January February 1986





# SOUTH FROM ALASKA

"Looks like a typical fall day," Jack Worman says as he gazes out the windows ringing the bridge of the S.S. Sansinena II. It's just past 8 a.m. on a cold, drizzly morning in Alaska's Cook Inlet. Four decks below, the body of the 810-foot-long crude oil tanker stretches out before us—a vast ark of steel and piping whose bow is barely visible through the gray mist.

"Kind of makes you long for a nice warm bed, doesn't it?" Worman says.

To be sure, a warm bed would be welcome about now. But a ship's regimen doesn't change for the weather, and Worman, the San II's chief mate, is on watch until noon. The morning promises to be a busy one. In less than 30 minutes the ship will arrive at Drift River Terminal, located in Redoubt Bay on the western edge of the Inlet. There, Sansinena II will load up with 390,000 barrels of Cook Inlet crude destined for Unocal's San Francisco Refinery.

Joining Worman on the bridge is A.B. (able-bodied seaman) Ian McLeod, who stands by at the helm, and Captain Steven W. Tilghman, the ship's master. Cradling a cup of steaming hot coffee in his hands, Tilghman is huddled over one of two glowing radar screens. The scope's sweep hand outlines the coast with each pass, and a bright blip offshore—about six miles from the ship—indicates the Drift River Terminal.

Stepping over to the VHF radio, Tilghman puts in a call. "Roger, Sansinena II, this is Drift River Terminal," a voice crackles back. "We weren't expecting you for another hour yet, Cap." "Well, we're in town—and mighty empty," Tilghman says. "Can you help us out?"

"Oh, I think we can oblige you," the voice replies. Some small talk follows, yielding an unexpected bonus: the terminal has a video cassette of *Rambo*, a movie the *San II* crew hasn't yet seen.

"Rambo and a load of crude oil," Worman says, laughing. "What more could we ask for?"

The Drift River Terminal is a familiar locale for the *Sansinena II* and her crew of 26. Built by Unocal expressly to handle the company's Cook Inlet production, the ship was christened in May of 1971. By the fall of that year she'd begun a regular run carrying crude from Drift River to the company's Los Angeles and San Francisco refineries. These days, the *San II* supplies only San Francisco, completing a round trip about every two weeks.

Loaded to capacity, the San II can carry 525,000 barrels of crude oil, enough to produce over 22 million gallons of gasoline and other petroleum products. While the largest supertankers would dwarf her (some can hold up to three million barrels), the San II is by no means tiny. The ship is nearly three football fields long, and her four-level "house"—the flat-sided structure at the ship's stern where the crew lives and does much of its work—could double as a good-sized hotel.

Just before 8:30, the blinking lights of Drift River Terminal come into view off the starboard bow. The shoreline, about two miles off, is barely visible through heavy rain. The mountains beyond are completely enveloped in fog.

"Okay, let's bring her down to 30 ahead," Captain Tilghman says, scanning the terminal with binoculars.

"Thirty ahead," Worman repeats, pulling back on the throttle to cut the propeller's speed to 30 revolutions per minute.

"Right 20," the captain intones. Echoing the command, McLeod turns the wheel, shifting the San II's rudder 20 degrees to starboard. The ship begins a gentle arc to the right, swinging around to approach the dock from the south, against the current. With the tide ebbing quickly this morning in Cook Inlet, the current is stiff, making for a tricky entry. A 20-knot wind doesn't help matters any. But Tilghman, at 68 a veteran of nearly 50 years at sea, knows the bay intimately. Over the years, he's experienced conditions here that make this morning

"Come up sometime in February when we've got minus 40 degrees, gale force winds and ice chunks 10 feet thick floating around the Inlet," Tilghman says.

seem tame.

As we draw closer to the dock, the captain goes outside for a clearer view. Down on the main deck, several rain slicker-clad crewmen are preparing mooring lines for arrival. Ever so slowly, the *Sansinena II* inches up alongside the terminal.

"Docking a ship as big as this one is like dancing with a porcupine;" Tilghman confides. "You've got to be real gentle or you might get in trouble." Just after 9:00, the first line is thrown. Within a half hour, the ship is held fast to the dock by 14 separate mooring lines. It's time to begin loading crude oil.

Now the focus of operations shifts to the *Sansinena's* cargo control room, located four levels below the bridge on the ship's main deck. A bank of electronic gauges takes up most of this small compartment. Installed in 1977, the system uses microwaves to measure levels in each of the *San II's* 18 tanks as they are loaded. The digital readouts are accurate down to 1/100th of a foot.

"We used to have to measure each tank from out on deck using tape gauges;" explains Worman, who will oversee the loading operation for the rest of his four-hour watch. "Now we can monitor everything from this console."

By 11:20 a.m., the deck crew has secured two loading arms from the platform to the ship's intake valves. Worman makes a final check with the terminal supervisor via radio, and then the flow of crude begins. Pumped through a pipeline from storage tanks onshore, the oil is directed into the San II's tanks by three main shipboard cargo piping systems. Running down the length of the ship in six rows of three, the tanks average 57 feet deep and vary in capacity from just over 28,000 barrels to 48,000. (Three of the tanks are used for ballast only.)

At the rate of around 40,000 barrels per hour, the loading operation will last about 10 hours. Taking directions from Worman over walkie-talkies, two crewmen on deck open and close valves, directing the flow of oil into different tanks as loading progresses. "The flow has to be staggered to keep the vessel in trim and avoid overstressing it," Worman says.

The delivery system is completely sealed to guard against any possible leaks. Another safety element is an inert gas system, which keeps each tank's void space filled with flue gas drawn off the ship's boiler stacks. "The gas contains under five percent oxygen, so we never have an explosive atmosphere in the tanks," Worman explains.

At 9:12 p.m., loading is complete. Now laden with 388,405 barrels of Alaskan crude, the *Sansinena II* sits a good 25 feet lower in the water than it did empty. (Because of reduced refinery crude requirements, and the fact that the shipping channel through San Francisco Bay is too shallow for the *San II* to negotiate fully loaded, she is delivering about 130,000 barrels less than her capacity on this run.)

Once an oil tanker's precious cargo is secured, there's no time wasted. At precisely 10 p.m., third mate John Harkey, stationed at the bow, radios Captain Tilghman on the bridge that all lines are aboard. "All right," the captain says, "let's take her to San Francisco."





Above, Sansinena II steams across Cook Inlet, a familiar locale for the 15-year-old crude carrier. Left, chief mate Jack Worman monitors loading in the ship's cargo control room. Electronic gauges measure tank levels down to the hundredth of a foot.





Clockwise from right: The deck crew maneuvers one of two loading arms into place at Drift River Terminal; aerial view of the San II docked at the terminal; three shipboard piping systems direct the flow of crude; second engineer Henry Keith at the engine room's main console.





Just after 2 a.m., the Sansinena II swings by the southern tip of Kenai Peninsula, passing out of Cook Inlet and into the Gulf of Alaska. By 8:00, a streak of dim white light lines the eastern horizon.

Winter storm season in the Gulf extends roughly from mid-October to mid-April, and these days the weather pattern has begun to shift. Cold rain continues to drizzle down this morning, and a steady wind blows from the southwest. Heading southeast at 14 knots, the *San II* rolls through six-foot swells of frothy gray.

"This is really pretty smooth for the Gulf;" says Captain Tilghman, perched on a corner chair up on the bridge. "It can get rougher than a cob in the winter, and all we can do is try to dodge the severe storms. There's no sense sticking your foot in a bear trap just to see if it's

got springs."

Whether at sea or in port, each day aboard the San II is divided into six watches of four hours each. Most crew members stand two watches a day, except for the captain who is always on call. A ship's master is ultimately responsible for everything involved in the operation of his vessel-navigation, cargo, maintenance, safety, and myriad other details. It's a weighty job, but one that Captain Tilghman-who has served on Unocal tankers since 1959thoroughly enjoys. Affectionately known as the "old man" among the San II crew (as are most captains, regardless of their age), Tilghman, a native Texan, seems totally at home in his environment—serious and professional, yet relaxed and amiable.

"I really wouldn't be happy doing anything else;" says Tilghman, who first went to sea back in 1936. "It's just the lure of the sea, I guess. It gets in your blood."

Looking over a nautical map in the bridge's chart room, Tilghman points out the San II's position for a visitor. Published by the National Oceanographic and Atmospheric Administration (NOAA), the detailed nautical charts are every ship's bible. Updated annually, they give information about landmarks, aids to navigation, water depths, obstructions, and other important data. The charts are also used to pinpoint a ship's location and track its course. Coordinates printed on the charts correspond to signals picked by the ship's Loran (long range radio navigation) system.

"We record our position on the chart every hour," Tilghman explains, "then we'll adjust our heading as necessary. Accuracy is very important. Being just one degree off course over 60 miles would put us a full mile off

our intended position?"

Because the San Francisco Refinery has no urgent need for the San II's crude, the decision has been made at Unocal's West Coast Shipping (WCS) office in Los Angeles (see sidebar) to make this trip at the "fuel conserving speed" of 13 knots (the ship's top speed is 16 knots, or about 19 miles per hour.) This will add a day to the voyage (from five to six), but the slower pace will save roughly 100 barrels of fuel per day. With bunker fuel oil costing \$25 a barrel, the savings are substantial.

At the forward end of the bridge, Worman is peering into one of the radar screens, which can display an area from two miles up to 64 miles in radius. Now set at 24 miles, the screen shows nothing but open sea. Although a helmsman stands by, the wheel is left alone. Once at sea, the ship is steered by gyroscopic auto pilot, which automatically holds to a prescribed course. The compass shows the ship is moving southeast at a heading of 137 degrees.

"If we don't have to alter course or avoid an approaching ship, sometimes we won't touch the wheel for hours,"

Worman says.

By mid-afternoon the drizzle has become a steady hard rain, and the ship's methodic rolling has intensified. None of the crew seems to mind, however. Those off watch are either relaxing in their private rooms or viewing a movie in one of two crew lounges. One hardy soul, second mate Barry Costanzi, peddles away on an exercise bike.

One deck down from the bridge, radio officer Jim Gordon is listening to a U.S. Coast Guard weather report. An eight-year veteran on the Sansinena II, Gordon (known as "Sparks") spends eight hours a day at the ship's radio console. Every other day at sea he'll send a message to the WCS office giving the San II's position and estimated arrival time. He also sends position reports to the Coast Guard and monitors weather and traffic reports—all via Morse code. (The ship also has a VHF system for voice contact with other ships, and a radio telephone for ship-to-shore voice communication.)

The San II's radio is normally kept tuned to 500 kilocycles, the international frequency for distress reports. When Gordon is off duty, an "auto alarm" system triggers a bell if any distress calls are received.

"I've been woken up by the alarm several times, but we've never been directly involved in a rescue operation;" Gordon says. "It's reassuring to know that most ships have an auto alarm system. Out at sea we've really got to rely on each other if trouble strikes."

Back up on the bridge, third mate John Harkey is the officer on duty. A veteran of more than three decades at sea, Harkey has served on both tankers and freighters. He prefers tankers because of their regular schedule. "On freighters you never really know where you'll be, when, or for how long," he says. "I'm getting too old for that."

Before long the dreary weather inspires a few tales of memorable Gulf of Alaska storms. Captain Tilghman, who has joined Harkey on the bridge, recalls an especially harrowing trip he made years ago on another vessel.

"The ship was rolling 35 degrees, and 60-foot waves were slamming over us," he remembers. "Furniture and people were flying around. It was hairy, I'll tell you. That was the only time in 50 years at sea when I really wondered if we'd make it. It sure taught me to respect mother nature."

"I can tell you one general rule I've learned," Harkey says. "The bigger the seas get, the smaller your ship gets." Morning finds us skirting the back edge of the storm front. The sea is gray and choppy, and the ship continues to roll through swells, rocking like a huge cradle. Seated at a cluttered desk in his shipboard office, chief engineer Nim Golightly finishes reviewing the previous day's work log. "I never really mind the ship's rolling," he says. "But when we're in the real heavy stuff, I always marvel at how these huge steel tubs hold together."

As chief engineer, Golightly's main responsibility is to oversee activity in the engine room—the ship's 20,000-horsepower energy plant. "The engine department's basic task is to keep the ship running as efficiently as possible," he says. "What it really boils down to is people and machinery. You've got the ship, and a bunch of guys running around with wrenches."

At 34, the boyish Golightly is young for a chief engineer. A graduate of Kings Point, the U.S. Merchant Marine Academy located on New York's Long Island, he's a relative newcomer to the Sansinena II. But Golightly's nine-man staff—some of whom have been at sea since before he was born—respect both his knowledge and his management style. "Nim really knows his stuff," says one assistant. "And he gets sweaty and grimy right along with the rest of us."

Much of the work performed by the engine crew is routine—plugging steam leaks, replacing parts, and repairing machinery. "There is constant maintenance on a ship because of the vibration, wear, and high temperatures," Golightly says. To emphasize this he flips through his log, which shows 288 separate items worked on over the past two months. A nearby shelf overflows with thick volumes of specifications covering every nut and bolt of the ship.

"I spend a lot of time delving into my library," he says, smiling. "You've got to continually educate yourself. If you don't, you'll wind up dead in the water."

