

*Seventy*  
WINTER 1992  
*Six*



# IN BRIEF...

## Celebrating A Century Of Scientific Innovation

In 1891, just one year after Unocal was founded, research became a permanent part of company business strategy. It was then that co-founder Lyman Stewart hired a chemist to improve the processes used in refining California's sour crudes. Research, thought Stewart, would provide the edge Unocal needed to compete successfully in the Golden State's petroleum boom.

A century later, the one-man chemistry department has expanded into the 680-person staff of the Science & Technology Division (S&T). Over the years, Unocal researchers have developed many processes and products, which have pushed the company to the forefront of technology.

Recent successes have included development of computerized technology to predict recovery from horizontally-drilled wells, which lowers development costs; a method to clean drill cuttings in an environmentally acceptable manner; and a more effective catalyst for the refining process of fluid catalytic cracking, which is predicted to improve yields at the Los Angeles Refinery by about \$10 million annually. As a result of such innovations, Unocal now holds approximately 1,100 patents worldwide.

"Application of new technology is especially critical to ongoing programs in exploration, development and production," says Richard J. Stegemeier, Unocal's chairman, president and CEO. "But all the operating divisions rely on the technical expertise of research personnel to help them solve their problems in the most creative, cost-effective ways."



In November of last year, S&T employees held a centennial event at the research center in Brea, California to celebrate Unocal's century-long commitment to scientific innovation. "As we complete 100 years of technological research and development, it's time to look ahead to the many accomplishments yet to come," says S&T President Steve Lipman. "We must maintain a firm commitment to basic and applied scientific research, with a renewed emphasis on company operations."

For S&T's staff, the range of research will extend from agriculture to geochemistry. In support of the Oil & Gas Division, S&T must continue to search for ways to increase reservoir yields and lower the inherent risk of drilling exploration wells.

In the interests of the Refining & Marketing Division, researchers are charged with formulating environmentally acceptable fuels and more efficient refining catalysts. On behalf of the Chemicals & Minerals Division, S&T is seeking to develop more effective agricultural chemicals that have minimal environmental impact.

"In short," says Neal Schmale, senior vice president of Corporate Development and president of the Chemicals & Minerals Division, "S&T will focus on helping the operating divisions become more productive through the application of new and advanced technology."

Just as research provided a competitive edge 100 years ago, S&T's work should continue to help improve Unocal's productivity and competitive strength in the years ahead.

## Chemicals Division Buys Fertilizer Facilities

Unocal's agriculture business is cultivating new growth opportunities. In January, the company purchased most of Chevron Chemical's nitrogen fertilizer interests.





The deal included Chevron's manufacturing and storage facilities in Kennewick and Finley, Washington, and a toll processing agreement for products produced at Chevron's plant in Richmond, California.

"The purchase will allow increased production of higher-value, upgraded nitrogen products to better serve growers in the West," says Chuck Merrill, group vice president of Unocal's Agricultural Products. "The acquisition allows us to expand our existing nitrogen fertilizer business."

Formerly, Unocal relied on agreements with other companies to market nitrogen fertilizer products in the northwest United States. The deal will also help Unocal meet changing industry trends.

"Demand for upgraded fertilizers such as ammonium nitrate is increasing," says S. Jay Yost, general manager of Marketing & Product Development. "Our purchase of the Chevron facilities positions us as a long-term marketer of nitrogen products on the West Coast."

Unocal will continue to produce anhydrous ammonia and urea at its primary production facility in Kenai, Alaska and UAN 32 (urea ammonia nitrate) in West Sacramento, California.

## Refinery Purchase Bolsters Downstream Capabilities

In December of last year, Unocal purchased a substantial portion of Shell Oil's refinery in Carson, California. The sale included a 125,000-barrel per day crude unit, a coker, a gas oil hydrotreater, sulfur plants, assorted tanks and other related equipment.

Purchase of the Carson facilities significantly expands the capabilities of Unocal's existing Los Angeles Refinery in nearby Wilmington, California, and improves refining margins for the company.

"The acquisition makes us one of the lowest-cost refiners in the United States," says Richard J. Stegemeier, Unocal's chairman, president and chief executive officer. "The new coker increases our ability to process heavy, high-sulfur crudes, lowering raw material costs by an estimated \$1.40 to \$1.75 per barrel."

In addition, the coker adds an estimated 50 to 60 cents per barrel to the company's refinery margin by eliminating production of low-value fuel oil. The refinery's conversion rate of raw material to gasoline, jet fuel, diesel and gas-oil will rise from 77 percent to 85 percent.

The Carson facilities also include a hydrotreater, which enhances Unocal's ability to manufacture reformulated gasolines while allowing the company to suspend work on the hydrotreater formerly slated for construction at the Wilmington site. The company has already begun to benefit from improved production, product quality, and environmental performance because of the Carson hydrotreater.

As part of the agreement, Unocal procures Los Angeles Basin and San Joaquin Valley heavy crude oil from Shell, reducing Unocal's need for higher-cost Alaskan North Slope and foreign crudes.



## Parade Entry Is "Paradise" On Wheels

The name sounds like a travel agent's idea for a tour package, conjuring up images of glorious trips to exotic destinations. A colorful floral display called *A Voyage to Paradise* served as Unocal's entry in the 1992 Tournament of Roses Parade. This year marked the company's 50th entry in the annual New Year's Day festivity, held in Pasadena, California.

Designed and built by C.E. Bent and Sons, the float celebrated the parade theme, "Voyages of Discovery," with a colorful depiction of paradise on wheels. After the chassis and basic form were assembled, Unocal volunteers completed the decorating process by covering the float with thousands of flower petals.

"The float decoration is an annual, company-organized event at Unocal," says Mike Hogelund, coordinator of the volunteer effort. "This year, more than 400 employees, retirees and their family members contributed a total of 3,000 hours to the project."

To create "paradise," the builders constructed the float in two linked parts. The design featured flowered representations of rare birds, exotic animals, a group of huts, a large tree, and a moving water wheel. The tree was covered in paper bark, dock weed and chrysanthemums, with roses and gerbera encircling the trunk.

The huts had bamboo walls and roofs made from sisal rope and palm fronds. Carnation petals, yellow statice, green ti leaves and cymbidium orchids covered the sculpted flowers, while orchids on coco sticks, palm fibers, moss, irises and marigolds formed the birds and animals. Roses, carnations and gerbera dominated the gardens depicted on the float's base.

An estimated 1 million people lined the parade route in Pasadena to view the spectacle. Three hundred million more parade watchers didn't actually smell the roses, but instead got a good, strong dose of flower power via the worldwide television broadcast. ☺



# MANNING THE FRONT LINES

**T**urning south onto the broad oceanfront boulevard known as The Corniche, the gray sedan joins a stream of cars heading toward downtown Dakar. To the right, the waters of the Atlantic shimmer in the early morning sunlight.

Ahead, the tall buildings of the city's central business district rise on the horizon. The summer heat is already building here on the coast of Senegal, located at the very tip of western Africa. As usual, it's going to be a warm day.

Seated inside the car with a thick sheaf of papers on his lap, Bill Sulkoske gazes out over the water, thinking about the week ahead. It promises to be a full one. But Sulkoske, resident manager of Unocal Senegal, the company's newest overseas oil exploration venture, is no stranger to long hours. Since he arrived here in mid-July to open the company's Dakar office, 12-hour days have been the norm. Now, in early September, there is still a mountain of details to attend to before the first exploration well can be spudded.

A former French colony, Senegal (pop. 8 million) gained its independence in 1960. Dakar, the nation's capital, is a thriving, cosmopolitan city of 1.5 million. By the time Sulkoske's car arrives in the city center, the streets are filled with vehicles and work-bound pedestrians. Most of the people sport western attire, but many wear the colorful robes and gowns traditional to this part of Africa. Interspersed among the cars are numerous small buses, called jitneys, that serve as one of the trademarks of Dakar.

Located on the sixth floor of a modern high-rise, Unocal's office still has the look of a work-in-progress on this morning. Carpenters hammer away, the smell of fresh paint hangs in the air, and boxes are stacked in hallways and vacant rooms. In addition to Sulkoske, three other expatriates are stationed here—a geophysicist, logistics manager and finance manager. (A drilling manager and exploration manager will soon join the staff.) The remainder of the Unocal work force—some 14 individuals—are Senegalese nationals filling positions that range from accountant to engineering trainee.

As Sulkoske enters his office, administrative assistant Fatou Diop hands him a stack of faxes from Unocal Center in Los Angeles. A shipment of computer equipment is due to arrive today, she tells him, and a meeting with the head of Senegal's state oil company is scheduled for 10 a.m.

"You might want to take a look at this," she says, indicating a large box in a corner of the office. Sulkoske walks over and glances inside. The box contains several large block letters, and an orange-and-blue 76 emblem. "Our logo finally arrived," he says, smiling. "I guess that means we're in business."

