on the "QE2."



The finest aged Dutch Gouda is used to prepare this Cheese Fondue.

The French chef on the QE2 offers his recipe for French onion soup:

French Onion Soup Gratinee

4 large onions
1 tbs. flour
2½ oz butter
2 pints beef stock or bouillon
salt and pepper
grated Gruyere cheese
breaded croutons

Place the onions, finely sliced, in pan together with butter, stir and cook over a gentle heat until the onions are golden brown. Add flour, continue to stir until flour is well blended with butter and onions. Continue to cook for about 3 minutes, then gradually stir in the beef stock, blending with the rest. Add salt and pepper, cover the pan and cook gently for 20 minutes. When ready to serve, pour bowls and top with slices of bread rolls or rounds of French bread previously fried in butter. Sprinkle liberally with grated Gruyère cheese and place in a hot oven or under the grill to brown the cheese. Serve at once.

The *Rotterdam*, the Dutch flag ship of the Holland America Line, stopped at the Canal in February on the first leg of her around-the-world cruise. The Line's *Statendam* and *Veendam* also transit the Canal once a year on world cruises. Food aboard these ships may be described as deliciously exotic and international. One of the many special features which can be found on a Holland America cruise is a demonstration

on the art of making Dutch Cheese Fondue. Following is the recipe which serves four to six:

1 lb. Dutch Gouda Cheese
(coarsely grated)
1 tbs. cornstarch
2 cups dry white wine
1 medium sized garlic clove peeled and bruised with the flat of a knife
2 tbs. Kirsch liqueur
¼ tsp. grated nutmeg
¼ tsp. salt
freshly ground black pepper
1 large loaf of French or Italian bread cut into 1-inch cubes including the crust.

Toss the cheese and cornstarch together in a large bowl. Pour the wine into a two-quart fondue dish, drop in the garlic and bring to a boil over high heat. Let the wine boil for 1 or 2 minutes, then remove the garlic. Lower the heat so that the wine barely simmers. Stir constantly with a table fork while adding the cheese mixture a handful at a time, letting each handful melt before adding another. When the fondue is creamy and smooth, stir in the Kirsch and season to taste.

Place the fondue dish over an alcohol or gas table burner, regulating the heat so that the fondue barely simmers. Traditionally, each diner spears a cube of bread on a fork, swirls the bread about in the fondue until thoroughly coated, then eats it immediately.

A preference of passengers on the Holland America cruises (especially repeat passengers) is Dutch Pea Soup.

Here it is:

Ertwensoepe (Pea Soup)

2 cups split peas
1 cup whole green peas
10 cups (2½ quarts) water
3 onions, finely chopped
2 leeks, finely chopped
3 ribs of celery with leaves, finely chopped
½ lb. smoked bacon, unsliced
1 large ham hock
1 whole smoked sausage ring
freshly ground pepper

1. Soak both types of peas overnight in just enough water to cover them.

2. Next day, drain the peas, then place them in 2½ quarts of water in a large pot with all of the other ingredients except the sausage. Bring to a boil.

3. Turn heat down and let entire mixture simmer for 1½ hours, stirring often. If soup becomes thick, thin by gradually adding small amounts of water.

4. Add sausage and continue simmering for 15 more minutes. Pepper to taste.

5. Remove bacon, ham and sausage. Slice and serve on pumpernickel bread. 6-8 large servings. In Holland, this dish is usually served as a main dish.

One of the favorite desserts served on board the Holland America cruise ships is Bananas Martinique made this way:

Ingredients required:

6 ripe bananas
1 orange
3 tbs. butter



A favorite dessert, Bananas Martinique, is served with great flair on the SS "Statendam."



Ertwensoepe, a hearty Dutch pea soup is a favorite of passengers on the Holland America Line.

PRINCIPAL COMMODITIES SHIPPED THROUGH THE CANAL

(in long tons)

Atlantic to Pacific

Commodity	6 Months FY 1978	6 Months FY 1977
Petroleum and products	5,098,725	4,685,008
Corn	4,479,041	5,106,107
Coal and coke	4,129,163	6,313,559
Soybeans	2,883,453	2,533,962
Phosphate	2,219,164	1,851,283
Sorghum	1,490,771	1,678,256
Wheat	1,332,006	1,012,240
Manufactures of iron and steel	997,099	371,966
Chemicals and petroleum chemicals	899,075	796,940
Ores, various	759,013	725,739
Metal, scrap	751,867	622,921
Fertilizers, unclassified	716,011	531,567
Sugar	554,090	315,996
Ammonium compounds	319,537	197,181
Caustic soda	272,937	287,317
All other	4,602,976	7,236,762
Total	31,504,928	34,266,804