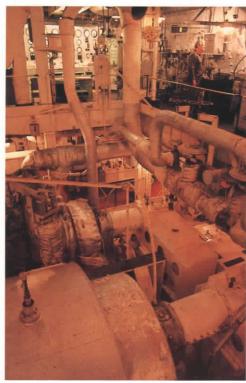
Located beneath the house in the "guts" of the San II, the engine room is a cavernous place—a multi-level maze of stairs, catwalks and ladders weaving through the huge, roaring machinery. It's hot, loud and steamy down here, but the scale of things is what strikes you most. A pair of three-story-tall boilers function like gigantic kettles, turning water into 900-degree steam at 600 pounds of pressure. The steam powers a huge turbine, which in turn drives the vessel's mammoth propeller shaft. A smaller turbine is used to generate electricity, which powers (among other things) the ship's lights, pumps, refrigeration and air conditioning systems.

"We also have our own sewage plant," Golightly points out, shouting over the roar of the turbines. "And we've got two evaporators that make fresh water from sea water—40 to 50 tons of it a day."

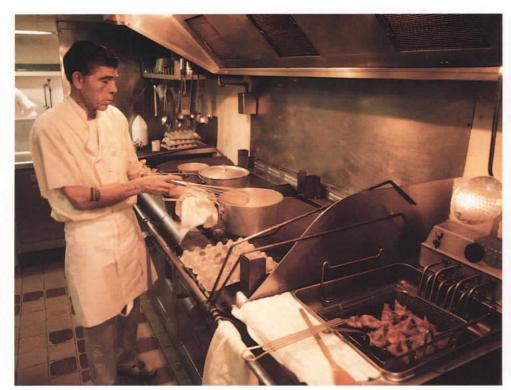
Adjacent to the main engine room is a large machine shop outfitted with a lathe, welding gear, drills and countless other tools. Another room nearby is filled with boxes of spare parts. "Our strong suit here is making do with what we've got," Golightly says. "We're a closed community at sea, and often that means we have to improvise. If you're a gearhead like me, it's a constant challenge and a lot of fun. There's always some new problem to solve."

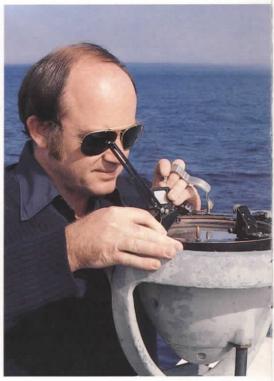
Top: A.B. Ian McLeod (left) and Jack Worman stand watch on the bridge, nerve center of the San II. Below left, a view of the engine room, where Henry Keith peers into one of the ship's two huge boilers (right).













Clockwise from upper left: A steward at work in the always-busy galley; Jack Worman takes a compass reading outside the bridge; radio officer Jim Gordon updates his log; crewmen check out a lifeboat during an abandon ship drill.



Tuesday, October 1 North Pacific

At 10 a.m., the *San II* is roughly 350 miles off the coast of northern Washington. Still heading southeast, we've now passed below 50 degrees (north) latitude—far enough south that the foul weather has eased.

The smooth sailing comes as a welcome relief in the galley, where Juan Gonzalez, head of the San II's steward department, is busy preparing lunch with two assistants. Cooking three hefty meals a day for 26 hungry crewmen is work enough without having to deal with sliding skillets and tumbling tomatoes.

Taking time out to conduct a quick tour of his domain, Gonzalez leads the way down a staircase adjacent to the well-equipped galley. On this lower level are three huge walk-in refrigerators and a large dry storage room. But the real eye-opener is the mammoth walk-in freezer, which could easily store enough meat and other provisions for a six-month voyage.

"We take on supplies every two weeks in San Francisco, so it never gets that full," Gonzalez says. "But we're still talking about tons of food. And you not only need enough food, you also need variety. If I ran out of entrees and had to serve nothing but Polish sausage for three days, we'd have a mutiny on board for sure."

By mid-afternoon, visibility is excellent. At 4:15 p.m., another vessel comes into view—a large container ship about six miles to starboard. Standing watch up on the bridge, second mate Barry Costanzi demonstrates how the San II's computerized collision avoidance system works.

Keeping track of nearby traffic is always important—especially when one considers that at full speed, a ship as large as the San II would need over a mile and a half—and more than 10 minutes—to stop. Radar and visual monitoring are the primary means used to watch for other ships. But the collision avoidance system (CAS) is a valuable added safeguard. Used in conjunction with one of the radar screens, it can lock onto a designated target vessel and instantly compute its course, speed, range and bearing, displaying them as digital readouts. The CAS also calculates a target ship's closest point of approach, and tells you when that moment will occur.

The readouts for our neighbor show that we are in no danger of colliding; we'll never get closer than three miles apart. But what if one of us were to change course or speed?

"You can use the CAS to see what would happen," Costanzi says. To demonstrate, he punches in a hypothetical course change for the San II on the CAS console. "Whoops," he says, studying the resulting numbers. "Looks like we just rammed him."

A few minutes later, Costanzi decides to make radio contact with the container ship. His call is answered by a crisp voice speaking with a Scandanavian accent. The ship turns out to be a Norweigian freighter.

"Where are you headed this trip?" Costanzi asks.

"En route to Seattle from Japan," the captain says. "And you?"

"We're headed for San Francisco Bay from Alaska with a load of crude oil," Costanzi replies. He asks the captain how often he gets home to Norway.

"Only once every four months," he answers. "But in winter I don't mind."

Bright sunshine and calm seas usher in our voyage's fifth day. As we draw steadily closer to the coast, gulls, pelicans and other sea birds are in evidence. A school of playful porpoises cavorts off the ship's bow, leaping and darting through the water at breakneck speeds. By noon, the temperature has shot up into the 80s. It seems worlds away from wintry Cook Inlet.

At 2:00, all hands prepare for a fire, safety and lifeboat drill. The drills are held weekly, with a varying agenda. "We usually have an abandon ship drill first," Worman says. "Then we start up the fire pumps, review safety guidelines, and perform mock rescues or medical procedures."

The San II carries two large lifeboats and two 20-person rafts. Each is equipped with water, canned rations, flares, a compass, and other survival gear. Every crewman also has a cold water survival suit in his cabin. The insulated suits are mandatory for any ship operating in Alaskan waters.

"Water temperature up there is just above freezing," Worman explains. "If you went overboard unprotected, you could die within minutes. But the survival suit will keep you completely dry and comfortable for up to 36 hours."

At the sound of a bell alarm, the crew members don life jackets and take their stations for the abandon ship drill. One of the lifeboats is partially lowered, and its diesel engine is test started.

Later the crew assembles on deck for a mock rescue exercise in which a man has "passed out" while inspecting an empty tank. A rescuer is quickly fitted with a breathing apparatus and rope harness in preparation for retrieving the victim. "We've got to respond quickly if an emergency like this occurs," says Worman, who doubles as the San II's medical officer. "Time is always critical."

A certified emergency medical technician, Worman recently completed a month-long course in emergency medical procedures. Part of the instruction involved spending a day in a hospital emergency room.

"They had us jump right in—inserting IVs, suturing wounds, performing CPR," Worman recalls. "You've got to know how to do these things without

being squeamish?'

Hours later, a canopy of stars ignites the evening sky. Standing on the port wing outside the bridge, Captain Tilghman looks out over the dark, gently rolling sea. To the east, the water glistens under a brilliant rising moon.

"Nights like this make all the rough times worthwhile;" he says. "I really wouldn't trade this life for anything. Think of what the L.A. freeways are like about now."

This leads to another thought: if not for the San II and other ships like her, many of those freeway cars and trucks would be stopped dead in their tracks. "Few people think about what's involved in keeping their corner gas stations stocked," Tilghman says. "They just take it for granted. But in a way, that's a tribute to us. It means we're doing our job and doing it well."

In just over 15 hours, the Sansinena II will steam under the Golden Gate Bridge and into San Francisco Bay. Passing by Alcatraz Island and hooking north, she'll proceed toward San Pablo Bay and the Unocal refinery's dock at Oleum. After one day spent discharging cargo and stocking up with supplies, the ship will be Alaska-bound once more: another trip, another load, another chapter in a never-ending job well done.





Clockwise from right: crewmen prepare mooring lines for arrival at the San Francisco Refinery; Captain Steven W. Tilghman; a tugboat helps nudge the San II into the refinery dock. Facing page: The product tanker S.S. Coast Range pulls into Avila wharf, one of several terminals called at by West Coast Shipping vessels.









## WEST COAST SHIPPING: Keeping tankers on the move

West Coast Shipping (WCS), a wholly owned Unocal subsidiary with a total staff of 28, currently operates four ships on the U.S. west coast. In addition to the Sansinena II, the vessels include the Sierra Madre and Coast Range, both product tankers; and the Cornucopia, which ships liquified ammonia from Unocal Chemicals Division's Kenai plant to distribution terminals in California and the Pacific Northwest. (Unocal's Marine Department, a separate entity, operates another company product tanker-the Blue *Ridge*—as well as a tug and three barges exclusively in the east.)

Christened in 1981, WCS's sister ships Coast Range and Sierra Madre are state-of-the-art product carriers which together deliver more than nine million barrels per year of products to west coast markets. (Less frequently, the ships also visit Alaska and Hawaii.) Unlike crude oil tankers such as the Sansinena II, product ships transport a multitude of cargos in segregated tanks. Hopscotching among the company's three west coast refineries and numerous marketing terminals, the ships load and discharge everything from different grades of gasoline to jet fuel and lubricants.

The complex job of planning and coordinating West Coast Shipping operations is handled out of the WCS office, located at the 911 Wilshire building in Los Angeles.

"Unocal has an individual who keeps track of inventories at marketing terminals and production at the refineries;" says C.H. Erikson, vice president and general manager, West Coast Shipping. "He lets us know what's needed at each location, as well as what each wants to move—when, where, and in what amounts.

"We then take those requirements and try to fit them into a schedule that will satisfy the marketing people, the refining people, and the limitations of the vessels."

The operational end of ship management requires a lot of flexibility, Erikson stresses. "We can never set any decisions in concrete;" he says. "Weather, tides, port limitations, refinery problems, mechanical problems on the ships; all of these things can affect us. But the mission always remains the same: make sure that the right amounts of the right cargos are being moved at the right times to the right locations, as economically as possible. And always with a primary concern for a safe, pollution-free operation." T.S. ®

# LOOKING AHEAD



Richard J. Stegemeier

On December 2, 1985, our Chairman and Chief Executive Officer Fred L. Hartley, announced that the board of directors approved the appointment of Richard J. Stegemeier as president and chief operating officer of Unocal Corporation. Under the new structure, Mr. Stegemeier is in charge of coordinating the activities of the operating divisions to meet the company's business objectives.

Since joining the company in 1951 as a research engineer, Mr. Stegemeier has held positions of increasing responsibility in both domestic and international operations. He was president of the Science & Technology Division from 1977 until 1980, when he became senior vice president in charge of corporate development.

The board also approved the appointment of Claude S. Brinegar as executive vice president for administration, and Ray A. Burke as executive vice president for energy resources.

Mr. Brinegar joined the company as an economist in 1953. He served as senior vice president for refining and marketing prior to resigning and spending 1973 and 1974 as Secretary of Transportation. He rejoined the company in 1975 as senior vice president, administration. At the meeting of the board of directors on January 27, 1986, Mr. Brinegar was also appointed chief financial officer, replacing Philip Blamey, who retired on December 31, 1985.

Mr. Burke joined the company in 1951 as a district geologist in the Gulf Region. In 1966, he was named president of the International Oil & Gas Division and a senior vice president of the corporation. In 1972, he became responsible for all of the company's energy resource activities.

In January, *Seventy Six* spoke with Unocal's new president in his office.

# How is Unocal different this January from the company that it was last January?

The fundamental company, which is made up of our employees, our natural resources, our facilities and our technology, hasn't really changed. All of these strengths are still in place.

But one of our great strengths before the takeover attempt last spring was our financial position. We had a very low debt structure, and therefore our interest and debt repayment schedules were nominal. Adequate cash was available for rapid growth and for pioneering attractive new technology such as our Geothermal Division. We could launch into businesses for the future, and we did that rather successfully over the years.

The amount of money that we have now for reinvestment is substantially less. In the near term, we have to handle our long-term debt which increased from \$1.3 billion to \$5.7 billion, while at the same time we will have to continue our basic business at a reduced investment level.

### What will our priorities be in the next few years?

We will continue to operate this natural resource and high technology company in a way that maximizes our cash flow by cutting costs and improving our operating efficiency. With less cash available, we will have to focus our growth on projects with high profitability in the short term. Projects that have high cash requirements in the early years and profits in the long term must be minimized. In other words, we'll have to take a somewhat shorter view than we have in the past.

## How long will it take to reduce the debt to an acceptable level?

We can't define a firm timetable for reduction of debt. I think all we can say is that the debt is larger than we would like. Currently, interest charges are about \$10 million per week, which obviously reduces earnings and thus cash for reinvestment.

We want to reduce the debt charges as soon as possible so that we can then return to our prior growth rate. Whether that is a five-year or an eight-year target, I can't say because it depends on how soon oil and gas prices recover from their present levels.

We will reduce the debt as rapidly as possible, but not to the point where we are obsessed with it. Debt per se is not bad, but a debt that ties our hands to the point where we can't do anything else is bad.

### What kind of debt level are we talking about?

Before we had our difficulties last spring, we were carrying about \$1.3 billion worth of long-term debt. That meant our debtequity ratio was among the lowest of all the major oil companies in the United States. Our goal is not to drop back to that low level, but to some level between that and what it is today—something more comfortable that gives us more flexibility.