While starting up a new exploration project in California or Texas may be routine, doing so half a world away, in Senegal, is another story. Aside from a small onshore natural gas field developed in the early 1980s, the nation has virtually no petroleum production. No serious exploration drilling has taken place here for more than two decades. It wasn't until recently that geologists, armed with the latest scientific techniques, began to take a closer look at the region. At the same time, the government of Senegal began a concerted effort to seek out foreign expertise and capital to help evaluate their nation's hydrocarbon potential.

Several companies expressed interest, including some of the

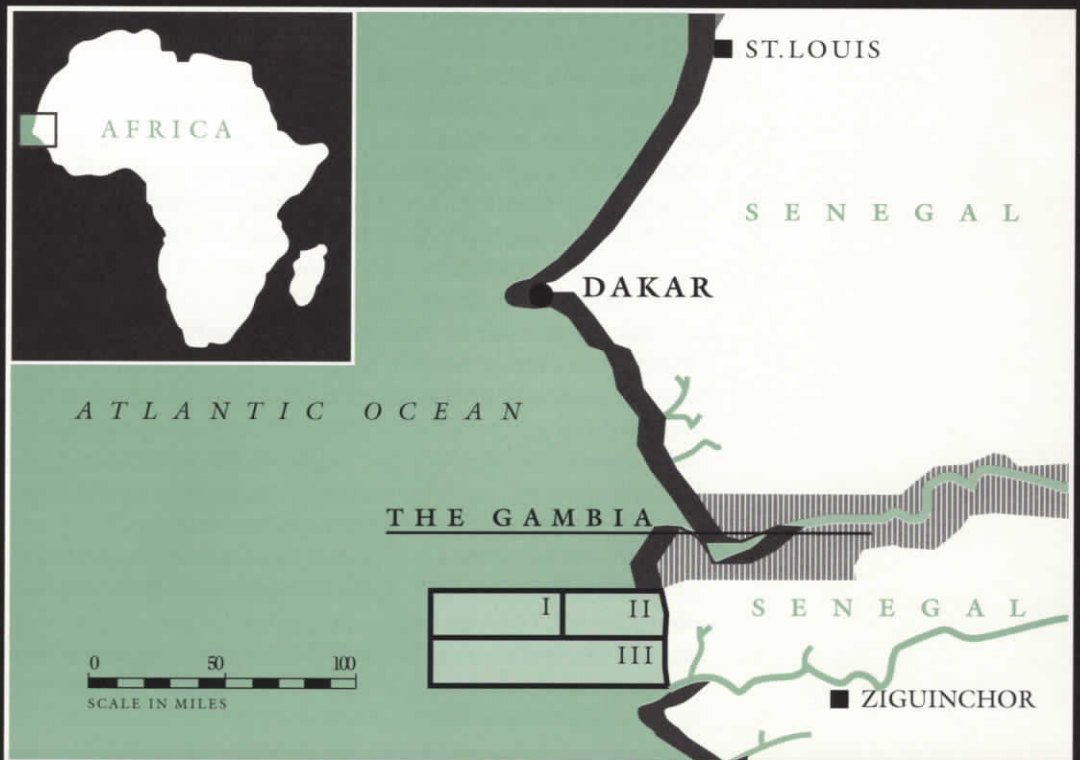


**It wasn't until recently that geologists began to take a closer look at the petroleum potential of West Africa.**





Top, a section of downtown Dakar, with Goree Island on the horizon. Above, midday activity at a Dakar street market. Opposite page, a view of the office building where Unocal Senegal is headquartered. Map at right shows the location of Unocal's three exploration blocks offshore Senegal.







*Geophysicist Paul Ware (above) and geologist Martha Hall-Burr made Unocal's initial contact with Senegalese officials in the summer of 1989.*

oil industry's international giants. But Unocal was the first to negotiate and sign an exploration contract. The story of how this came about—and what happens from here—illustrates Unocal's global exploration strategy and serves as a prime example of how the company's "new ventures" projects come together.

The story begins with Unocal's Frontier Exploration group. Since the late 1980s, the company has pursued an aggressive exploration strategy geared toward identifying underexplored areas of the world that may have major oil potential. "To ensure Unocal's long-term future, it's clear that we've got to find substantial new oil reserves," says Tim Lauer, vice president, Frontier Exploration. "Because the world's 'easy oil' has already been found, we must focus on areas that are relatively unexplored."

That effort starts with broad geologic studies to evaluate sedimentary basins around the world. Some of these prospects have never been explored, due to their remoteness, harsh environments, or for political reasons. Others may have been looked at during years past—before the advent of modern exploration techniques—and dismissed as non-prospective or uncommercial.

**A**fter targeting a basin that looks promising, the next step is to compile as much information on it as possible. "Our geologists and geophysicists play a key role at this stage," Lauer says. "They are usually the ones who go out in the field, and make initial contacts to gain access to whatever data exists for a particular region."

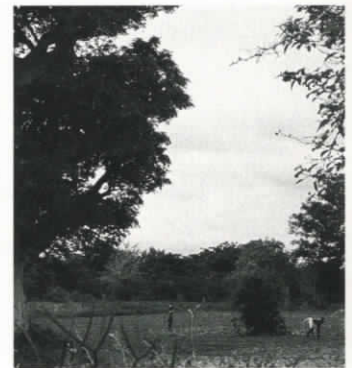
In the case of Senegal, geophysicist Paul Ware and geologist Martha Hall-Burr were on the point. In the summer of 1989, the pair was working on a regional study of West Africa in an effort to identify the area's most attractive unexplored acreage. In July of that year, Ware and Hall-Burr traveled to Lagos, Nigeria, to attend a petroleum seminar. There they met Birame Diouf, operations manager of Petrosen, Senegal's state-owned oil company.

Diouf, who was heading up Petrosen's effort to promote Senegal to foreign oil companies, invited Ware and Hall-Burr to visit Dakar and review data from seismic surveys done in past years. "We went to Dakar that fall, and brought a good deal of data back to Los Angeles for reprocessing," Ware recalls.

A team of earth scientists at Unocal's Science & Technology Division in Brea, California were assigned to work with the data. Key individuals involved in the project included David Schlichtemeier of the Seismic Acquisition and Imaging group, Stan Frost of Stratigraphic Analysis, and Lorraine Carey of the Reservoir Characterization group. Schlichtemeier headed a team in charge of reprocessing the old seismic records, while Frost and Carey focused on data interpretation.

"The work yielded some very interesting features that had been overlooked in the past, when geophysical interpretation was not as technically advanced as it is today," Ware says. The area offshore southern Senegal looked particularly promising. Subsurface indications seemed favorable for potential hydrocarbon source rocks, reservoir rocks and sealed traps—the three features necessary for a commercial oil deposit.

At this point, Unocal's Business Development team was brought on-board. A unit of the International Oil & Gas Division (as is the Frontier Exploration group), Business Development is charged with making economic analyses of new venture prospects, and negotiating contracts if proposals are approved by Unocal management.



*Top, baggage is stowed atop one of Dakar's colorful jitneys. Bottom, farm workers tend a field outside the city. Peanuts, sorghum and rice are Senegal's main agricultural crops.*



“Initially, what we do is estimate the costs associated with a new venture project, and weigh these costs against the possible rewards,” says Quentin Van Camp, vice president of Business Development. To accomplish this, a multi-disciplinary team is put together to evaluate each prospect. The team, which is drawn from varying segments of Unocal, enlists members with several different areas of expertise—from economists and tax experts, to lawyers and technical specialists.

“The make-up of a particular team will change depending on the specific needs associated with a project,” says Van Camp. “We try to eliminate ‘turf lines’ that can create bottlenecks.”

**G**iven the competitive nature of the oil business, speed is critical. “Being the first company to explore a given frontier area is very important,” Van Camp explains. “Those that don’t move quickly will be beaten out by others. Our philosophy at Unocal is simple: if we have a good exploration opportunity, we don’t want to lose out because we took too long to make a decision.”

The Senegal team included (among others) Sulkoske; Ben Talley, director of drilling operations; Rog Hardy, exploration manager for Southern Africa and Latin America; Dennis Butler, corporate attorney; and Bill Schneider, valuation engineer. After careful study, they recommended that Unocal pursue the Senegalese offshore acreage. Management gave the team a green light to proceed in March of 1990, and negotiations for an exploration contract were scheduled to begin the following October.

In the months before formal negotiations got underway, members of the Unocal team visited Dakar several times and remained in close contact with Senegalese officials.

“In any new business relationship, it’s important for both parties to learn about each other, and to build a feeling of trust and rapport,” says Van Camp. “We always make a special effort to educate officials in potential host countries about Unocal—from our history and operations, to our reputation and technical capabilities. At the same time, we strive to learn as much as we can about their nation—their culture, customs, economy, energy objectives and way of doing business.”