Pacific to Atlantic

Commodity	6 Months FY 1978	6 Months FY 1977
Petroleum and products	10,102,124	7,059,814
Manufactures of iron and steel	4,108,986	3,663,019
Ores, various	2,478,799	2,550,014
Lumber and products	2,432,983	2,214,203
Sugar	1,469,290	1,377,129
Food in refrigeration (excluding bananas)	873,976	903,975
Bananas	843,718	787,302
Woodpulp	768,143	870,209
Metals, various	704,462	667,134
Coal and coke	630,473	176,096
Autos, trucks, and accessories	579,526	399,042
Wheat	554,930	453,706
Sulfur	464,671	511,113
Paper and products	425,595	284,710
Molasses	422,384	334,546
All other	5,615,525	5,015,308
Total	32,475,585	27,267,320

CANAL TRANSITS—COMMERCIAL AND U.S. GOVERNMENT

	6 Months FY 1978			6 Months FY 1977
	Atlantic to Pacific	Pacific to Atlantic	Total	
Commercial:				
Oceangoing	3,070	2,984	6,054	5,843
Small ¹	218	109	327	378
Total	3,288	3,093	6,381	6,221
U.S. Government:				
Oceangoing	24	21	45	43
Small ¹	61	43	104	122
Total	85	64	149	165
Grand Total	3,373	3,157	6,530	6,386

¹ Vessels under 300 net tons, Panama Canal measurement, or under 500 displacement tons.
Statistics compiled by the Executive Planning Staff.

- ¼ cup sugar
- ¾ cup apricot sauce
- 1 cup rum
- ¼ cup toasted almonds

In a large chafing dish, melt the butter and add sugar. Cook until sugar caramelizes or becomes light brown. Squeeze the juice from the orange into the pan and continue heating. Add the apricot sauce, and when hot add the rum. Peel and slice the bananas lengthwise. Add the bananas to the hot sauce, and cook them for a few minutes on each side.

Sprinkle a few more drops of rum over sauce and flame rum with a match. When the flames die down, place bananas on dessert plates and sprinkle toasted almonds over them. Serves 6.

*Apricot sauce may be made by using 1/3 cup apricot jam and thinning it down with ¼ cup apricot juice or orange juice. Heat until jam becomes a smooth sauce.

From the Italian chef on the *Island Princess* where dining is a favorite pastime, here is a duck recipe for a gala dinner:

Duck A La Rouennaise

- 1 4-5 pound duck
- 2 shallots—finely minced
- 2/3 cup red wine
- ¼ cup melted butter
- pinch—nutmeg, basil, marjoram

Clean duck and salt and pepper inside and out. Combine other above ingredients and pour over duck. Roast for approximately 1 hour at 425° in a preheated oven. (Duck should be nicely browned but rare inside.) Baste occasionally during roasting time.

While duck is roasting—prepare the following sauce:

- 1 1/3 cups red wine
- ½ tsp. shallots—finely minced
- 1½ cups meat gravy
- Duck liver—passed through a sieve (uncooked)
- ¼ cup butter
- 1½ ounce cognac

- 1 leaf thyme (or equivalent in crumbled thyme)
- 1 leaf bay laurel

Combine wine, shallots and spices in a sauce pan. Bring to boil and cook to reduce in quantity to 2/3 original volume. Add meat gravy and let boil a couple of minutes longer. Reduce heat and simmer. Add duck liver, gravy and remaining ingredients. Heat thoroughly.

While sauce is heating—take duck from oven and let sit for 10 minutes. Remove from fat and drippings and carve into serving pieces, being sure to retain juices and blood rendered during carving. Carving juices should then be added to the simmering sauce.