### Is it important for us to increase shareholder value?

Yes. Shareholder value is very important to us. It is one of our principal reasons for being here. We were attacked not because we were a weak company, but because we were a very strong company. Our assets had an inherent value substantially greater than the shareholders in the marketplace were willing to put on them at that time.

There were a lot of reasons for that. The oil industry in general was undervalued in the marketplace. But for whatever the reasons, Unocal was undervalued. Some groups decided that it was better to kill the cow than milk it. They weren't satisfied with the operating value of a viable growth company. They wanted its break-up value and they wanted it right now. However, only a small minority of shareholders agreed with this view.



In last spring's proxy contest, 65 percent of the shares represented at the meeting voted in favor of retaining the three Unocal board members who were up for reelection. More importantly, when you look at individual shareholders, the count in the company's favor was even more overwhelming. Out of something like 70,000 individual shareholders, over 60,000 voted for the company and management. Americans, by and large, believe that good companies should be preserved.

Now we have to readjust our sights and convince *all* the shareholders—large and small, new and old—that we're doing the right job. We have to reinforce our credibility, so the marketplace will drive up the price of our stock. That's one of our most important jobs right now in management.

## What's the outlook for the industry in the next few years?

It's anybody's guess. Prices hinge on several variables, including the actions of OPEC and non-OPEC countries that contribute to the crude oil supplies of the world. What are they going to do? We don't know, for example, what's going to happen in the Iraq-Iran situation. Is that war and the disruption of those supplies likely to continue, or will they settle their difficulties? Will the non-OPEC countries voluntarily reduce their production of crude oil and, if so, will that be a stabilizing influence on crude oil prices? Nobody can really say what's going to happen.

Looking slightly beyond the near term, crude oil and natural gas are diminishing commodities. In the longer term, these commodities will be in shorter supply. The worldwide demand for energy will increase with economic growth and the growth of the world's population.

Energy prices inevitably must rise. So we have to position ourselves to be ready to produce our natural resources at prices that respond to the crude oil supply on a worldwide basis. And we're in a very good position to do that.

# After your first eight weeks as president, are you viewing the company any differently?

My new responsibility requires a broader vision of the company than I might have had before as head of an operating unit. But I've always taken a rather broad view in any case, because one of my responsibilities for the last several years has been strategic planning. I welcome the challenges and opportunities that are ahead of us.



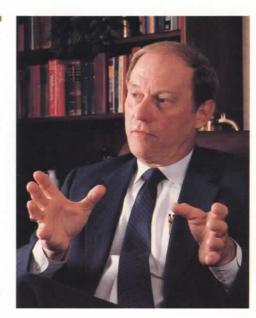
#### Where will we be five years from now?

By the time our company reaches a hundred years of existence in 1990, I think we will look back over the whole hundred years, including the next five, with a great deal of satisfaction. We're a fine company and we'll be able to say that we accomplished our goals in meeting the changing business challenges of each decade.

I think the five years ahead of us are going to be the most exciting and challenging that our 20,000-plus employees have ever had. At times, it may seem like less fun than it was in the past five years, because we're going to be working under tighter constraints. We're going to have to continue to work hard, and invest wisely with less money than we have had in the past. If we do these things along with innovation and creativity, we will certainly increase our profitability.

When bad things happen to good people, as we saw this last year, they become better people. We have all had some tough times, but happily, tough times don't last very long.

The events of last year prove what a great team we are—perhaps better than we were before. If we clearly identify our goals at all levels of our operations and then set out ways and means to achieve them, I know we'll be an even better team and once again a strong company. ®



# THE FUTURE LIES IN THE CARDS

Jerry O'Leary wants to get rid of paper. Not totally, mind you. But as general manager of the Unocal Credit Card Center in San Francisco, he knows that handling paper slows office operations and increases costs.

So last November, the center implemented a new customer billing system to speed up office functions, reduce operating costs—and, of course, reduce paper handling. The new procedure is known as descriptive billing. O'Leary says it will be a key element in helping the center adapt to changes occurring at service stations and truckstops across the country.

Under the previous billing system, it was virtually impossible to reduce the amount of paper handled. The center returned several invoice copies and a statement to 100,000 customers every day, which meant about 600,000 pieces of paper had to be sorted, inserted into envelopes and mailed.

With descriptive billing, however, invoices are not returned. The cardholder receives a list of transactions—and these usually fit on a one-page statement. With more than two million customers receiving statements each month, that means a lot less paper for center staff to handle.

Under the old system, each invoice had to pass through an optical reader/sorter nine times—one "pass" for each digit of the account number. (The reader optically scans imprinted account numbers.) With descriptive billing, the information is passed only one time to enter pertinent data into the center's computers, where it is sorted electronically.

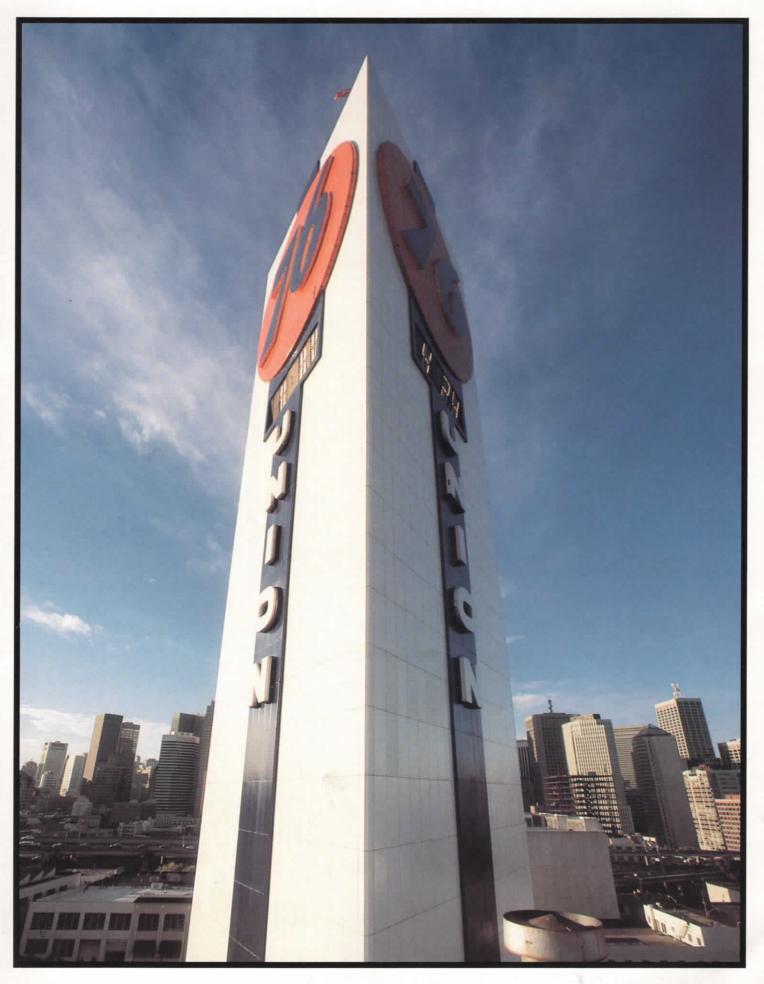
"As a result, our statements are ready to go out one day after closing the billing cycle, instead of three,"
O'Leary says. "In effect, we're getting about \$12 million worth of statements out two days earlier with the new system.

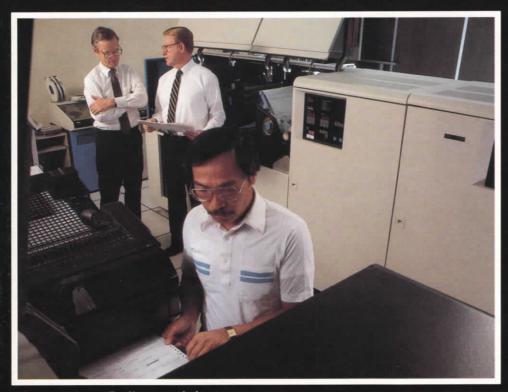
"Ideally, it works something like a pipeline operation, where finished product that leaves the refinery is constantly replaced by crude oil coming in," he continues. "The faster we send out our statements, the sooner customers can pay us."

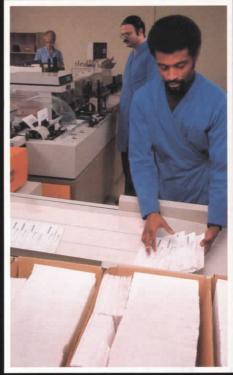
Not only do statements take less time to go out, they also cost less to send. Postage is one of the center's biggest cost factors. When customers used to receive several invoices with each statement, the envelopes were heavier and some were more expensive to mail. But without invoices, the envelopes weigh less.

"That alone will save the credit center about \$200,000 a year in postal costs," O'Leary notes.

The 200-foot tower of the Unocal Credit Card Center building is a unique part of the San Francisco skyline. Last year, the building was named an official city landmark.







Changing times: Credit center clerks during the 1940s performed many office tasks by hand (right). Today, state-of-the-art equipment processes much of the data. General manager Jerry O'Leary (above, right) and Bruce Evans, manager of systems and data processing, discuss the new laser printer. Paul Cabang operates one of the two lasers, which prints close to 5,000 statements every 20 minutes. Far right, Bryan Victoria gathers statements prepared by the center's new mailing equipment, which operates at nearly twice the speed of previous machines.



Despite the many immediate advantages of descriptive billing, O'Leary feels its most important function is to prepare the center for future improvements in the billing system. One such improvement may be what is known as electronic point-of-sale data capture. Now evolving in some parts of the petroleum industry, data capture technology will enable service stations and credit operations to communicate faster and more efficiently. Electronic terminals at the sale location will transmit customer billing information directly to credit center computers. Dealers will no longer have to mail invoices to the center, since the information can be sent electronically in a matter of seconds. And saving time, of course, can save money.

"Much of the \$200 million in invoices we get from dealers every month is tied up in the mail for several days," O'Leary says. "When we're able to transmit this data electronically, we'll have a faster cash flow. It will bring credit operations one step closer to our ultimate goal: less paperwork for the center and dealers, and more efficient customer service at a lower cost.

"Now that we have descriptive billing," he adds, "we can start working to adapt input to fit data capture technology. Descriptive billing isn't the end in itself—it's merely a step in the chain. This is just the beginning."

Changes which led to descriptive billing first appeared in 1983. The card's scenic background was replaced by a solid neutral color to make the embossed characters more visible.

"We wanted to make sure the dealer and customer could easily read the information embossed on the card, especially under poor lighting conditions," observes Earl Davis, the center's manager of general services. "It's important that customers and station attendants be able to see that the card being returned is the right one."

An individual "card number" was also added to each card. This number identifies the specific card used for a purchase and is quite helpful to families or businesses that have more than one credit card per account. Charges are listed on the statement by card number.

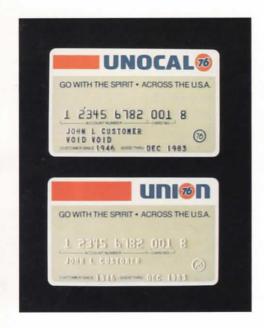
Finally, a magnetic tape strip was added to the back of the card. The cardholder's name, account number and expiration date are recorded on this strip. Dealers can insert the card into an electronic terminal, and the information is transmitted directly to the center where it is processed to determine the customer's credit status. Although use of these terminals is currently limited to credit authorizations, they will serve as a base for moving into data capture.

Last November, the credit cards underwent their most recent change. Like all other center forms and stationery, the cards reflect the company's new logo. They now read "Unocal 76" instead of "Union 76." (It will take some time before all cardholders have the new cards, which are being distributed with new and renewal accounts.)

Although there have been many changes to credit card operations over the years, the recent change in billing format is the first to affect what customers receive. "We recognized that some cardholders may be temporarily inconvenienced while adapting to the new billing system," explains O'Leary. "With this in mind, we've tried to make the transition as smooth as possible for them."

Before descriptive billing took effect, all active cardholders received a brochure which explained how their new statement would work. Despite the notice, some customers were still caught off guard and needed more time to adjust to the new system. To handle cardholders' concerns, O'Leary assigned a select group of senior customer service representatives to answer phone calls during the first two months of descriptive billing.

"The center usually handles about 2,000 customer calls each day, but after the new system began, the number of inquiries increased," O'Leary recalls. "Customers asked questions about their statements, descriptive billing and why we changed to it."



Making the switch to a new system isn't easy, and the descriptive billing changeover was no exception. How did it compare to major moves of the past? "Well, this was the biggest technological change ever," observes O'Leary. "The challenge was to make a change that involved new forms, processing equipment and most of our staff without interrupting operations—even for a day."

Past experience was a big reason for the changeover's success. "Many key staff members went through the consolidation of the former Pure Oil and 76 credit card operations together," notes O'Leary. "We also worked on the transition to optical reading. These were major projects and we learned a lot from them."

Several staff members, including O'Leary, are veterans of the changeovers from manual to mechanical to electronic processing. They can remember when all credit invoices had to be sorted—and added—by hand. Compare those methods to today's audio response system, a 24-hour telephonic device which employs a computerized voice to handle dealer calls for routine credit checks. It makes you wonder what type of technological wizardry will one day antiquate today's modern equipment.

In the midst of changing times, however, some things stay the same. The credit center, with its 200-foot clock tower and large 76 logo, has long been a distinctive part of the San Francisco skyline. In fact, it was declared an official city landmark last year.