In Senegal’s case, this mutual learning process extended over a series of meetings with government officials and officers of Petrosen. Among them were Alassane Ndiaye, Senegal’s Minister of Industry, Commerce and Handicrafts; Baidy Diene, Director of Energy, Mines and Geology; and Ousmane Ndiaye, Director and General Manager of Petrosen. The meetings took place in Dakar, and at Unocal Center in Los Angeles.

In addition, Van Camp and Sulkoske invited Senegalese officials to tour selected Unocal facilities and operations. Included were the Fred L. Hartley Research Center in Brea, various California-based oil and gas facilities, and the company’s extensive natural gas project in Thailand.

“Our operations in Thailand serve as a showcase of Unocal’s technical capabilities and operating philosophy,” says Sulkoske.

“We feel that overseas ventures are true partnerships that must benefit both parties to succeed,” he continues. “In Thailand, visiting dignitaries can see for themselves that we have built a first-class operation. They also see that Unocal is firmly committed to training and hiring host-country nationals for positions at the highest levels, and that we use local vendors and service companies whenever possible.”

---

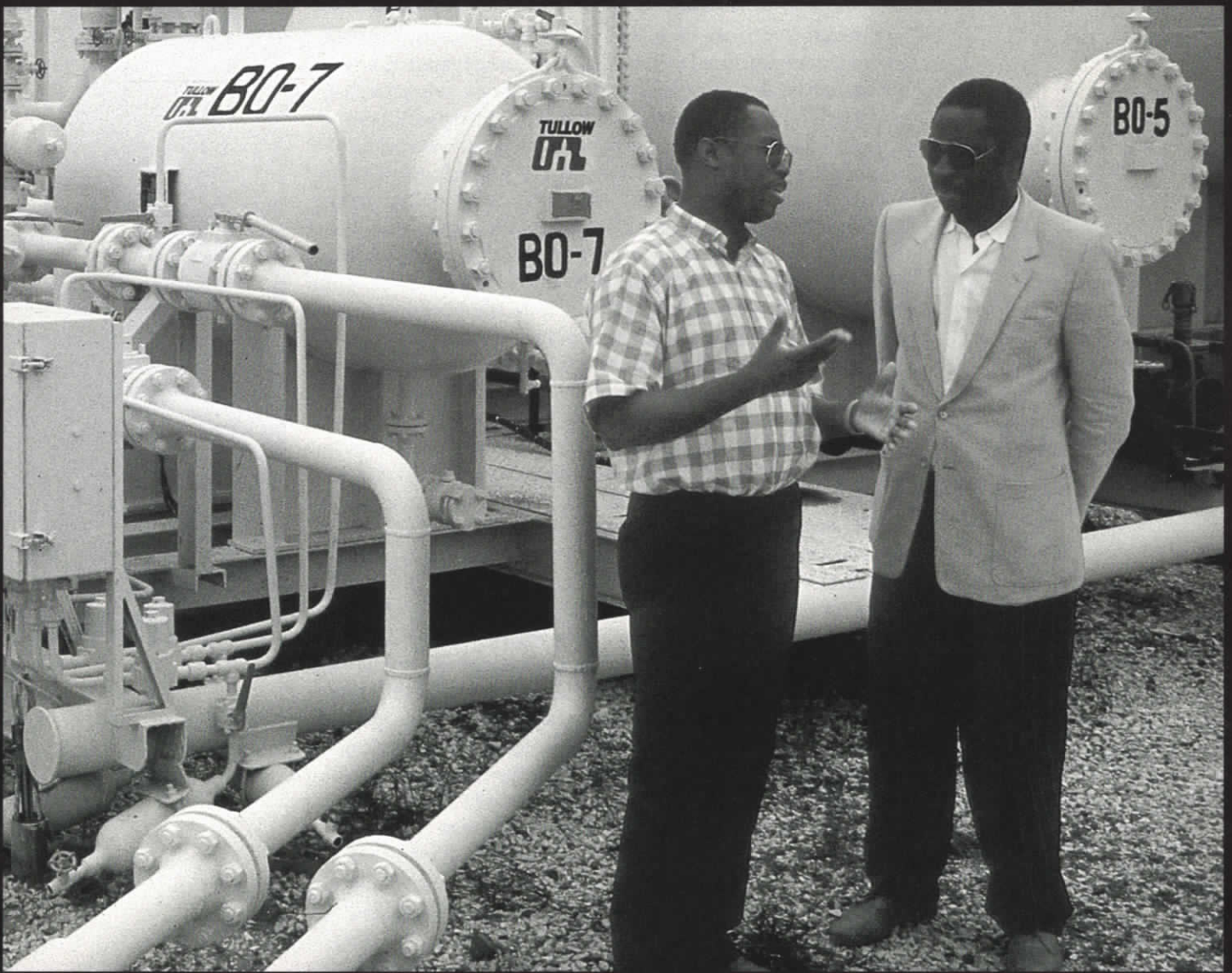
**“In any new business venture, it’s important for both parties to build a feeling of trust and rapport.”**

---



*Unocal Senegal resident manager Bill Sulkoske (left) confers with Ousmane Ndiaye, director and general manager of Petrosen.*





*Above, Petrosen production manager Lamine Diack Diouf (left) visits an onshore natural gas field north of Dakar. Right, Bill Sulkoske and Paul Ware review seismic data.*





---

Negotiations with Petrosen began in October of 1990. Although there were many issues to work through—from time-tables and well commitments, to production splits and tax concerns—the negotiations were concluded in just four months. Under terms of the production sharing agreement, which was formally signed in July of 1991, Unocal was given a 1.6-million-acre concession offshore southern Senegal. The contract committed Unocal to a three-year initial exploration program, including a 500-kilometer seismic survey and two wells.

“Both parties were pleased with the final agreement, which is what you always aim for in a negotiation,” says Van Camp. “I don’t think it could have gone any more smoothly.”

With the ink on the contract barely dry, the next phase began: setting up shop in Dakar and getting the project started. Overseeing this task was Bill Sulkoske. “Starting up a brand new operation from scratch can seem overwhelming at first,” says Sulkoske, whose overseas experience with Unocal includes stints in Thailand and Angola. “Basically, what we have to do is build a miniature oil company from the ground up.”

**E**nsconced in a Dakar hotel room for the first few weeks, Sulkoske began with the nuts and bolts: scouting for office and warehouse space; interviewing bankers, lawyers, vendors and local businessmen; house hunting for the expatriate staff; and shopping for furniture, vehicles, office supplies and other basic necessities. Dr. Donald Dawson, Unocal’s manager of International Medicine, flew to Dakar from the company’s office in Sunbury, England to evaluate hospital facilities and set up a medical support network.

“Once you establish a presence and begin making contacts, things gradually begin to come together,” Sulkoske says. “Petrosen was very helpful in providing initial introductions for us. We also were aided by the U.S. Embassy, and by other international companies doing business here.”

By early September, when *Seventy Six* visited Dakar, Unocal Senegal was comfortably situated in its downtown offices. Down the hall from Sulkoske, Walt Stahmer, manager of Accounting and Finance, has just finished instructing a newly hired Senegalese assistant on the “ins and outs” of invoice processing.

Stahmer, whose previous overseas assignments took him to Bolivia and Indonesia, has a full slate of tasks for this week. He is in the midst of reviewing Senegalese business and customs regulations, establishing an office procedure for accounting and requisition handling, and setting up a system for the hiring and training of support staff. Stahmer is also responsible for acquiring and installing the office’s computers and communications equipment.

“Sometimes it’s hard for us to catch our breath around here,” he says. “But it’s very exciting to help build a brand new organization. I enjoy experiencing new places and cultures, and learning how business is conducted in different parts of the world.”

At the moment, personnel concerns are at the forefront for Stahmer. By the time the first exploration well is spudded—in the fall of 1992—Unocal Senegal expects to have about 40 Senegalese employees on the payroll who will work in various technical and administrative capacities. If a major discovery is made, those staffing numbers will be increased substantially.

“One of the good things about starting from scratch is that we can hire and train the best people available,” he says. “We

---

**“A project like this requires a real team effort, and we have a small enough team that everyone feels a part of it.”**

---





already have a large portfolio of quality applicants to evaluate.”

In another office nearby, Paul Ware is looking over a new batch of reprocessed seismic data just faxed in from Los Angeles. Subsurface maps of Unocal's offshore acreage are still being fine-tuned as the existing data is “massaged” by computer.

“Our acreage has three different types of potential oil plays—salt dome, sandstone and carbonate,” says Ware. “That presents us with a lot of possibilities, which is what attracted us to Senegal in the first place. But it also means we're faced with a tricky decision about where to drill our first exploration well.”