OCEANGOING COMMERCIAL TRANSITS BY NATIONALITY

Nationality	6 Months FY 1978		6 Months FY 1977	
	No. of Transits	Long Tons Cargo	No. of Transits	Long Tons Cargo
British	514	4,536,526	532	4,725,067
Chilean	88	953,677	60	860,788
Chinese. Nat'l.	49	574,120	98	778,636
Colombian	89	610,207	87	163,211
Cuban	47	282,098	38	165,808
Cypriot	43	196,581	40	144,838
Danish	125	1,083,985	148	1,147,284
Ecuadorian	94	837,387	84	797,579
French	60	523,910	73	564,481
German, West	273	1,956,465	296	2,039,153
Greek	650	8,576,443	553	8,540,138
Italian	126	745,095	106	599,082
Japanese	459	3,996,490	465	4,830,019
Liberian	925	14,529,111	889	14,922,188
Mexican	40	318,065	17	126,172
Netherlands	90	639,332	109	624,832
Norwegian	249	3,345,559	303	4,629,096
Panamanian	491	3,692,341	546	4,007,402
Peruvian	101	887,753	81	836,632
Polish	42	250,360	38	325,413
Singaporean	79	853,632	48	483,674
South Korean	43	410,208	31	199,698
Soviet	111	685,339	97	699,104
Spanish	53	124,064	40	168,416
Swedish	131	1,199,120	134	1,390,894
United States	643	8,430,847	539	4,275,067
Yugoslavian	67	503,552	49	391,290
All other	372	3,228,246	342	3,098,162
Total	6,054	63,980,513	5,843	61,534,124

OCEANGOING COMMERCIAL TRANSITS OVER PRINCIPAL TRADE ROUTES

Trade route	6 Months FY 1978	6 Months FY 1977
	East Coast United States—Asia	1,400
East Coast United States—West Coast South America	615	498
Europe—West Coast South America	543	539
East Coast United States—West Coast Central America	485	269
Europe—West Coast United States/Canada	473	434
South American Intercoastal	207	222
U.S. Intercoastal (including Alaska and Hawaii)	185	221
East Coast United States/Canada—Oceania	172	155
Europe—Oceania	145	203
East Coast Canada—Asia	143	139
All other	1,686	1,830
Total	6,054	5,843

OCEANGOING COMMERCIAL TRAFFIC BY MONTHS

Month	Transits		Tolls (In thousands of dollars) ¹	
	FY 1978	FY 1977	FY 1978	FY 1977
October	1,028	976	\$14,995	\$11,488
November	947	968	14,280	12,777
December	1,002	943	14,848	13,887
January	1,000	983	14,433	13,818
February	942	916	14,199	12,978
March	1,135	1,057	17,022	14,064
Total	6,054	5,843	\$89,777	\$79,012

¹ Before deduction of any operating expenses.

Statistics compiled by Executive Planning Staff.

PANAMA CANAL TRAFFIC

	6 Months	
	1978	1977
TRANSITS (Oceangoing)		
Commercial	6,054	5,843
U.S. Government	45	43
Free	3	8
Total	6,102	5,894

TOLLS¹		
Commercial	\$89,799,541	\$79,040,771
U.S. Government	421,734	382,418
Total	\$90,221,275	\$79,423,189

CARGO² (Oceangoing)		
Commercial	63,980,513	61,534,124
U.S. Government	131,771	96,937
Free		
Total	64,112,284	61,631,061

¹Includes tolls on all vessels, oceangoing and small.

²Cargo figures are in long tons.

Statistics compiled by Executive Planning Staff.

Place carved duck in casserole (or individual serving dishes) pour sauce over the duck. Dot top of duck with additional butter and return to oven—350° for 20 minutes. Serve immediately.

From the Chandris Line's cruise vessels *Australis* and *Britanis* which also feature Greek dishes on their visits to the Canal, here is a recipe for stuffed cabbage leaves:

Lahanodolmados—Stuffed Cabbage Leaves

2 medium cabbages (outer leaves only)

1 lb. ground meat

2 onions, chopped

3 tbs. butter

salt and pepper

2 tbs. tomato paste

cinnamon

1 cup boiling water

quarter cup raw rice

boiling water

lemon slices

Parboil cabbage leaves about 5 minutes being careful not to tear them. Drain in a colander. Brown ground beef and chopped onions in 2 tablespoons of the butter. Add salt and pepper, half the tomato paste and cinnamon. Add water and rice. Simmer until rice is partially done. Stuff cabbage leaves by removing heavy center of cabbage leaf and cut each leaf in two. Place one rounded tablespoon of meat mixture near cut end of leaf. Fold over. Fold edges in towards center and roll up lightly. Cover bottom of greased casserole with cabbage leaves. Place rolls in layers, and add remaining tomato paste, diluted in enough boiling water to cover. Dot with remaining butter. Cover and simmer for 2 hours or until done. Serve with lemon slices. (6 servings).



Panoramic Views of the CANAL ZONE

*A view of the Pacific side as seen from
the west bank of the Panama Canal.
An Atlantic side scene photographed from
atop the Mount Hope water tower.*

















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