The building was constructed in the late 1940s as regional headquarters for 76 marketing operations. In 1952, West Coast credit card operations were consolidated in San Francisco. O'Leary was named general manager in 1969 to head the consolidation of Western and Eastern Region credit card operations.

O'Leary's main goals haven't changed much since then. He and his staff still want to keep Unocal at a competitive advantage in the marketplace with a credit card operation responsive to dealer and customer needs.

"We'll continue to approach electronic data capture slowly and evaluate getting into it on a sound economic basis;" he says. "We plan to do testing of electronic data capture later this year to determine what the gains will be to dealers, customers and Unocal.

"The recently installed descriptive billing system is just one aspect of a whole evolution in retail marketing. We didn't eliminate mailing invoice copies to customers just to save a couple of hours at the credit center. It's bigger, much bigger, than that." A.B. ®



Manager of general services Earl Davis (left) watches as new Unocal 76 cards are embossed. Between 30,000 and 35,000 cards are embossed daily. Linda Galleon, foreground, and Nancy Ramos help organize cards for customer delivery. Below, 18 senior customer service representatives handled thousands of customer phone calls during the first two months of descriptive billing.





Bill Lucchesi (left), manager of computer operations at the credit center, talks with Bill Jurewicz, supervisor of computer operations. Lucchesi helped provide corporate support to a neighboring county's education system.

# CENTER'S DONATION HELPS ALAMEDA SCHOOLS

When machinery at the credit card center becomes outdated, it is either sold to other businesses or traded in for a newer version. But last year, over \$100,000 in surplus computer equipment served a different purpose—it was donated to the Alameda County Office of Education.

The county office, located about 30 miles east of the credit center, is recovering from funding cutbacks. As regional coordinator between Alameda's 22 school districts and the State Department of Education, the office is responsible for maintaining payroll, accounts payable and other financial data. Its ability to process this information, however, has been hampered by diminished funds. Today, the Alameda office has fewer employees to handle paperwork and less money for equipment repair and purchase.

Bill Lucchesi, manager of computer operations at the credit center, became aware of the county office's financial plight in late 1984. At that time, the center was seeking bids on the surplus computer equipment, which consisted of six disk and four tape drives used for data storage. Alameda officials needed the equipment but could not offer a competitive bid.

Although the credit center does not usually donate used equipment, Lucchesi recommended that an exception be made. "The company felt that assisting the Alameda office was in the community's best interest," he explains.

Carol Smith, Alameda office administrative assistant, agrees. "We serve school districts in Berkeley, Oakland, Fremont—on down to the San Joaquin Valley border. This donation will have widespread benefits."

Once installed in the office's data processing department, the tape and disk drives will improve operations. Data will be recorded and stored on the magnetic tapes at the end of each day. By using the disk drives with the computer, information can be stored more conveniently.

"Each of the disk drives can hold up to 200 megabytes of information," explains Gary Rose, Alameda's director of data processing. "Translated, that means that a whole year's worth of accounting data will be available on one disk. Before, the disk would have to be erased to make room for next month's figures." Keeping vital information on disk instead of tape drives will also allow school districts direct access to their records via computer. That wasn't possible before, since data recorded on the disk was transferred to magnetic tape drives and filed away in storage.

"When a school official wanted information about the previous month's records, we'd have to go through the files. That would take at least a day," says Rose.

Last year's donation to the Alameda office wasn't the first made by Unocal's credit center. In 1984, the center provided the office with a surplus computer console keyboard for its data processing operations. The console is vital, controlling the entire computer system.

"When our own console gave us trouble before, the system would shut down. We'd lose half a day trying to fix it," explains Rose. "Now we use the Unocal console as a back-up, so when ours is in 'down time,' the system can still function."

The credit center's involvement with Alameda has prompted other local businesses to help with donations of their own. Smith cites a growing recognition of the importance of education to the business community. "There are lots of benefits in linking business with education," she says. A.B.

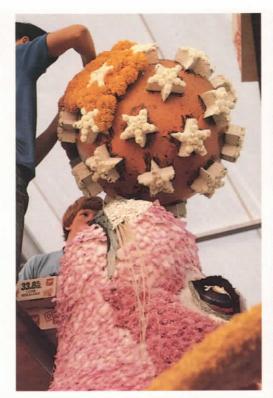
# CELEBRATING LAUGHTER

Reminiscent of good old-fashioned circus fun, Unocal's float in the 97th Tournament of Roses presented a colorful tribute to the parade's "Celebration of Laughter" theme. The company's 44th entry in the event, "Keep 'Em Laughing" showcased the ball-spinning antics of trained seals.

On a balmy New Year's Day morning, one million people attended the famous Pasadena procession that stretched five and one-half miles. Popular humorist and author Erma Bombeck presided as grand marshal.

Riding as "ringmaster" at the front of Unocal's float was the man who designed it, Raul Rodriguez—but bringing his concept to life was not all fun and games. Between 250 and 300 volunteers from Bethany Baptist West Covina Church devoted 10,000 manhours to decorate the float with a surprising variety of vegetable seeds, dried and cut flowers. Up to three teams each worked eight-hour shifts to place hundreds of gladiolus and carnation petals, chrysanthemums, marigolds, orchids and roses in just the right places.

The finished product measured 62 feet long, more than two stories high—and was covered by nearly 26,000 flowers. The float was built by Fiesta Floats. ®













# PARTNERS IN TECHNOLOGY

When Unocal Thailand (UT) began development of its natural gas project in 1978, the company committed itself to hiring and training Thai nationals to staff the new offshore facilities.

Over the course of the Gulf of Thailand gas project, this "technology transfer" has been a resounding success. Today, more than 80 percent of UT's 720 employees are Thai nationals. Ranging from mechanics and electricians to production operators and instrumentation specialists, these employees are pioneers in what has fast become a major industry in Thailand—an industry that now supplies nearly 30 percent of the nation's total commercial energy requirements.

How was this skilled workforce assembled and trained so quickly—especially in a highly technical, specialized field that was brand new to Thailand?

"The success we've achieved has come through hard work, a dedicated staff, and strong support from UT management," says Wayne Bougas, director of UT's Technical Training Center. "We've also been blessed with a very talented and eager pool of trainees drawn from throughout Thailand."

Now in its seventh year, the training program is run by UT's Human Resources Development Department (HRD), which was established in 1979 with the mission of producing a comprehensive manpower development and training program. "Our basic task is to recruit and train technically oriented Thais to fill as many jobs as possible in UT's offshore production department," says former HRD director Al Sigmund, who recently retired. "This not only fulfills our commitment for transfer of technology, it also benefits the company by reducing the expense of maintaining a large expatriate workforce?"

After its inception, HRD's training project took shape very quickly. A training center was built in Songkhla, the staging area (located in southern Thailand) for UT's Gulf of Thailand offshore operations. The facility consists of four classrooms, three workshops, living quarters and a fire and safety training area. During construction, Sigmund and his HRD staff developed a curriculum, hired a professional training staff, and began recruiting the first group of trainees.

All of this was accomplished by June of 1980. Just one year later, the Unocal Technical Training Center held its first graduation ceremony. Sixty-six students were awarded training completion certificates in offshore production operations, and were assigned to report for work on the Erawan central processing platform in the Gulf of Thailand.

"As of January 1986, 314 trainees had completed the program and been placed with work assignments," Bougas says. "As a result, we've been able to staff our production platforms with a steadily increasing number of Thai technicians."

The students UT recruits each year for the training program already sport impressive technical backgrounds. Each trainee must have graduated from one of Thailand's five-year technical schools. "All our recruits have completed a minimum of 13 years of schooling, the last five of which are in a technical institution," Bougas explains. "During the final two years, they specialize in a single trade or technical area, such as mechanics or electronics. This helps us quite a bit in our selection process."

"My job offshore has a lot of responsibility, and everything I learned at the training center has helped me. In addition to the technical area, we learned to work together and to think of safety first."

—Teerayuth Mudvhun:
Production Operator, Platong field



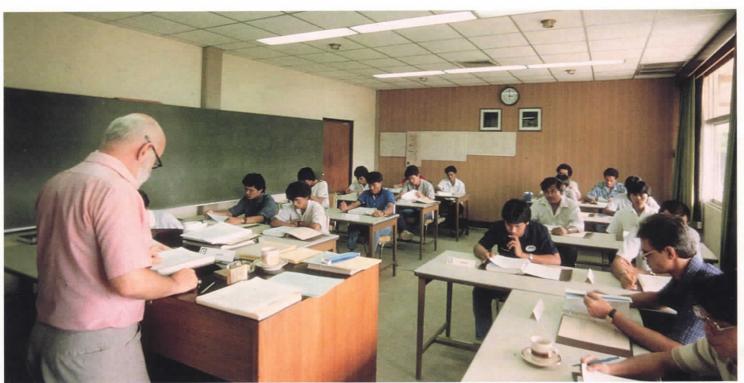
Graduates of Unocal Thailand's Technical Training Center (left) staff offshore facilities such as this one (below), located in the Satun gas field, Gulf of Thailand.





"At the training center, we are taught to be good workers. This means having good knowledge, the right skills, and the ability to solve problems at work. Most important of all, it means having a good attitude toward our work."

—Chalong Keaomanee: Current Trainee





Instruction at the Training Center is a combination of classroom and on-the-job training. Trainees are rotated offshore regularly for work experience assignments.



"I feel very fortunate to be attending the Unocal training center. I hope I can use the experience I've gained to help our country progress?"

-Sompong Pan-Amanchai:

Current Trainee

Each spring, UT solicits applications from graduating students at the major technical institutes. About 1,000 students are given tests in general technical knowledge and English language proficiency (all training at the center is in English). Half of those tested are interviewed, and from this group 40 to 60 are ultimately selected for the program each year. The chosen students become UT employees, and their training (in the classroom and offshore) lasts 18 months.

"Since UT's natural gas project is national in scope, we recruit our trainees country-wide," Bougas says. "Selection is always difficult because we have so many qualified people to choose from. This is a new and growing field of work in Thailand, and a job with Unocal is regarded as an excellent career opportunity."

Training begins with a general introduction to the origin, accumulation and production of natural gas and oil. The students also learn about UT's offshore fields and the basic equipment and processes used on the platforms. This introductory training includes six months of intensive English instruction to ensure that students can read operating manuals and are familiar with the necessary technical terms.

"The objective at this stage is to give all trainees an awareness of the full scope of operations and conditions on our platforms," Sigmund says. "Particular emphasis is given to safety systems, the importance of warning devices and the effects of shutdown systems."

More specialized training comes next, combining classroom learning with workshop exercises. Instruction is focused on the operation and maintenance of specific systems and equipment used on the company's platforms in the Gulf of Thailand. In the final phase of the program, trainees advance into one of three technical specialties (mechanics, electronics or instrumentation), or they may be trained as production operators. Every trainee must also complete an intensive two-and-one-half day fire-fighting, safety and first-aid class which is reviewed annually.

Over the course of their instruction, trainees are rotated offshore regularly for two-week, hands-on work experience assignments. "We want to make the training as close to a true job situation as possible," Bougas says. "We also want our employees to learn to work together—to use a team approach in identifying and solving problems." To that end, the training program also touches on crosscultural relations and the concept of team building.

The training center currently has 10 full-time instructors on staff. Half of these are Thai nationals themselves. "Most of our instructors design and write material for the center as well as teach," Bougas says. "That's extremely valuable for us. An offshore mechanic may not know how to teach, for example, but he can give us his technical input. Then our instructors can design a course around it."

After they complete training, employees are closely supervised by experienced platform personnel during their first six months of offshore work.

Upon completion of this on-the-job training period, each employee's record and performance are reviewed. If they are deemed satisfactory, the employee is classified as a regular Junior Operator or Craftsman.

"We've had excellent results and an extremely low attrition rate thus far," Bougas says. "Over 98 percent each year have been successful."

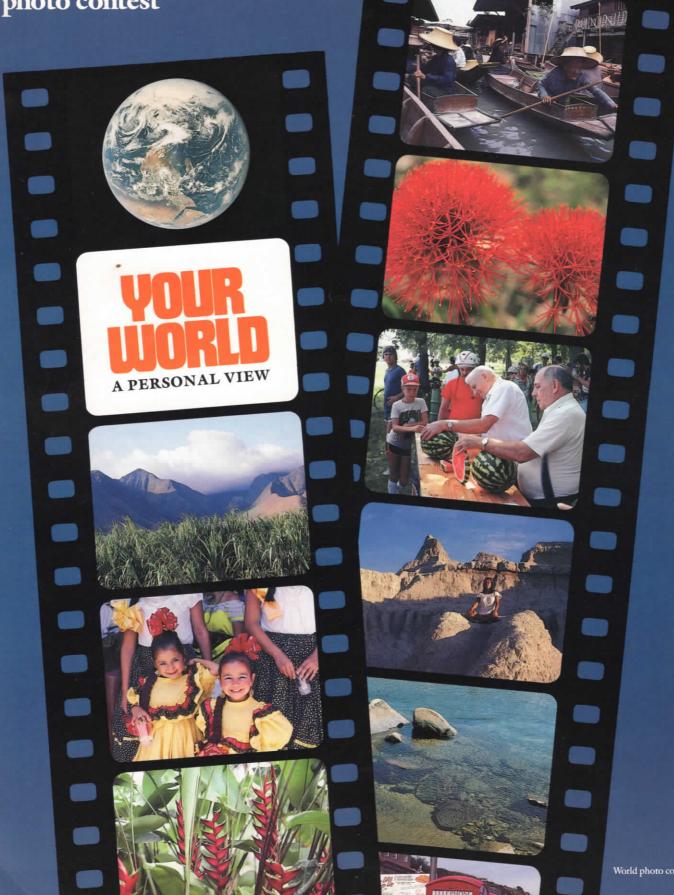
As these new production operators, mechanics, electricians and technicians gain experience, they will gradually move up to replace expats in more advanced technical and supervisory positions.