**T**he carbonate play may be the most attractive location, but it also has drawbacks. “The formation shows good potential,” Ware says, “but porosity and permeability can be difficult to predict in carbonate plays. Well placement will be extremely important. That's why we want our maps to be as detailed and precise as possible before we make a final decision.”

In the months to come, Unocal Senegal will conduct new seismic surveys over portions of the offshore contract area. The company will also set up an operations base at Dakar's port facility, purchase drilling supplies and ship them in, contract for a rig, and continue to increase staffing levels. Many weeks will go by before the first exploration well is finally spudded, and more time will pass before the results are fully evaluated. But the air of anticipation in the Dakar office is palpable nonetheless.

“Unocal's fundamental mission is to go out and find oil, and it's exciting to be on the front lines of that endeavor,” Sulkoske says. “A project like this requires a real team effort, and we have a small enough team that everyone feels a part of it.”

“All of us realize that, in the end, our wells may come in dry. That's the nature of this game. But we wouldn't be here unless we were hopeful of making a major discovery. And if we do succeed, it will be very satisfying to have been involved since Day One.”

By 7 p.m., Sulkoske and Stahmer are seated on either side of a paper-strewn desk. The rest of the office staff has long since gone home. With sleeves rolled up and ties loosened, the pair is reviewing some resumes (they look good), discussing the computer situation (their arrival has been delayed), and trying to decipher the instructions that came with a new fax machine (they are printed in French).

“Let's call it a day,” Sulkoske declares, rising from his chair. The two head out to the office reception area, where they stop to stare up at the wall. During the day, someone has installed the new Unocal 76 logo.

“Looks pretty good, doesn't it?” Stahmer says. T.S. 76

*Editor's note: Since this story was reported, Paul Ware has been reassigned to Unocal U.K.'s Sunbury office.*



**“All of us realize that our wells may come in dry. But we wouldn't be here unless we were hopeful of making a major discovery.”**



# LAYING A FOUNDATION FOR SUCCESS



Ousmane Ndiaye

*During his visit to Senegal for Seventy Six, former editor Tim Smight interviewed Ousmane Ndiaye, director and general manager of PetroSen, that nation's state-owned oil company. An engineer by training, Ndiaye is an engaging man who is fluent in both French and English. He has high hopes for the Unocal/PetroSen exploration venture.*

**In recent years, Senegal has become much more aggressive in trying to forge partnerships with international oil companies such as Unocal. Why is this strategy being pursued?**

It has been an evolutionary process. When PetroSen was formed in 1981, Senegal's energy industry was still in its infancy. We had a low level of petroleum development, mostly natural gas. But our energy potential was really unknown and untapped, because very little exploration had taken place here.

In 1987, we conducted a major seismic survey in cooperation with Petro Canada. The results were highly encouraging. We realized that to further explore our energy potential—and to develop it—we would need to enlist partners who had the experience, the resources, and the technological expertise to help us.

So we began a concerted effort to generate interest, among international oil companies, in Senegal's oil and gas potential. We held promotions and attended petroleum conferences in London, Houston, Calgary and other cities. At these events, we made presentations about our basin, and offered to make some of our data available to interested parties. We received an excellent response.

**How was Unocal chosen as the first co-venturer?**

Well, you might say we chose each other. Unocal was one of the first companies to express serious interest in Senegal. And as we learned about Unocal, we became very impressed with the company—its people, its technical abilities, and its successful operations around the world.

Unocal has demonstrated that it regards international ventures as projects which must benefit both parties to succeed. In Thailand and Indonesia, for example, the company has followed through on a commitment to hire, train and promote workers from the host country. That impressed us very much.

Our negotiations went exceptionally well. It was clear that the people who came here from Unocal had the authority to make commitments. We had serious negotiations that were open and straightforward. Any successful partnership must have a foundation of credibility, respect, friendship and trust. We established that foundation early on—and I must say that, in my experience, this is not very common.

**You have visited Unocal Center in Los Angeles, as well as several of the company's operations. What personal impressions have you drawn from those visits?**

Two things stand out. First, the extent of Unocal's technical capabilities and accomplishments. Our tours of the Fred L. Hartley Research Center in Brea, and the Thailand natural gas platforms, gave us a very good indication of the company's focus on technology.

Second, the quality of the people. Everyone we have met, from Mr. Stegemeier on down, has been open, honest and friendly with us. These two things—technical support, and a relationship based on trust and mutual understanding—are exactly what Senegal needs to help us develop our energy potential.

**What are your goals for Senegal's petroleum industry?**

At the present, we are importing oil for our transportation needs, for power generation, and for other uses. If we can find and produce enough oil to fill those needs, this would greatly improve the nation's balance of trade.

We also want to establish a petroleum industry in Senegal that will provide training and career opportunities for geologists, engineers and other technical specialists. These are the primary goals. But naturally, we hope for something more. A major discovery—one that would allow us to become an oil exporter—would truly transform the nation's economy.

I am a realist, however, and I understand that there is a large element of risk in this business. But I am also a very positive man. I am confident that we will find something significant, and that Unocal and PetroSen will share in a major success. Our initial exploration contract is for three years, but I believe that's just the seed. My hope is that this association will grow into a highly successful, long-term relationship. ☞



---

# Just One Of The Neighbors

---

There's something decidedly unique about the Midtown Shopping Center in Los Angeles—something that's not advertised in sale circulars. In fact, even the most observant and discriminating of shoppers would be hard pressed to identify anything unusual. But what sets this strip mall apart from dozens of others in the city is the activity underway at the west end of its parking lot.

There, a nondescript concrete-block wall segregates an acre patch of asphalt, a single-story building and an array of criss-crossing pipelines from the rest of the shopping center parking area. Hard-hatted workmen mill about the walled-in space, occasionally gesturing toward a steel derrick that telescopes, in perpendicular fashion, from the bed of a large diesel truck.

It's not low prices, product selection, nor post-holiday clearance sales that bring Unocal's Russell Speer to the Midtown Shopping Center on this January afternoon. In fact, there's nothing on the stores' shelves that captures his interest nearly as much as what lies in sandstone thousands of feet beneath them—a sizable petroleum cache known as the Las Cienegas Field.

Consistent with his role as the field's production foreman, Speer has come to the shopping center production site on this particular day to supervise the workover of an old well. "Since the formation was discovered in the early 1960s,

Unocal has produced almost 50 million barrels of crude oil from the Las Cienegas Field," he says.

"Even though we've maintained a presence at this site for 30 years, I can confidently say that very few passersby have any idea that we are pumping oil from behind these walls," Speer adds as he watches workers guide a stand of tubing into the well. "Most people just don't expect an oil field to have a city street address."

But Unocal's shopping center site, on West Pico Boulevard, is not the only Las Cienegas production facility with street-number designation. Two additional installations stand amid densely populated neighborhoods less than three-and-one-half miles to the southeast, while a fourth camouflaged site is but a stone's throw from the University of Southern California campus.

The amoeba-shaped Las Cienegas Field cuts a 330-acre



*Above, a drilling crew repairs an existing well at Unocal's Jefferson Boulevard production site, a residential area less than one-half mile from the University of Southern California campus. Opposite page bottom, business continues as usual at the Midtown Shopping Center despite temporary drilling operations. With the exception of the drilling derrick's upper portions, all equipment is shielded from the view of nearby shoppers by a nine-foot wall.*



swath far beneath the crowded streets of Southwest Los Angeles. Fifty producing wells, slanting out from their respective production sites, penetrate a variety of petroleum-bearing zones that range in depth from 1,100 to 6,000 feet. All told, Speer says, the four sites currently yield nearly 1,500 barrels of oil each day.

Though all permanent equipment at the four Unocal facilities is hidden from street view by the tall, landscaped walls which form a perimeter of privacy around each site, area residents do occasionally catch glimpses of portable drilling rigs that, when upright, tower above the nine-foot walls.

“In recent years, most of the activity at these sites has focused on workover of existing wells,” Speer explains. “However, we are planning to drill some new wells at two of our Las Cienegas sites sometime this spring.

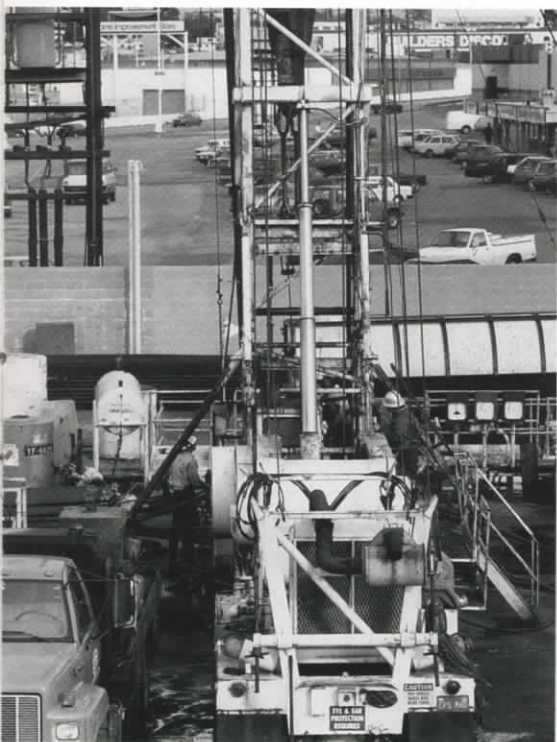
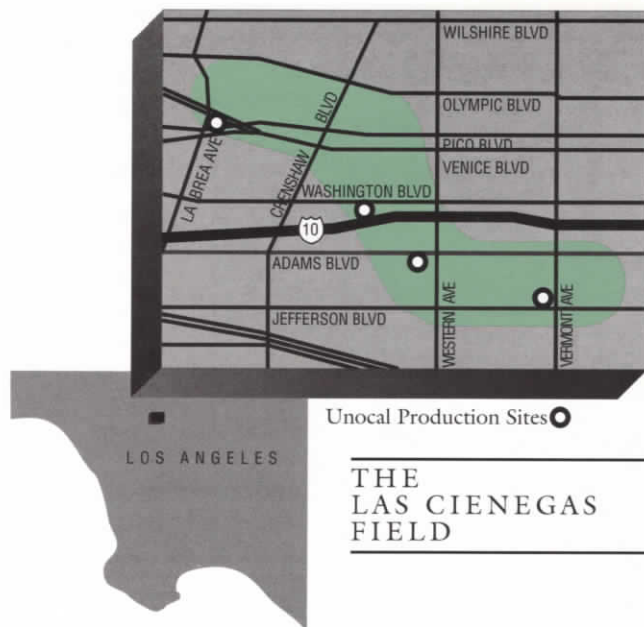
“Even though drilling rigs are larger and bit more imposing than the typical workover rig, we will still take all the steps necessary—like soundproofing, for instance—to ensure that our drilling operations do not disturb nearby residents,” he continues. “Unocal has always gone to considerable lengths to be a good neighbor.”

But Unocal’s effort to remain an inconspicuous neighbor does not stop once the drilling rigs have been dismantled and removed from production sites. Progressive Cavity Pumps, which are screw-like devices that rotate downhole to draw oil to the surface, have also been installed in many of the field’s wells. Such pumps are becoming renowned throughout the oil industry for their efficiency and quiet operation.

Though crude production has leveled off from its peak, Speer estimates that the Las Cienegas Field will continue to yield oil for as many as two decades into the future. By maintaining its amicable

and unobtrusive relationship with residents, Unocal expects to remain a fixture in Southwest Los Angeles for some years to come.

The poet Robert Frost once wrote that good fences make good neighbors. True as this assertion may be, Russell Speer can tell you—based on his own experience with the Las Cienegas Field—that it helps to be quiet and considerate as well. *M.B.* 76



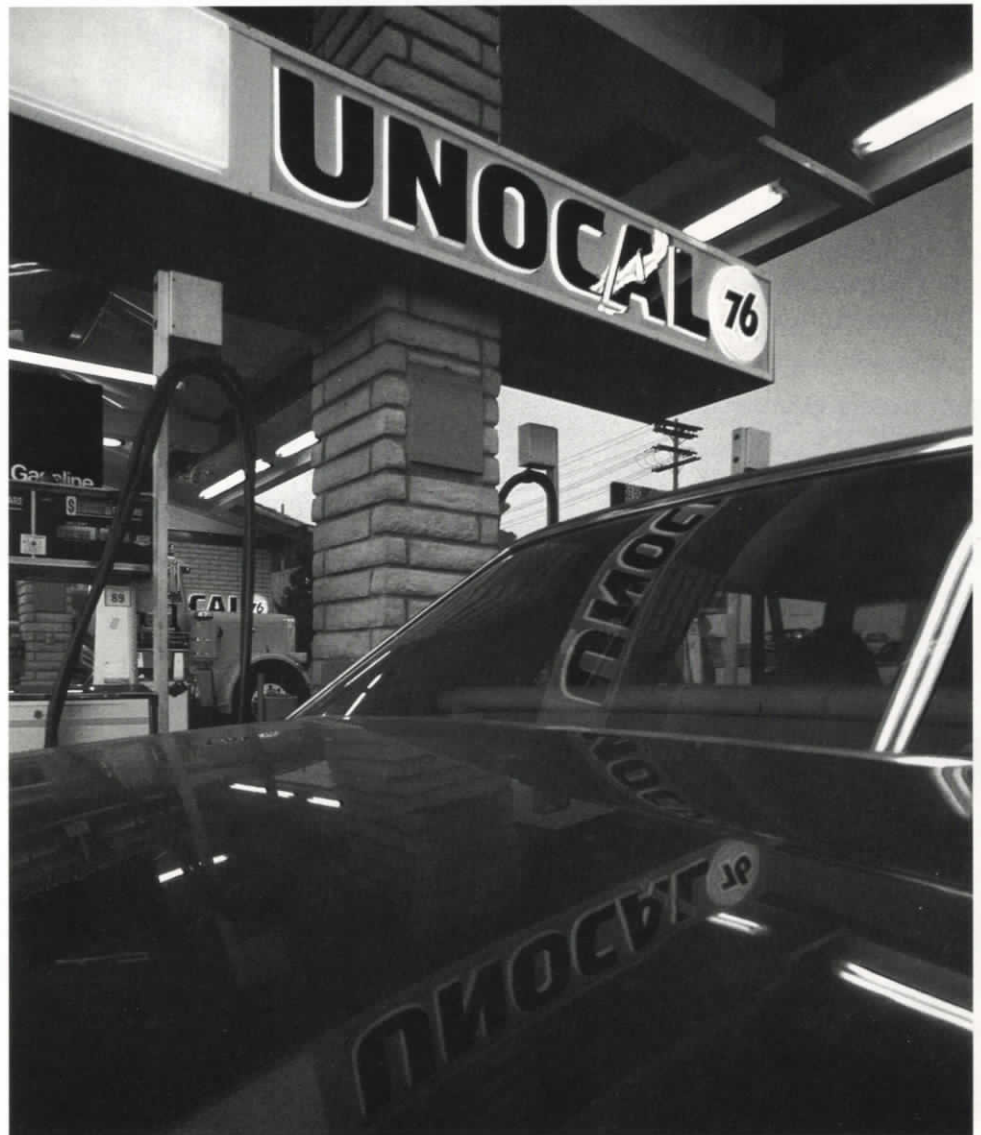
# REORGANIZED REFOCUSED AND READY TO ROLL

**A**nyone in the business of selling gasoline, lubricants or other refined petroleum products can tell you that 1991 was a challenging year indeed. In the western United States, shock waves from economic recession, intense sales competition and war in the Persian Gulf all combined last year to pinch the profit margins of gasoline producers, marketers and service station dealers alike.

Unocal markets a full slate of automotive products, and sells bulk quantities of lubes and fuels to commercial users. But it is retail gasoline sales—through some 2,900 branded outlets—that contribute most to the profitability of the company's downstream operations.

“Clearly, gasoline sales drive our market. My primary mission is to profitably sell Unocal’s refinery production, and that amounts to nearly 1.8 billion gallons of gasoline per year,” says Clint Mercer, general manager for the Retail Business Unit of Unocal’s Marketing arm. “To accomplish this, the company needs to maintain a supportive relationship with our network of independent dealers — because if they don’t succeed, Unocal’s marketing effort doesn’t succeed.”

Unocal has long been a leading supplier of fuels, lubricants and automotive products to consumers on the West Coast, but the company—like its dealers—has never been immune to volatility in the marketplace. Though last year’s depressed profit picture can be blamed, to a large degree, on temporary distortions of supply, demand and pricing, other long-term factors may have played a significant role.





“The gasoline marketplace changed drastically during the 1980s,” says Fielding Walker, vice president of Marketing. “We witnessed tremendous growth in the number of self-service outlets, increased price competition and, by 1991, a significant drop in customer demand.”

“All of those things—along with changing market demographics—indicated some substantially altered consumer behaviors,” he explains. “And when your market changes, you also need to change if you intend to remain successful.”

Throughout the first half of 1991, Marketing personnel took a long, hard look at their changing business climate—including the company’s niche within it—and embarked decisively on a path of re-evaluation and reform. High on the list of priorities was reconfiguration of Unocal’s established marketing structure to an organizational framework better equipped to deal with a changed marketplace.



**B**y August of 1991, Marketing had shed the bureaucracy of its old geographic-based structure in preference to a streamlined chain-of-command

which flows through three, centralized business units: Commercial, Retail and Automotive Products. The Retail Business Unit focuses on gasoline sales to consumers at-large. The Commercial Unit is concerned with high-volume product sales to distributors, jobbers and end users ranging from small manufacturing firms to interstate freight companies. The Automotive Products Unit is primarily responsible for marketing Unocal’s line of tires, batteries and related accessories.