Many have already done so.

"We're always working to improve and refine the training program, and that's one reason why it's worked so well," Bougas says. "Another is simply that Unocal decided early on to expend the money and effort required to establish a quality training program for Thai nationals. That decision has paid off not only for the company, but also for the Thai workers we've hired and for the nation as a whole."

Former human resources development director Al Sigmund agrees. "This new industry provides almost unlimited career opportunities for intelligent and forward-looking young Thais," he says. "As the first on the scene, they are leaders in the field of oil and gas production in Thailand. The nation will look to them for significant contributions to the health and strength of the economy, and they can look forward to a secure and rewarding future doing an important job." ®

Sixth annual Seventy Six magazine photo contest



World photo courtesy of NASA.

Show us your world—that's the challenge presented by this year's photo contest. Use your photographer's eye to give us your personal interpretation of the people, places, scenes or moods around you. Three professional judges will select the entries which best create vivid statements about you—the photographer—and your surroundings.

Awards: The first-place winner will receive a grand prize of \$200. Six merit awards of \$76 each will also be given. All seven winners will be published in Seventy Six magazine and will receive Seventy Six T-shirts. At their option, the judges may designate photos for Honorable Mention. While these pictures may or may not be published, the photographers will receive T-shirts.

Eligibility: Employees and retirees of Unocal Corporation, its subsidiaries and divisions are eligible. Their spouses and children may also enter.

**Entries:** Color only. No more than three entries per person. We prefer 35 mm. slides. If you enter prints, they should be 5-by-7 inches or larger and *un*mounted.

Liability: All entries are to be submitted with the understanding that neither Unocal Corporation nor any of its employees will be liable for loss or damage. Entries may be held beyond the publication date of the contest, but we will attempt to return all of them in a timely fashion.

Mailing: Please package your entries carefully, making sure they are identified individually so they can be returned to you. Enclose a signed entry form (or photocopy) with each photo.

**Right to publish:** Unocal Corporation retains the right to publish or republish any photograph submitted in the contest. Entrants waive any claims for royalty payments or copyright infringement.

Model release: Entrants must be able to furnish a written "consent to use" statement upon request for recognizable people who appear in the photographs.

**Judging:** Three professional photographers from outside the company will judge the contest. Their decisions will be final.

**Deadline extended!** Because this issue was mailed later than usual, the contest deadline is extended to April 18, 1986.

Entry Form (please print)		Important!
Name of employee/retiree:	/ /	I have read and agree to the contest rules.
Job title:		Signature:
Division/Subsidiary:		
Work location:		Date:
Telephone:	Network:	If under 18, signature of parent or guardian:
Name of entrant (if different):		
Relationship to employee/retiree:		
Home address:		Send to:
City:	State: Zip:	Seventy Six Magazine Photo Contest
Daytime telephone:		Unocal Corporation P.O. Box 7600, Room M-17
Description of photo:		Los Angeles, CA 90051
	=	

# UNOCALTO

#### CORPORATE

#### January 1986

35 YEARS	Ray A. Burke, Unocal Center
	Billie R. Dean, Unocal Center

#### 30 YEARS Manuel A. Gordin, Unocal Center Clarence E. Rode, Unocal Center

#### 15 YEARS Michael A. Deruyter, San Francisco, Ca. Michael Roybal, Unocal Center Wallace T. Skok, Unocal Center

#### 10 YEARS Byron S. Flynt, Unocal Center

5 YEARS	Millie Albertson, Unocal Center
	Cristeta L. Cruz, Unocal Center
	Carolyn L. Gray, Unocal Center
	Barbara J. Haugh, Washington, D.C.
	Allan A. Hirata, Unocal Center
	Frank J. Houser, Schaumburg, Il.
	Norma R. Kobayashi, Unocal Center
	Picardo P Wanka San Emprison Ca

#### February 1986

30 YEARS	David V.	Rozas.	Unocal	Center

25 YEARS	Darlene P. Kolle, Unocal Center	
	Thomas P Wright Schaumburg I	T

# 5 YEARS Patricia A. Berglund, Schaumburg, Il. Elizabeth Ellison, Unocal Center Douglas V. Fant, Houston, Tx. Noel E. Galbraith, Unocal Center Marguerite T. Guthrie, Unocal Center Liliana Gutierrez, Unocal Center Susan R. Kauffman, Unocal Center Marylena Lee, Unocal Center Sheryl N. Nakamura, Unocal Center Peter D. Nichols, Unocal Center Helen P. Rosado, Unocal Center Frank A. Valdez, Santa Rosa, Ca.

## CORPORATE DEVELOPMENT ENERGY MINING

#### January 1986

35 YEARS	Rob T	Taylor	Unocal	Center
99 1 EAIN	DOD 1	Lavion	Ullocal	Center

10 YEARS	Robert E.	Vannostrand,	Parachute,	Co.
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<sup>5</sup> YEARS Marshall G. Waller, Parachute, Co.

#### February 1986

5 YEARS Daniel G. Baum, Parachute, Co. Thomas J. Klein, Rawlins, Wy.

#### **ENGINEERING & CONSTRUCTION**

#### February 1986

30 YEARS William A. Daniels, Unocal Center

#### **SCIENCE & TECHNOLOGY**

#### January 1986

10 YEARS George W. Poutney, Brea, Ca. Steven D. Rice, Brea, Ca.

5 YEARS Kenneth M. Dickson, Brea, Ca.
Richard C. Geske, Brea, Ca.
Karl Gunther, Brea, Ca.
Kenneth L. McNutt, Brea, Ca.
Shamseddin S. Mohammadi, Brea, Ca.
Alice A. Probst, Brea, Ca.
Arnold L. Shugarman, Brea, Ca.
Jacqueline K. Williamson, Brea, Ca.
Albert H. Wu, Brea, Ca.
Miguel A. Yracheta, Brea, Ca.

#### February 1986

35 YEARS Norman D. Koch, Brea, Ca.

5 YEARS Robert H. Bennett, Brea, Ca. Melvin Dixon, Brea, Ca. Wook B. Lee, Brea, Ca. Jon D. Probst, Brea, Ca.

#### **ENERGY RESOURCES**

#### OIL & GAS

#### January 1986

40 YEARS Georgianne J. Barthelme, Midland, Tx.

35 YEARS Robert J. Allen, Coalinga, Ca.
Richard A. Armstrong, Unocal Center
Billy B. Dickard, Van, Tx.
Harvey T. Elder, Orcutt, Ca.
Moses F. Garrett, Coalinga, Ca.
Charles R. Harris, Pasadena, Ca.
Alvin E. Ochs, Midland, Tx.
Howard S. Samsel, Jackson, Ms.
Samuel C. Terry, Midland, Tx.

30 YEARS Dwayne E. Beard, Van, Tx. La Vada Chappell, Houston, Tx. Gail H. Halverson, Casper, Wy.

25 YEARS Jave V. Dill, Andrews, Tx.

20 YEARS Sandra M. Dake, Ventura, Ca. Frank R. Knor, Orcutt, Ca.

15 YEARS Alfred D. Broussard, Lafayette, La. Richard A. Burns, Midland, Tx. Arlene A. Definis, Bakersfield, Ca. Larry E. Florence, Van, Tx. William K. Gingrich, Worland, Wy. Russell C. Hanscom Jr., Orcutt, Ca. John C. Merritt Jr., Midland, Tx. Dorothy M. Mitchell, Houston, Tx. Clark A. Robichaux, Houma, La.

10 YEARS William T. Ames, Coalinga, Ca. Leroy H. Fabricius, Worland, Wy. Gregory L. Gluth, Cut Bank, Mt. Rodney C. Montz, Lafayette, La. Barney B. Prejean, Lafayette, La. Felipe M. Subia, Andrews, Tx. Merle W. Tozer, Moab, Ut.

5 YEARS William D. Dugan, Ventura, Ca. Kenneth R. Franklin, Ventura, Ca. Laura Joann Grover, Ventura, Ca. Evan K. Harness, Bakersfield, Ca. Richard V. Harrington, Lafayette, La. Joseph H. Martin, Lafayette, La. David B. McCaleb, Houston, Tx. Lynda M. Miller, Pasadena, Ca. Diane V. Vandeventer, Moab, Ut.

#### February 1986

35 YEARS George L. McCoy, Midland, Tx. Alva G. Mosbaugh, Santa Fe Springs, Ca. Ernest L. Roberts, Oklahoma City, Ok.

30 YEARS Leonard Bourque, Lafayette, La.
Wiley E. Campbell, Brea, Ca.
Gloria L. Dyess, Midland, Tx.
A. P. Fessler Jr., Orcutt, Ca.
Edward R. Fries, Moab, Ut.
Cleo James Holubec, Houston, Tx.

25 YEARS Ravis J. Landry, Lafayette, La. Edith S. LaCoste, Houston, Tx.

20 YEARS Robert D. Avery, Houston, Tx.
Gerry A. Graham, Anchorage, Ak.
Frank R. Gularte, Santa Paula, Ca.
Robert E. Huguenard, Orcutt, Ca.
Harris P. LeBoeuf, Houma, La.
David A. Minor, Unocal Center

15 YEARS Russell D. Adams, Van, Tx.
Benjamin C. Bell Jr., Houston, Tx.
Elmer J. Bolin Jr., Van, Tx.
Lonnie L. Brummett, Taft, Ca.
Denny N. Garrison, Santa Fe Springs, Ca.
John B. Gillespie, Houma, La.
Sylvester T. Hinton Jr.,
Santa Fe Springs, Ca.
Tiew K. Ong, Pasadena, Ca.
Roberta M. Wheeler, Houston, Tx.

10 YEARS Robert R. Broyles, Santa Fe Springs, Ca.
Patrick Foster, Santa Fe Springs, Ca.
Steve E. Hulin, Lafayette, La.
Carl E. Waller, Ventura, Ca.

5 YEARS

Michael G. Bezilla, Anchorage, Ak.

Yvonne B. Biliardi, Orcutt, Ca.

David R. Birchfield, Anchorage, Ak.

William T. Bondurant III, Houston, Tx.

Carl L. Bradshaw, Houston, Tx.

David S. Campos, Woodward, Ok.

David L. Carter, West Liberty, Il.

Donald A. Chudanov, Santa Paula, Ca.

Glenn T. Clifford, Anchorage, Ak.

Jolly A. Coppersmith, Ventura, Ca. Terry L. Dickerson, Van, Tx. Darrell R. Falke, Lafavette, La. Charles A. Field Jr., Orcutt, Ca. Charlyne M. Finch, Anchorage, Ak. Thomas E. Grace, Lafayette, La. Ronald D. Harmon, Ventura, Ca. Donald M. Hellstern, Houston, Tx. George E. Hixon, Anchorage, Ak. Rodney A. Hutchings, Ventura, Ca. Richard L. Jackson, Lafavette, La. David E. Jenkins, Oklahoma City, Ok. Wayne E. Johnson, Anchorage, Ak. Bobby R. Kennedy, Anchorage, Ak. Helen R. Ladson, West Liberty, Il. Keith O. Larson, Cut Bank, Mt. Daniel C. Lennep, Houma, La. Curtis L. Locklar, Andrews, Tx. Ted Joe Medley, Anchorage, Ak. Sharon L. Miller, Midland, Tx. Donna M. Mills, Van, Tx. Sandra Neilsen-Chacon, Unocal Center Jesse T. Noah, Oklahoma City, Ok. J. Faye Norton, Midland, Tx. Jeffrey R. Oleson, Anchorage, Ak. Jackie D. Parnell, Andrews, Tx. Jeanette Poche, Ventura, Ca. Marguerite E. Reid, Sacramento, Ca. Gilbert R. Salois, Cut Bank, Mt. Vern W. Slayton, Anchorage, Ak. Davis Stewart Jr., Houma, La. Teddy R. Story, Anchorage, Ak. William C. Sylvester, Ardmore, Ok. Randy L. Thompson, Anchorage, Ak. Dan A. Vossler, Ventura, Ca. David S. Whitacre, Ft. Morgan, Co. Bradley J. Wilson, Anchorage, Ak.