*Below left, Don Kollmansberger, Fielding Walker and Clint Mercer discuss Unocal’s revamped retail marketing strategy.*



## STRAIGHT TALK

A conversation with Fielding Walker, vice president of Marketing.

**Q.**

**Last summer, Unocal overhauled the organizational hierarchy of its Marketing group. What made this change necessary?**

**A.**

There were a variety of factors that made it clear to the company that decisive action needed to be taken.

First of all, we realized that our marketing strategy required re-examination. The gasoline marketplace changed drastically during the 1980s. We witnessed tremendous growth in the number of self-service outlets, increased price competition and, by 1991, a significant drop in customer demand. Increasingly, it became clear to company management that market conditions had evolved to a point where we needed to reassess our organizational structure if we hoped to adapt to the market’s new realities.

That’s not to say that the company’s established marketing strategy was inherently flawed or inadequate. However, the old organization was built at a time when consumer preferences were very different from what they are today. Because Unocal’s marketing structure and dealer facilities had evolved with an emphasis on full-service, credit purchases and automotive repair, the organization’s structure—in and of itself—made it difficult for us to substantially change our basic ways of doing business.





**Q.**  
**You've mentioned that consumer preferences have evolved substantially in recent years. But what characteristics of Unocal's marketing effort do consumers continue to value?**

**A.**  
Traditionally, Unocal has been positioned in the "quality niche" of our retail markets. We've always attracted—and continue to attract—the customer who values premium products and friendly service.

We've also developed a very loyal segment of customers who feel that credit is an important factor in their buying decisions. In fact, more than half of our retail customers use a credit card to make their purchases.

Consumers believe that Unocal is an environmentally conscious and responsible company, as well. That perception is based on our track record—for example, Unocal was the first company in the West to phase out leaded gasoline and instead offer unleaded products exclusively.

Unocal will continue to refine and market the highest quality gasolines in an environmentally acceptable manner. We will also maintain our high standards in the service and credit segments of our business.

"Under the former geographic-based organization, our automotive products business was just one part of our overall offering," says Don Kollmansberger, general manager of the Automotive Products Unit. "This meant that the regional manager had to divide his attention between the retail, commercial and automotive products segments of his organization.

"The new framework allows us to more efficiently concentrate on specific areas of our marketing strategy," Kollmansberger explains. "By making automotive products its own self-contained unit, we've narrowed the responsibilities of our salespeople. This singular focus allows us to devote all of our energy toward optimizing profit opportunities within the exclusive realm of automotive products."

"As with the Retail and Automotive Products units, the new commercial marketing structure eliminated a layer of middle management and pushed decision-making responsibilities further down into the organization," says Tim Tomasso, general manager of the Commercial Business Unit.

"That responsibility gives territory managers and industrial sales representatives greater authority about decisions such as pricing, and also allows them to better accommodate their customers' needs without having to go through several organizational channels for approval."

The new organization, adds Mercer, also places a high premium on communication—whether it be between the company and its service station dealers, or between marketing personnel in any of the three new business units. "The idea is to enhance our relationships with dealers, marketers and, ultimately, with consumers," Mercer says. "We expect that this philosophy will make our organization much more responsive to the dictates of the marketplace."

It is the new emphasis on intra-organizational communication that brings Mercer, Tomasso and Kollmansberger to Fielding Walker's downtown Los Angeles office on a rainy February night. Walker listens intently as his three top lieutenants report the effects of several marketing initiatives implemented so far.



*Above and right, various views of product storage tanks at Unocal's Los Angeles Terminal. Typically, the company's independent jobbers and distributors take bulk delivery of lubricants, or other refined products, for subsequent sale to end users ranging from small manufacturing firms to interstate trucking companies.*





**T**omasso outlines key elements of the Commercial Unit's new three-year marketing plan. Kollmansberger reviews positive dealer reactions to a recent series of company-sponsored meetings on the additional profit potential available in automotive product sales.

"With gasoline margins so tight, our dealers are beginning to realize that they need to enhance other profit opportunities already in place within their businesses," Kollmansberger explains. "That translates to a greater sales emphasis on batteries, tires and all the other products they store in their back rooms."

Addressing the retail arena, Mercer relates the progress of Unocal's service station painting and maintenance program. Already, he says, the facelift efforts have begun to promote a more consistent appearance among Unocal's thousands of service station outlets. Marketing research indicates that greater consistency in dealer image, product pricing and business hours will directly contribute to enhanced gasoline sales, Mercer adds.

From Walker's 13th floor window, bumper-to-bumper columns of freeway vehicle traffic can be seen streaming from the downtown area. Fittingly, much of the discussion underway in Walker's office centers around ways of winning the loyalty of California's many gasoline-hungry commuters.

"On the retail front, we've identified 47 different attributes—including convenience, location and level of service—that strongly affect the consumer's buying decision," Walker says. "Though price is a dominant consideration, our research indicates that consumers actually value a mix of these characteristics in the service stations they patronize."

"Our dealers already offer key attributes such as friendly service and high-quality products," he continues. "And more than 50 percent of our retail customers use a credit card to make their purchases, so we've already captured a very loyal segment of customers who feel that credit is an important factor in their buying decisions."



**Q.**

**You've identified some of Unocal's long-standing marketing strengths. What aspects of our retail strategy can be improved?**

**A.**

A variety of service station attributes influence the customer's buying decisions. During the course of the last 10 years, for example, convenience has become particularly important to gasoline consumers. And that's an area we need to work on a bit.

"Convenience," per se, doesn't translate to a station on every street corner. Actually, convenience is an overall consumer impression of several factors. Included among these are hours of operation, pump availability and service delivery.

Another aspect of convenience involves the consistency of our dealer network. To have an effective marketing system, we need to work closely with our dealers—in a number of areas—so that the expectations of Unocal customers can be met, or exceeded, regardless of which stations they patronize.

**Q.**

**Because they directly interact with retail and commercial customers, our service station dealers and independent marketers play a crucial role in the success of Unocal's marketing operations. What has been done thus far to strengthen the company's relationship with these people?**

**A.**

There's no doubt that, within our marketing network, nothing is more important than how our dealer—or marketer—manages his, or her, business. And some of our dealers could improve their efficiency and profitability if they'd objectively reassess the way they run their affairs.



To help them do this, our marketing people need to be very skilled in their business counseling—and very thorough. So, we've been conducting new training programs for our marketing field representatives, and we've redefined their job responsibilities to remove certain administrative tasks that used to consume an inordinate amount of their time. In addition, we've installed toll-free, 800 phone lines to improve our service to our dealers. Today, they can call right in—around the clock—to receive immediate assistance.

Also, we have formed new Dealer Councils as a means for our dealers to bring their concerns to Unocal. So far, these councils have functioned quite well. The company is learning things from these groups that don't normally come up through the filters of a large bureaucratic organization.

On the commercial side, our distributors were somewhat neglected under the old geographic-based organization. They felt like second-class citizens because most of our marketing communications and business meetings focused on the retail channel.

Admittedly, we weren't optimizing the potential of our distributor channel. But that has changed significantly since we instituted commercial marketing as its own independent business unit.

If you were to speak with dealers and marketers regarding Unocal's responsiveness since the reorganization, I think you'd hear some very positive reactions. They can sense that we're interested in listening to their concerns and that their opinions are valued. I think these people have some very good feelings for the way Unocal has begun to communicate with them.

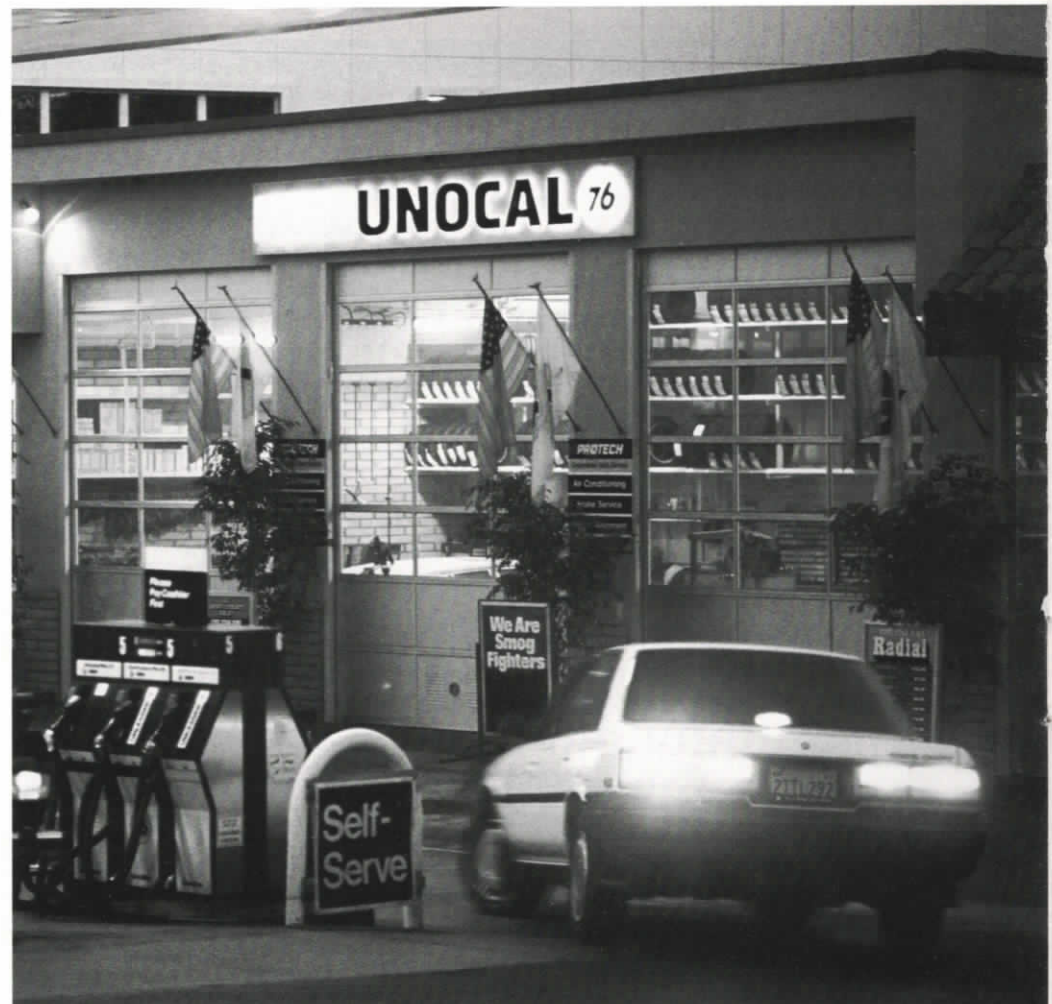
"All of these things represent traditional strengths in our marketing strategy, but our consumer research tells us that we've got to improve in other areas—particularly in matters of convenience and pricing consistency," Walker explains. "If we can do that, we will certainly increase our profitability and augment our existing competitive advantages."

Unocal has long had a marketing presence that stretches from the East Coast to Hawaii. But when it comes to effectively pressing "existing competitive advantages," company marketing strategists believe that there's truly no place like home. And for Unocal—an oil corporation with California roots—home is the West Coast.

"Historically speaking," Walker says, "the West has been the most profitable region of the country for the U.S. refining and marketing industry."

**B**ut, he adds, "Much of that profitability has been driven by steady demand growth on the West Coast, and by the high costs of bringing in products from refineries located east of the Rocky Mountains."

Because Unocal owns and operates three California refineries—in Los Angeles, Santa Maria and San Francisco—product distribution throughout the West Coast market area is efficient and logistically cost-effective. Also, the company's December, 1991 acquisition of former Shell Oil refinery facilities in Carson, California—which include a gas oil hydrotreater, coker and 125,000-barrel per day crude unit—will allow Unocal to produce greater proportions of high-value products from lower-quality crudes. (See related story on page 1.)





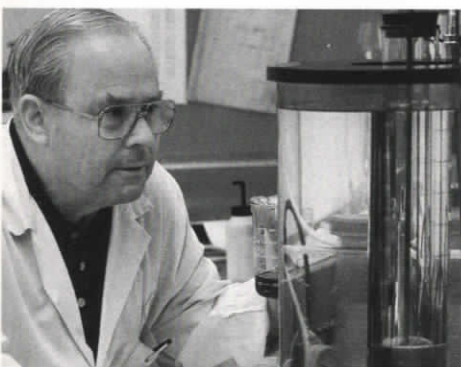
“Demand growth in the West has been much more robust than in other parts of the country and, although that demand is expected to level off in the future, we believe the region will remain one of the strongest markets in the United States,” Walker explains. “That’s why we’ve decided to concentrate our efforts in the West Coast market.”

With this strategy in mind, the marketing department has continued a drive toward geographic consolidation that first emerged in 1989, when Unocal transferred its ownership of the Chicago refinery and related Midwest marketing assets to a new organization called The UNO-VEN Company. UNO-VEN is a joint venture between Unocal and Petroleos de Venezuela S.A., Venezuela’s national petroleum company.

**B**y the end of 1991, Unocal was seeking a buyer for its Atlanta-based southeastern petroleum products marketing and distribution operations, and was in final negotiations to sell its nationwide Auto/Truckstop network.

“We already have strong brand awareness on the West Coast—particularly among California’s consumers—and we have a healthy market share,” says Walker. “So, with our restructured organization, improved refining capabilities and more tightly focused marketing effort, we feel confident that Unocal is well positioned to profit on the West Coast.”

The coming months should indicate to what extent the company’s refocused marketing strategy will succeed. Regardless of short-term results, the new organizational groundwork that’s been laid promises to leave Unocal, its dealers and its marketers poised for improved productivity and increased profitability during the years ahead. *M.B.* 76



*Left, a technician tests the performance of a lubricant sample. Above, a fully loaded tanker truck sets out from the L.A. Terminal on a delivery run.*

**Q.**

**From a marketing standpoint, Unocal has done much in recent months to improve its organizational effectiveness. How do you expect these strategic moves to influence the company's profitability during the years ahead?**

**A.**

Today, Unocal's marketing operations are more focused than ever on our mission. And that, specifically, is to satisfy customers and increase shareholder value.

In a nutshell, the changes we made have allowed us to become more responsive to our customers and to the marketplace. We are doing a better job of controlling our costs and, very importantly, we are more consistent in terms of our communications with dealers and distributors.

All of these changes are designed to make Unocal more effective—a better player in the game, so to speak. And we are already beginning to see the benefits of some of these improvements. Our recent organizational actions—coupled with the enhanced refining capabilities that came with Unocal's acquisition of the Shell facility—should enable the Refining & Marketing Division to produce some very positive bottom-line results now and into the future. 76



---

# SERVING DOUBLE DUTY

---

Oil platforms are a common sight offshore Louisiana. Literally thousands of them have been installed along the coast during the past half century. But even though the offshore structures are designed as temporary petroleum producing facilities, an alliance of Louisiana anglers, environmentalists and state policymakers would be glad to see some platforms become permanent fixtures in the Gulf of Mexico. In fact, employees of Unocal's Louisiana Region have already taken steps to indulge the wishes of this group.

Fishermen who ply Louisiana's coastal waters for their livelihood have long recognized that offshore platforms support more than natural gas and oil production. Indeed, beneath almost any platform in the Gulf lies a microcosm of marine life.

Below the water's surface, schools of red snapper and other fish species dart between the submerged lattice of steel support beams that extend to the seabed. Fin fish are drawn to platforms by the presence of barnacles, mollusks and other shellfish that cling in bunches to the underwater portions of the platform jacket.

Typically, once a platform is anchored in the sea floor, it quickly attracts a rich variety of aquatic life. By virtue of their ongoing presence, these marine organisms transform the offshore structure into an artificial reef capable of filling an important niche in the undersea food chain.

Last November, employees of Unocal's Louisiana Region made one "reef" permanent by purposely sinking a non-producing company platform—located 150 miles from shore in the West Cameron block—to the depths of Davy Jones' locker.

The company took this innovative action under the auspices of Louisiana's Artificial Reef Initiative. Developed in 1986, the program allows oil companies to submerge old, non-producing platforms in nine designated areas off the state's coast. Formerly, federal and state laws required that the companies tow their obsolete platforms back to shore—an expensive process that was often disruptive to sea life around the structures.

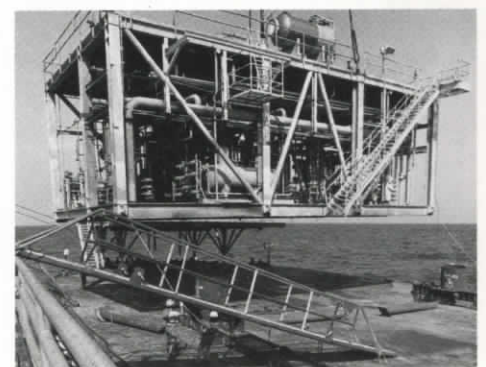
"The reef program allowed us to remove a non-producing platform and help the marine environment at the same time," says Clyde Landry, district production manager with Unocal's Louisiana Region. "We've found that it's often more efficient and economic to contribute platforms to this program instead of bringing them ashore. That's another nice bonus."