#### INTERNATIONAL OIL & GAS

January	1986
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30 YEARS Samuel Keller, Unocal Center

10 YEARS Betty Tham, Unocal Center

5 YEARS Lorna G. Curtis, Unocal Center Ian Johnson, London, England Wallis I. Wolff, Los Angeles, Ca.

February 1986

35 YEARS Fred R. Higgins, Jakarta, Indonesia

15 YEARS Donald A. Olisar, Unocal Center

10 YEARS Angela M. Egremont, Los Angeles, Ca. Ben W. Ebenhack, Los Angeles, Ca.

5 YEARS John McGuffie, Los Angeles, Ca. Leonard Romo, Unocal Center

#### Unocal Indonesia, Inc.

#### January 1986

15 YEARS Sublie A. S.

10 YEARS Rusadi

Rusadi Slamet Zulhamdy Achmad Alsiwan F. X. Harsono Mathias Yusran Inung Wasmana K Muchtar Lompo Jose Marcus Bambang Murdiyarso Pither Ruru Budi Setyo Farel Sitorus Alfried Tumang Anang Winardi

#### February 1986

10 YEARS Arbainsjah

Multazam Sanatu Zulfius Abbas Hans E. J. Gasper

Muchamad Jusuf H Daud Hamid Dev Hamsjah Much Harjono

Amir Machmud St. Widyanto Vence A. Wongkar Hengki Sie

Parlin S. Sinambela

5 YEARS Hamir Aboe

Helwanurrachman Djumiril Antonius Sudaryanto

#### Unocal Netherlands, Inc.

January 1986

5 YEARS Rene Kamphius Egbert Timmer

#### Unocal Limited (Singapore)

January 1986

10 YEARS Mdm. Thng Hooi Hong

February 1986

5 YEARS Md. Shariff bin Ariffin Roselind Png Eng Neo

#### Unocal U.K. Ltd.

February 1986

5 YEARS Brian Fraser, Aberdeen, Scotland Robert Gordon, Aberdeen, Scotland Reidar Hustoft, Aberdeen, Scotland

#### UNOCAL CANADA LIMITED

January 1986

15 YEARS Yvonne V. Brager, Calgary, Alta.

5 YEARS C. Lex Herron, Calgary, Alta.

February 1986

15 YEARS R. Garth Goodwin, Buffalo Creek, Alta.

Lawrence W. Sadler, Calgary, Alta.

5 YEARS J. Merveyn Enes, Calgary, Alta. Allen A. Laliberte, Fort St. John, B.C. William S. Lewis, Fort St. John, B.C.

#### UNOCAL THAILAND, INC.

January 1986

10 YEARS Herbert H. Light

5 YEARS David A. Cardus
Suvakon Chanvech
Gottfreid Korneman
Peter M. Longerich
Kessanun Samhuey
Sasima Youngjaroen

February 1986

30 YEARS Randall L. Poulin

Pinit Atha-Tamsuntorn Somboon Chantasiro Chart-Cho Charaswong Niwat Chatsuthi Pornchai Chitsawart Pramote Choowong Vathana Chornphithaks Nipon Chutipanich Ruengsak Im-Suwan Prapote Jareonsuk Sorabul Klommitr Nov Kotcharuck Michael D. Loftus Manoch Malagool Cha-Um Nittayo Thamrong Ouivirach Suchin Pengsree Chakrit Petchram Heinz J. Pfeil Somkid Plabkrasonk Somkid Pojanasiri Pichai Prapatsak Suwat Prisarajub Klin Saisopha Parnupol Saitantong Yutadanai Sangduen Willibald Siegl Sirithorn Sophon Sittichai Supaperm Apirom Tangprajukpukdee Niphon Thammachart Kovit Tospitakul Wirat Tritangwong Revat Vattanonta Vichai Visutisang Chatchai Wichiencharoen Chaiwat Yawwapapong Sakchada Yimsong

#### GEOTHERMAL

January 1986

5 YEARS

5 YEARS

Robert B. Dickerson, Santa Rosa, Ca.
Florence M. Gaa, Unocal Center
Eve L. Lopez, Unocal Center
Lyndon F. Pittinger, Santa Rosa, Ca.
Beverly J. Stemach, Santa Rosa, Ca.
Felipe R. Valdivia, Imperial Valley, Ca.

February 1986

5 YEARS John M. Bodell, Santa Rosa, Ca. Matthew V. Johnson, Imperial Valley, Ca. Bradley E. Martin, Santa Rosa, Ca. Carolyn J. Steinhart, Unocal Center

#### Philippine Geothermal, Inc.

January 1986

10 YEARS Ernesto C. Alimboyogen Metodio L. France Marilou C. Lopez

5 YEARS Andres V. Amante
Wilfredo P. Amante
Alphonso P. Belsonda
Noel S. Bonot
Ladislao M. Brozas
Marcelo M. Carpio
Oscar B. Carpio
Luis Y. Cielo
Shirley G. Cu
Magin C. Dacir
Regino R. De Jesus
Jose G. De Los Reyes

Cesar G. Diego

#### Service Awards



Melinda V. Dupaya Leon V. Ernesto Sotero C. Flores Edilberto F. Forte Quirico P. Gido Maria Theresa R. Grageda Jaime M. Guevarra Rodolfo T. Guillermo Deomides C. Lat Carlos D. Lucillo Luis M. Mabilangan Tereso C. Magampon Pedro C. Malbataan Manuel R. Maligalig Celso C. Maligalig Andres P. Malijan Gerardo S. Malilay Ciriaco M. Malipol Felix M. Maloles Rodrigo M. Maloles Rodrigo S. Maloles Rodolfo D. Mantupar Delfin O. Matibag Gabriel N. Mercado Enrique H. Montales Jr. Nazario C. Monteroso Angel R. Monterozo David R. Monterozo Donato G. Navarette Fe M. Navarette Romeo Q. Novillos Leonardo V. Pareja Benjamin M. Perez Mario M. Piamonte Angelo M. Pucyutan Leandro M. Punzalan Maria A. Punzalan Juanito A. Reyes Bernardino P. Sabarias Roberto V. Sanchez Moises C. Siriban Cresenciano G. Torres Prospero A. Victoria Virgilio E. Villanueva

February 1986

10 YEARS Rolando G. Ibarra Alfonso D. Lorenzana

5 YEARS Ma. Cynthia S. Florentino Norberto S. Gimenez

#### **REFINING & MARKETING**

January 1986

30 YEARS Louis N. Sylwester, Plymouth, Mn.

25 YEARS Shirley T. Gilyeat, San Francisco, Ca. Paul J. Schroeder, Schaumburg, Il. Shirley M. Zoellick, Schaumburg, II. 20 YEARS Donald F. Glass, Hendersonville, Tn. Joan A. Van Auken, San Francisco, Ca.

15 YEARS Lorna O. Frantilla, San Francisco, Ca. Pamela K. Whittington,
Schaumburg, II.

10 YEARS June E. Allen, Schaumburg, Il.
Barbara K. Berry, San Francisco, Ca.
John Fedjur Jr., Schaumburg, Il.
Bertha B. Reynolds, Schaumburg, Il.
Maybelle J. Sechrest, Schaumburg, Il.
Lina S. Szott, Schaumburg, Il.

February 1986

30 YEARS Neil Justice, Atlanta, Ga.

25 YEARS Dennis D. Hartmann, San Francisco, Ca.

15 YEARS Virginia B. David, San Francisco, Ca. Charles E. Magnus, San Francisco, Ca. Angelina C. Songco, San Francisco, Ca.

10 YEARS George S. Hollander, Schaumburg, Il.

5 YEARS Teresita L. Agustin, San Francisco, Ca.
Gregory F. Dobbins, Schaumburg, Il.
Marco A. Mota, Schaumburg, Il.
Gale N. Paster, San Francisco, Ca.
Loraine E. Rose, Schaumburg, Il.
Eric Shultz, San Francisco, Ca.
Richard L. Thorne, San Francisco, Ca.

#### EASTERN REGION

January 1986

35 YEARS Richard N. Allen, Detroit, Mi. Billy R. Moseley,
Pure Trans. Co., Van, Tx.

30 YEARS Lewis L. Hargrove Jr., Atlanta, Ga.

25 YEARS Glenda E. Ackerman, Minneapolis, Mn. Carl A. Hakansson, Schaumburg, Il. Albert L. Heinberg, Schaumburg, Il. George A. Hixson, Schaumburg, Il. Doris C. Smith, Cincinnati, Oh.

20 YEARS William H. Hodges, Savannah, Ga. Jack A. Rood, Columbus, Oh. Richard D. Vancuren, Cleveland, Oh.

15 YEARS Jeral D. Pope Sr., Montgomery, Al.

10 YEARS Dwight R. Burris, Beaumont Refinery James J. Dean, Columbus, Oh.
Autry J. Fontenot, Beaumont Refinery Olen V. Gallison, Schaumburg, Il.
Donnie L. Garcia,

Beaumont Refinery
Hector S. Garza, Beaumont Refinery
Buddy L. Johnson, Beaumont Refinery
Lanny E. Partain, Beaumont Refinery
Cassandra Ann Thomas,
Beaumont Refinery

Beaumont Refinery
John R. Walsh, Chicago Refinery
Kathleen L. Williams,
Beaumont Refinery

5 YEARS
Frances A. Bowman,
Beaumont Refinery
Kathleen G. Daily, Chicago Refinery
David H. McFarland, Miami, Fl.
Maxine L. Norris, Chicago Refinery
David J. Podratz, Chicago Refinery
Elizabeth A. Schneller, Schaumburg, Il.
Taychheang Seang, Beaumont Refinery
Algis P. Strikas, Chicago Refinery
Lusher Williams, Jacksonville, Fl.

February 1986

35 YEARS Donald L. Grady, Chicago Refinery Charlotte M. Howell, Birmingham, Al. Seymour J. Johnson, Schaumburg, Il.

30 YEARS Charles B. Kerley, Cincinnati, Oh.

25 YEARS Paul D. Ertley, Tallmadge, Oh. Frank J. Grzadziel, Chicago Refinery Russell L. Lamm Jr., Columbus, Oh.

20 YEARS Dean C. Schuster, Atlanta, Ga.

15 YEARS Theodore L. Koehn,
Pure Trans. Co., Merino, Co.
Veeda S. Lapham, Schaumburg, Il.
Wyman Megginson Jr.,
Charleston, W.V.

Gwynn S. Scott, Savannah, Ga. Susan K. Tazelaar, Southfield, Mi. John A. Woodcock Jr., Savannah, Ga.

10 YEARS Maureen E. Brigham, Chicago Refinery
Michael L. Charney, Chicago Refinery
Thomas J. Dobbertin, Chicago Refinery
Kevin R. Dumyahn, Chicago Refinery
Vincent J. Lioce, Chicago Refinery
Walter Loggins Jr., Chicago Refinery
Gerald L. Mudroch, Chicago Refinery
W. Wayne Schraer, Chicago Refinery
Michael J. Siron, Chicago Refinery

5 YEARS

Richard Donley, Beaumont Refinery
Robert L. Doucet, Beaumont Refinery
Sonia A. Escobar, Schaumburg, II.
Darrell T. McKenzie,
Beaumont Refinery
Robert L. Miller, Wildwood, Fl.
Wallace S. Pape, Miami, Fl.
Maria J. Santana, Schaumburg, II.

Karen K. Tajbl, Schaumburg, Il.

#### WESTERN REGION

January 1986

40 YEARS Clyde B. Emerick Jr., Phoenix, Az.

30 YEARS Walter E. Butts Jr., Anchorage, Ak. Jack H. Ethridge, Los Angeles, Ca. Ronald E. Newgard, Seattle, Wa.

25 YEARS William R. Baldwin, Portland, Or. George R. Quigley, Richmond, Ca.

20 YEARS Donald M. Hall, San Francisco Refinery Douglas D. Olave, Santa Maria Refinery Paul H. Thomaszeck, Los Angeles, Ca.

15 YEARS Floyd J. Apodaca, San Francisco Refinery John G. Cameron, Los Angeles Refinery Terry E. Cavanaugh, Santa Maria Refinery Margaret A. Corbin, Los Angeles, Ca.

Margaret A. Corbin, Los Angeles, Ca. Allan M. Dailey, San Francisco Refinery Frank P. Gouveia, San Francisco Refinery Marsha E. Lamb, Los Angeles, Ca. Sanford K. Machado, Honolulu, Hi. Henry E. Miller, San Francisco Refinery David M. Murai, Sacramento, Ca.

10 YEARS Milton Balletine Jr., San Diego, Ca.
Steffan E. Blaser, San Francisco Refinery
Steve P. Cantu, Los Angeles Refinery
David M. Gibson, Los Angeles Refinery
Robert Hanson, San Francisco, Ca.
Howard L. Muto, San Francisco Refinery
Daniel J. Ogden, San Francisco Refinery
Charles W. Phillips,

San Francisco Refinery Mary F. Skinner, Los Angeles, Ca. Donna L. Tate, San Francisco Refinery

5 YEARS Quynh Ai, Los Angeles Refinery Darryl B. Binder, Nederland, Tx. Renee L. Curl, Edmonds, Wa. Walter K. Demoray, Los Angeles Refinery Kevin Docherty, Los Angeles Refinery Randy W. Dunn, Los Angeles Refinery Patrick K. Ebert, Richmond, Ca. Charles S. Frazier, Los Angeles Refinery Marlene A. Headington, San Francisco Refinery Michael R. Jenkins, San Luis Obispo, Ca. Bennie Grant Johnson, Edmonds, Wa. Cathy L. Meredith, Seattle, Wa. Robert L. Prophete, Los Angeles, Ca. Philip R. Rosenthal, Los Angeles Refinery Harold C. Scott, Los Angeles Refinery Ellen M. Skufca, San Francisco Refinery Michael N. Stone, Los Angeles Refinery Mark W. Ward, Richmond, Ca. Douglas L. Wilson, Las Vegas, Nv. February 1986 40 YEARS Ernest Edward Ek, Colton, Ca. Mervin J. Hostetler, Los Angeles, Ca. Groover M. Woodard, Los Angeles, Ca. 35 YEARS George G. Bottin, Edmonds, Wa John Catrino Jr., San Francisco Refinery Lyle F. Bruhn, Portland, Or. 30 YEARS William B. Lambe, Edmonds, Wa. John L. March-Davison, Los Angeles, Ca. Robert L. Waine, Portland, Or. Clay R. Warnock, Los Angeles, Ca. 25 YEARS Ronald G. Simpson, Los Angeles, Ca. 20 YEARS Gary E. Lee, Sacramento, Ca. Thomas W. Hail, San Luis Obispo, Ca. 15 YEARS Karen E. Bruton, Los Angeles, Ca. David K. Chan, San Francisco Refinery Ronald F. Ciciarelli, Los Angeles, Ca. William H. Hawk, San Francisco Refinery Jerry A. Miracle, Portland, Or. Paul G. Nauert, Los Angeles, Ca. Edwin H. Smith, Los Angeles Refinery Howard I. Spencer, San Francisco Refinery Deane O. Todd, San Francisco Refinery Morris E. Wilhelm, Anchorage, Ak. 10 YEARS Dennis K. Boling, San Diego, Ca. Guy A. Butler, Portland, Or. Steven E. Conroy, Los Angeles, Ca. Barry D. Ebright, Los Angeles Refinery Mauricio R. Hernandez, Los Angeles, Ca. John F. Magnante, Los Angeles Refinery William A. Stratton, Santa Maria Refinery Samuel W. Taylor, Los Angeles Refinery 5 YEARS Tommy D. Baumgardner,

San Francisco Refinery Vernice F. Boose, San Diego, Ca. Dean G. Bowlus, San Francisco Refinery George E. Bradbury, San Francisco Refinery Debra L. Casas, Los Angeles Refinery Jaime N. Castillo, Santa Maria Refinery Frank R. Digiovanni, San Francisco Refinery

Donald W. Fox, Los Angeles Refinery Robert J. Franklin. San Francisco Refinery Richard A. Hartz, Fresno, Ca. Arthur L. Murdock Jr., Los Angeles, Ca. Mark E. Niccum, San Francisco Refinery Lynn R. Parish, Nederland, Tx. Rebecca E. Slagle, Los Angeles Refinery Myles S. Stevens, San Francisco Refinery Rhonda L. Taylor, San Francisco Refinery Nancy E. Tinnin, Bakersfield, Ca. Glenn Williams, Los Angeles Refinery

#### MARKETERS & DISTRIBUTORS

January 19	986
40 YEARS	Woco Pep Oil Co., Covington, Ga.
25 YEARS	Parnell Oil Co., Parkton, N.C.
20 YEARS	Tri County Oil Co., Inc., Lucedale, Ms.
10 YEARS	G & G Oil Co., Inc., Muncie, In.
February 1	986
60 YEARS	Johnson Union Oil, Inc., Thomson, Ga.
30 YEARS	Carpenter Oil Co., Newark, Oh.
25 YEARS	Brown Oil Co., Selma, Al. Fuel Services, Inc., Chippewa Falls, Wi. S. R. Bennett, Inc., Burns, Or.
20 YEARS	Morris Adams Oil Co., Avon Park, Fl. Morris Adams Oil Co., Rockledge, Fl.
15 YEARS	Union 76 Service Center Co., Waseca, Mn.
10 YEARS	Fletcher Oil Co., Inc., Beaver Dam, Wi.
CHEMI	CALS
January 19	86
40 YEARS	Ernest Hoglund, Brea, Ca. Keith L. Openshaw, Unocal Center
30 YEARS	Leonard W. Karver, Conshohocken, Pa. William Liragis, Brea, Ca.

	110	

25 YEARS Charles M. Overton, Wilmington, N.C. John S. Reimer, Atlanta, Ga.

20 YEARS Harold D. Kithcart, Arroyo Grande, Ca.

10 YEARS Harold W. Carter, Kenai, Ak. Edward D. Kaona, Kenai, Ak. Henry B. Madretzke, Clark, N.J.

5 YEARS Ava O. Brandt, Denver, Co. Danelle Geever, Miami, Fl. Richard W. Main, Kenai, Ak. Kathleen J. Ritter, Schaumburg, Il. Richard A. Roth, Cincinnati, Oh.

#### February 1986

35 YEARS Joseph B. Blanchard, Brea, Ca.

30 YEARS Lloyd A. Osborne, Brea, Ca.

25 YEARS Ronald A. Lee, Lemont, Il. Georgine H. Smith, Conshohocken, Pa.

20 YEARS George K. Benson, Charlotte, N.C. Samuel C. Cook, Charlotte, N.C. Harry S. Sparrow, Charlotte, N.C.

15 YEARS Norman H. Geller, Tampa, Fl. John M. Giba, Lemont, Il. Victor Gilliam, Lemont, Il. Michael W. Thomasson, Charlotte, N.C.

10 YEARS Anthony J. Scott, Conshohocken, Pa.

5 YEARS Robert P. Alexander, Kenai, Ak. John E. Erickson, Lemont, Il. Brenda T. Fenker, Schaumburg, Il. Dennis R. Moore, La Mirada, Ca. Larry N. Odell, Fresno, Ca. Dale W. Rush, West Sacramento, Ca. Thomas R. Talbott, Lemont, Il. John C. Torrence, Charlotte, N.C. Vincent B. Way, Kenai, Ak. Randall K. Wilson, Dallas, Tx.

#### MOLYCORP, INC. 100/

January 1986					
30 YEARS	John A. Burson,	Washington,	Pa.		

20 YEARS Marlin E. Anderson, Washington, Pa. Melecio F. Apodaca, Questa, N.M. Tony S. Duran, Questa, N.M. Jaime Gonzales, Questa, N.M. Roy E. Mahan, Washington, Pa. Bolivar P. Rael, Questa, N.M. Orloff G. D. Sims, Washington, Pa. Herman D. Toland, Washington, Pa. Jay M. Walker, Washington, Pa.

15 YEARS Paul E. Martinez, Questa, N.M.

5 YEARS Marie M. Bigardi, Mountain Pass, Ca. Hovey T. Bisbee, Englewood, Co. William Brown, Questa, N.M. Jess L. Campbell, Mountain Pass, Ca. Phillip W. Evans, Paris, France Lars J. Hansen, Washington, Pa. David B. McBride, Mountain Pass, Ca. Albert Romero, Questa, N.M. Ernie J. Romero, Questa, N.M. Fileberto Sanchez, Questa, N.M.

#### February 1986

20 YEARS Arthur Coca, Questa, N.M. Enrique Gonzales, Questa, N.M. Teodoro Medina, Questa, N.M. Russell O. McConnell, Washington, Pa. Joe A. Montoya, Questa, N.M. Dewey F. Morris Sr., Washington, Pa. Elmer Ortega, Questa, N.M. Jake A. Ortega, Questa, N.M. Gilbert Santistevan, Questa, N.M.

15 YEARS Harry H. Cornell, Pittsburgh, Pa. David H. Osborne, Englewood, Co. Paul Prado, Questa, N.M.

Richard W. Frizzell, Mountain Pass, Ca. 10 YEARS

5 YEARS Kenneth G. Costello, Mountain Pass, Ca. John C. Daniels, Washington, Pa. Ronald P. Desart, Mountain Pass, Ca. Richard S. Dressel, Questa, N.M. Alan L. Jones, Washington, Pa. Stephen Rowe, Mountain Pass, Ca. Linda D. Schone, Mountain Pass, Ca. William R. Yernberg, Englewood, Co.

#### POCO GRAPHITE, INC.

#### January 1986

10 YEARS John F. Beasley, Decatur, Tx. Royal P. Nix, Decatur, Tx.

# Service Awards

#### October 1985

Francis N. Castelberry, Refining & Marketing, Elk Grove Village, Il., March 24, 1953

#### November 1985

Monico Apodaca, Molycorp. Questa, N.M., June 13, 1966 Perfecto Baca, Molycorp, Questa, N.M., March 13, 1964 Doris M. Butman, Refining & Marketing, Mesa, Az., May 24, 1965

Valdemar A. DeHerrera, Molycorp, Costilla, N.M., January 1, 1966 Donald Eichman, Refining & Marketing, Long Beach, Ca., December 18, 1950

Eldon E. Ford, Molycorp, Taos, N.M., November 3, 1969

John W. Gallagher, Molycorp, Questa, N.M., December 13, 1965

Ole P. Gunderson, Refining & Marketing, Minneapolis, Mn., December 1, 1946 R. Margaret Hill, Oil & Gas,

Houston, Tx., January 22, 1963 George C. Jones, Refining & Marketing, Canfield, Oh., July 24, 1953

Gene C. Kinser, Refining & Marketing, Walnut Creek, Ca., July 10, 1949

Glen J. Knolls, Refining & Marketing, Oakland, Ca., November 16, 1947

Tomasito E. Martinez, Molycorp, Albuquerque, N.M., October 10, 1966 Albert Mascarenas, Molycorp,

Questa, N.M., December 30, 1967 Jorge M. Merel, Refining & Marketing, Richmond, Ca., December 29, 1959

W. H. Niederhauser, International Oil & Gas, Lake Isabella, Ca., August 21, 1950

Archie M. Pettry, Oil & Gas, Casper, Wy., September 16, 1942 Eugene L. Slauter, Chemicals,

Brea, Ca., October 8, 1956 Jimmy D. Smith, Molycorp,

Red River, N.M., September 6, 1961 Virginia L. Starquist, Molycorp,

El Prado, N.M., December 21, 1967 James A. Van Osten, Molycorp,

Questa, N.M., October 16, 1975 Norwood L. Williams, Refining & Marketing, Bainbridge, Ga., March 26, 1962

#### December 1985

William P. Barber, Corporate, La Canada, Ca., March 27, 1949 Ralph H. Bauer, Chemicals, Huntington Beach, Ca., September 12, 1966 Ross E. Benson, Science & Technology, La Habra, Ca., March 28, 1954 James S. Brown, Oil & Gas,

San Pedro, Ca., April 12, 1948

Earl E. Browning, Refining & Marketing, Port Neches, Tx., August 6, 1948 James H. Dainwood, Refining & Marketing, Burkeville, Tx., January 7, 1953 Homer D. Davis, Refining & Marketing, Portland, Or., August 18, 1950 Richard G. Dowell, Refining & Marketing, La Habra, Ca., October 21, 1948 Philip B. Dougharty, Refining & Marketing, Buna, Tx., June 14, 1948 William E. Dutro, Refining & Marketing, Torrance, Ca., November 20, 1950 LeRoy Farmer, Refining & Marketing, Lockport, Il., June 24, 1952 Dale C. Finley Jr., Oil & Gas, Seagrove Beach, Fl., November 4, 1946 Leon G. Hammett Jr., Refining & Marketing, Beaumont, Tx., February 16, 1949 Mildred I. Hawks, Oil & Gas, Houston, Tx., September 9, 1974 Donald J. Hills, West Coast Shipping Co., Long Beach, Ca., November 16, 1971 Chester A. Hoinacki, Refining & Marketing, Lemont, Il., January 18, 1949 Charles B. Johnson, Refining & Marketing, Groves, Tx., May 2, 1944 Joy P. McNichols, Corporate, Los Angeles, Ca., March 6, 1952 Neill Morris, Oil & Gas, Van, Tx., January 20, 1945 San Diego, Ca., July 20, 1953 Thomas A. Reardon, Chemicals, Glendale, Ca., June 3, 1968 Guy E. Scroggs, Refining & Marketing, Beaumont, Tx., June 15, 1948 Robert E. Tobin, Chemicals, Brea, Ca., July 18, 1955 Hale B. Vick, Corporate, Birmingham, Al., February 1, 1951

William H. Phillips, Refining & Marketing,

Lewis E. Wallace, Refining & Marketing, Nederland, Tx., July 6, 1948

Charles W. Williams, Refining & Marketing, Los Osos, Ca., September 28, 1948

Oscar O. Wilson, Refining & Marketing, Nederland, Tx., November 17, 1948

Bessie Yasui, Oil & Gas. Carson, Ca., August 28, 1957

#### January 1986

Jesse F. Aldridge, Chemicals, Charlotte, N.C., January 24, 1953 Walter C. Barlow, Refining & Marketing, Douglasville, Ga., July 9, 1942 Philip Blamey, Corporate, La Habra, Ca., November 1, 1941 Virley N. Bradley, Refining & Marketing, Mableton, Ga., September 8, 1964

Florence C. Brazee, Corporate, Montebello, Ca., November 13, 1956

Thomas V. Budwah, Refining & Marketing, Nederland, Tx., June 2, 1953

Arthur H. Buls, Oil & Gas, Ventura, Ca., June 16, 1953

Jack Burger, Oil & Gas, Hacienda Heights, Ca., March 15, 1949

Walter F. Caddell, Oil & Gas, Andrews, Tx., June 16, 1957

Carl S. Cavitt, Refining & Marketing, Cleveland, Tn., September 1, 1965

Jack E. Chiquet, Corporate, Torrance, Ca., November 17, 1969 Jerry E. Clark, Geothermal,

Woodville, Tx., September 9, 1974

John L. Clark, Pure Transportation Co., Chandler, Tx., July 16, 1956

Delbert R. Copeland, Oil & Gas, Andrews, Tx., March 2, 1965

Anthony J. Costenero, Refining & Marketing, Plainfield, Il., March 31, 1949

Ivy J. Cuniff, Refining & Marketing, Port Neches, Tx., January 26, 1949 Calvin L. Davis, Refining & Marketing,

Port Neches, Tx., September 30, 1943 Gerard A. DeBeau, Chemicals,

Buena Park, Ca., July 16, 1969 Leopauld H. Decuir, Refining & Marketing, Winnie, Tx., May 2, 1944

Willard Dorsett Jr., Chemicals, Corona, Ca., June 2, 1959

Claude E. Echols, Refining & Marketing, Vallejo, Ca., May 6, 1946

George W. Eichelberger, Refining & Marketing, Nederland, Tx., June 18, 1948

John Ferenc, Refining & Marketing, Brooklyn Park, Mn., December 10, 1952

William A. Fontaine, Refining & Marketing, Silsbee, Tx., December 17, 1948

Norman M. Forcum, Refining & Marketing, Richmond, Ca., September 6, 1952

Luz M. Garrido, International Oil & Gas, Bell, Ca., September 5, 1969

Ralph E. Gleason, Refining & Marketing, Lockport, Il, February 11, 1952

Frank V. Goode, Chemicals, Lemont, Il., May 5, 1975

Donald L. Grady, Refining & Marketing, Lockport, Il., February 5, 1951

Wayne E. Hamilton, Refining & Marketing, Canyon Lake, Ca., July 27, 1956

Everett C. Hammons, Refining & Marketing, Birmingham, Al., August 3, 1948

Ralph L. Harmon, Refining & Marketing, Pineville, N.C., September 16, 1953 Walter B. Hebert, Refining & Marketing,

Beaumont, Tx., July 26, 1948 Arthur J. Holmes, Refining & Marketing,

Hamshire, Tx., January 20, 1947 Mary W. Hough, Refining & Marketing, Palatine, Il., January 8, 1969

Charles R. Hunter, Chemicals, Rancho Palos Verdes, Ca., August 2, 1954

Louis R. Jacques, Refining & Marketing, Vallejo, Ca., December 23, 1952

Edward Jasinski, Oil & Gas. El Campo, Tx., July 1, 1951

Floyd W. King, Refining & Marketing, Ellabelle, Ga., June 1, 1948

John F. Koester, Corporate, Barrington, Il., November 4, 1974

Robert C. Lewis, Refining & Marketing, Elwood, Il., January 7, 1953

Francis S. Liggett, Science & Technology, Anaheim, Ca., September 12, 1944

Carolyn A. Little, Refining & Marketing, San Luis Obispo, Ca., March 31, 1969

James M. Loughridge, Refining & Marketing, Rodeo, Ca., April 11, 1946

Alfred T. Mannon Jr., Oil & Gas, Shell Beach, Ca., April 18, 1955

Robert W. Massing, Pure Transportation Co., Canton, Tx., June 30, 1947

William H. McNeill, Refining & Marketing, Westend, N.C., September 4, 1956

Edward W. Meadows Jr., Science & Technology, Fullerton, Ca., July 28, 1952

Denver C. Mixon, Refining & Marketing, Savannah, Ga., September 22, 1952

Frank W. Nadolski, Chemicals, South River, N.J., January 21, 1952 Joseph E. Palma, Refining & Marketing,

Pinole, Ca., August 6, 1951

Frank Perkins, Refining & Marketing, Harbor City, Ca., November 16, 1953 Florian M. Plonka, Refining & Marketing, Cicero, Il., March 12, 1954 Leon G. Quensel, Chemicals, Kenai, Ak., December 11, 1953

Robert Radjenovich, Refining & Marketing, Lockport, II., July 7, 1952

John A. Russell, Pure Transportation Co., Van, Tx., March 17, 1947 Evell G. Savage, Refining & Marketing,

Tarrant, Al., July 16, 1963 Harvey Schlotthauer, Oil & Gas, Camarillo, Ca., October 22, 1947

Edwin J. Schoen, Refining & Marketing, Elmhurst, Il., August 4, 1932

Leon R. Shepherd, Refining & Marketing, Joliet, Il., March 29, 1949

Alfred S. Sigmund, International Oil & Gas, Seneca, S.C., September 1, 1975

Joseph H. Sitton, Refining & Marketing, Beaumont, Tx., January 27, 1949 Arles J. Smalley, Oil & Gas,

Costa Mesa, Ca., May 19, 1948 John E. Smith, Refining & Marketing, Rialto, Ca., October 25, 1973

Jack T. Spaulding, Refining & Marketing, San Luis Obispo, Ca., April 13, 1953Alfred H. Sweet, Refining & Marketing,

Alfred H. Sweet, Refining & Marketing, Vallejo, Ca., July 18, 1944

Virginia E. Trudeau, Refining & Marketing, Toledo, Oh., May 7, 1956 Guy L. Waller Jr., Science & Technology,

Corona, Ca., May 9, 1945

Jerome W. Ware, Refining & Marketing,

Savannah, Ga., January 27, 1950 Fred O. Whitney, Refining & Marketing, Tacoma, Wa., June 25, 1963

#### February 1986

Wilfred O. Bowers, Refining & Marketing, Heath, Oh., June 2, 1947

Kenneth E. Clark, Refining & Marketing, Lockport, Il., May 15, 1942

John E. Crofton, Refining & Marketing, Martinez, Ca., August 30, 1951

Sherman Ditch, Oil & Gas, Abbeville, La., November 20, 1942

Clyde B. Emerick Jr., Refining & Marketing, Phoenix, Az., January 25, 1946

Casimir C. Kucharski, Refining & Marketing, Hampshire, Il., November 1, 1963

Dennis L. McCormick, Refining & Marketing, Dayton, Oh., October 31, 1942

John H. Merriweather, Refining & Marketing, Vallejo, Ca., July 22, 1968

Doyle D. Paul, International Oil & Gas, Los Angeles, Ca., May 1, 1967 Richard L. Penninger, Chemicals,

Charlotte, N.C., July 12, 1948 **Albert D. Powell,** Refining & Marketing, Beaumont, Tx., October 7, 1974

Donald L. Redfern, Oil & Gas, Sunnymead, Ca., July 9, 1945

Julia E. Rediske, Refining & Marketing, Seattle, Wa., January 4, 1965

William L. Snider, Refining & Marketing, Westerville, Oh., August 19, 1942

Joseph L. Terrell, Oil & Gas, Brea, Ca., September 8, 1953

#### IN MEMORIAM

#### **Employees**

Tony F. Burt, Molycorp, Aurora, Ca., September 21, 1985 Pio C. Directo, Refining & Marketing, N. Long Beach, Ca., November 26, 1985 Louis F. Guidry, Refining & Marketing,
Port Neches, Tx., September 22, 1985
James W. Livingston, Oil & Gas,
Santa Paula, Ca., September 19, 1985
John McLelland, Refining & Marketing,
Dearborn Heights, Mi., November 12, 1985
Harvey H. Nichols, Oil & Gas,
Kenai, Ak., October 21, 1985

#### Retirees

Fred Burt Adams, Oil & Gas,
Los Angeles, Ca., September 11, 1985
Robert L. D. Allen, Refining & Marketing,
Seaford, De., October 11, 1985
Nils Anderson, Refining & Marketing,
Beaumont, Tx., October 19, 1985
Andrew J. Barge Sr., Refining & Marketing,
Zavalla, Tx., December 11, 1985
Albert W. Berding, Molycory

Albert W. Berdine, Molycorp, Bentleyville, Pa., September 14, 1985 Mary L. Berntsen, Science & Technology,

Paso Robles, Ca., October 1, 1985 Franklin W. Bowers, Refining & Marketing, Bakersfield, Ca., October 22, 1985

Lewis E. Box, Oil & Gas, Healdton, Ok., October 3, 1985

Lester F. Brennan, Oil & Gas, Cut Bank, Mt., September 27, 1985 Grace E. Bridges, Refining & Marketing,

Franklin Park, II., December 12, 1985 William E. Campbell, Refining & Marketing,

Beaumont, Tx., November 2, 1985 Lester R. Cochran, Refining & Marketing, Stow, Oh., October 7, 1985

Thornton D. Coguill, Oil & Gas, Grey Bull, Wy., October 30, 1985

Frank E. Crookes, Refining & Marketing, El Sobrante, Ca., December 17, 1985 D. L. Dickson, Oil & Gas,

Texas City, Tx., September 22, 1985 Burford R. Dillon, Oil & Gas,

Basin, Wy., December 18, 1985 Joseph E. Garrison, Refining & Marketing,

Toledo, Oh., September 16, 1985 Joseph Gorski, Refining & Marketing, Detroit, Mi., November 11, 1985

Milton J. Guidroz, Refining & Marketing, Port Neches, Tx., October 1, 1985

Herbert H. Hagan, Refining & Marketing, Pleasant Hill, Ca., September 28, 1985 Clayton Rae Hall, Oil & Gas,

Camdenton, Mo., September 16, 1985 Sam Dooley Hall, Refining & Marketing,

Memphis, Tn., October 12, 1985 Charles R. Hiatt, Refining & Marketing, Bakersfield, Ca., December 18, 1985

Iver A. Hill, Refining & Marketing, Rodeo, Ca., October 4, 1985

James Ernest Hill, Refining & Marketing, Hopeville, Ga., October 29, 1985

Leonard A. Hill, Refining & Marketing, Coffeyville, Ks., November 17, 1985

Homer Hayes Hostetter, Refining & Marketing, San Diego, Ca., October 5, 1985

Jean F. Hymer, Corporate, Sparks, Nv., November 9, 1985

George A. Jacobson, Refining & Marketing, New Port Richey, Fl., October 2, 1985

Dennis M. Jarratt, Oil & Gas, Pasadena, Tx., October 28, 1985

Carl R. Jonswold, Refining & Marketing, Chicago, II., October 6, 1985 James A. Lake, Oil & Gas,

Olney, Il., December 19, 1985

Robert G. Land, Oil & Gas, Cornelis, Or., September 1, 1985 Edward T. Loope, Refining & Marketing, San Andreas, Ca., October 6, 1985

Jacob B. Miller, Refining & Marketing,
 Wheeling, W.V., September 27, 1985
 Jacob W. Morgan, Refining & Marketing,
 Beaumont, Tx., October 27, 1985

Francis J. Mulroney, Refining & Marketing, Aberdeen, Wa., November 11, 1985

Early B. Nevil, Refining & Marketing, Troy, Th., November 20, 1985 Juniol Nichols, Refining & Marketing,

Minneapolis, Mn., October 19, 1985 Johnnie R. O'Reilly, Refining & Marketing, Tampa, Fl., November 20, 1985

Leroy W. Oglesbee, Pure Transportation Co., Raymond, Ks., October 1, 1985

Peter M. Olsen, Refining & Marketing, Whittier, Ca., October 4, 1985 William P. Osborne, Refining & Marketing,

San Pablo, Ca., November 15, 1985 Willis B. Paris, Refining & Marketing,

Tucson, Az., October 11, 1985 Roy A. Penna, Refining & Marketing,

Vidor, Tx., November 28, 1985

James C. Peterson, Refining & Marketing,

Superior, Wi., November 17, 1985 Henry W. Pohle, Refining & Marketing,

Palm Desert, Ca., September 10, 1985 **Dennis W. Rainey**, Refining & Marketing, Birmingham, Al., November 30, 1985

Eugene P. Rhodes, Refining & Marketing, Port Neches, Tx., October 11, 1985

Jimmie L. Rodgers, Refining & Marketing, Beaumont, Tx., December 23, 1985

Inez Rybacki, Refining & Marketing,
 Milwaukee, Wi., October 18, 1985
 Willis Edward Smith, Molycorp,
 Hanover, Pa., October 13, 1985

Caldwell J. Soldan, Refining & Marketing, Wheeling, W.V., October 7, 1985

Harry L. Stinson, Refining & Marketing, Norfolk, Va., October 30, 1985

Charles W. Taylor, Pure Transportation Co., Pauls Valley, Ok., November 16, 1985John Kenneth Taylor, Refining & Marketing,

Ojai, Ca., September 16, 1985 Emerson K. Trout, Oil & Gas,

Olney, II., September 19, 1985

Paul Luther Wade, Refining & Marketing, Birmingham, Al., December 9, 1985 Guerney L. Wade, Oil & Gas,

Alhambra, Ca., November 18, 1985

Harry H. Wagner, Refining & Marketing,

Lodonandenes, Vo. Sestember 22, 10

Independence, Ks., September 23, 1985
John D. Wall, Refining & Marketing,
Nederland, Tx., December 13, 1985

W. Dawson Wallace, Corporate, Palos Verdes, Ca., December 5, 1985

Donald L. Warden, Refining & Marketing, Toledo, Oh., August 19, 1985 Walter G. Weithaus, Refining & Marketing,

Toledo, Oh., November 12, 1985

Willard R. Wellman, Refining & Marketing, Vista, Ca., October 16, 1985

Guy E. Wilkins, Refining & Marketing, Wilmington, Ca., November 26, 1985

Clyde C. Williams, Refining & Marketing, Newark, Oh., October 31, 1985

Philip G. Williams, Oil & Gas,

Lake Charles, La., September 29, 1985 William Rae Williamson, Refining & Marketing, Sacramento, Ca., November 19, 1985

Donald E. Young, Refining & Marketing, Vidor, Tx., October 6, 1985



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COVER: Unocal's crude oil tanker Sansinena II, pictured here docked at the company's San Francisco Refinery, has been transporting Cook Inlet production south for nearly a decade and a half. What's it like to set sail on this workhorse? Story on page 1. Photo by Tim Smight.

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