Traditionally, when petroleum reserves were depleted in an offshore reservoir, the field's operator would plug, or "abandon," the obsolete wells and remove the platform jacket in an effort to return the surrounding environment to its natural condition. But state regulators and marine biologists soon realized that removal of the offshore structures was, to their surprise, detrimental to the Gulf ecosystem.

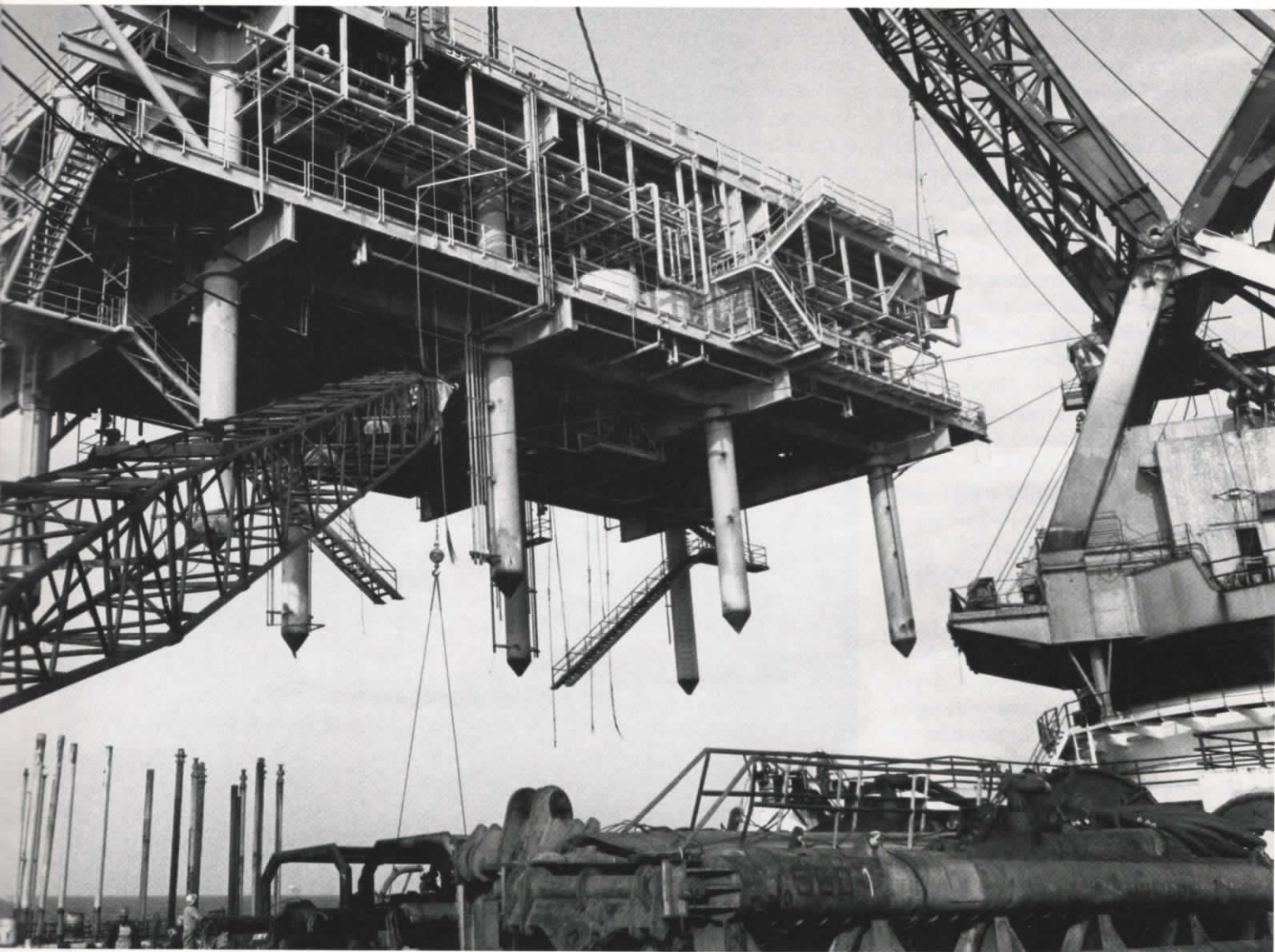
"There are very few natural reefs off the Louisiana coast, but offshore platforms in the Gulf of Mexico have filled the void by acting as artificial habitats for marine animals," says Rick Kasparzak of the Louisiana Department of Wildlife and Fisheries (DWF). "If those structures were not in place, the Gulf wouldn't be capable of supporting the kind of reef fish we've recently begun to see in large numbers."

A study conducted by Louisiana State University estimated that if oil companies continue to follow federal and state regulations governing offshore well abandonment, more than 40 percent of the existing platforms would be removed from Gulf waters by the year 2000. And when the steel "reefs" go, so will many of the fish.

"Louisiana is known as the 'sportsman's paradise,'" Kasparzak says. "Recreational fishing attracts a large number of tourists each year, and our commercial fishing industry ranks second only to Alaska's in the number of fin fish processed annually. It's difficult to overstate how important a thriving marine population is to Louisiana's economy."







*The complicated task of preparing Unocal's West Cameron Block 595 platform for its new role as a permanent reef called for a well-coordinated effort. Far left (middle), a diver prepares to check the underwater progress of separating the structure from the seabed. Above, bottom left and left, cranes remove the platform deck, so that the production facilities can be salvaged intact and reused.*





But important as the structures are in maintaining Louisiana's fish population, not just any offshore platform is accepted into the state's artificial reef program. To obtain approval from the Department of Wildlife and Fisheries, each participating company must certify its platform to be free of hydrocarbons and hazardous wastes. The DWF evaluates each candidate on a case-by-case basis.

Once Unocal received DWF approval for submersion of its West Cameron Block 595 platform, the company's Louisiana Region employees began the sizable task of severing the platform jacket from its foundations in the sea floor.

"The process may sound simple, but the sheer number of ocean-floor connections—eight supporting piles and 10 wells—called for a well-coordinated and carefully planned effort," says Landry. "And because Unocal intended to save them, the platform's production facilities and upper deck had to be removed with a large crane before the jacket could be sunk."

"The whole operation took 37 days," adds Arlen Schmalz, the project's engineer. "Once good weather conditions prevailed, we salvaged all reusable equipment and began plugging the wells. Then we cut the well casings and jacket legs below the mudline of the ocean floor."

When this preliminary work had been completed, cables from a nearby derrick barge were connected to the 250-foot-tall jacket so that the structure could be toppled onto its side. Offshore operator Elbert Repp witnessed the platform's slow farewell to the surface world.

"Once the jacket began to tip over, about 10 minutes went by before it finally sank out of sight. The only thing we could see from the barge was all the air bubbles that churned up to the surface," Repp recounts. "I expected that the platform would be more difficult to submerge, but it just lay over like a big baby."

Though the West Cameron 595 platform is forever gone from the surface of the Gulf, a Unocal production platform in West Cameron Block 280—about 50 miles away—still attracts attention above the waterline, particularly during the annual onset of autumn.

Each October, the Block 280 platform plays host to an unusual group of orange-hued visitors. Millions of Monarch butterflies, intent upon escaping the North American winter, journey thousands of miles southward to the more temperate climes of Central America. Fluttering across the Gulf on their marathon flight to Mexico, the tiring Monarchs often descend upon offshore platforms, usually around dusk. Typically, the fragile insects rest for a few hours, and promptly depart on the next leg of their trek at daybreak.

For years, Unocal workers stationed offshore Louisiana have traded stories about this curious phenomenon of nature, but not until recently were such tales disseminated among the scientific community.

In summer of 1990, the *Lepidopterists' Society News*—a newsletter for butterfly enthusiasts—reported masses of Monarch butterflies landing in colorful swarms on an undisclosed platform off the Louisiana coast. Similar accounts soon caught the attention of Gary N. Ross, a Baton Rouge-based entomologist who has specialized in butterfly studies since 1967.

"I was amazed to hear about this phenomenon, because we've long believed that the butterflies followed the Louisiana and Texas coastlines on their way back to Mexico," says Ross. "Documented confirmation that Monarchs fly *across* the Gulf would be of extraordinary scientific value."

Indeed, such evidence could support the heretofore unproven theory that offshore structures have actually influenced the migratory patterns of the insects—in a sense, providing them with a short cut. Previously, only the Monarchs' Mexico destination had been known for certain.

Following several days of inquiry, Ross learned that the migrating Monarchs regularly landed on Unocal's Platform A production facility, in West Cameron Block 280. In fall of 1991, Ross asked for—and received—the company's okay to study the itinerant insects aboard the offshore structure. As it turns out, Ross' offshore expedition gave the lepidopteran research community its first on-site study of the Monarchs' surprising behavior.

Having heard the butterfly anecdotes of Unocal employees, Ross expected to see legions of the insects arriving on the platform. Instead, the Monarchs began to arrive in small groups over the space of several weeks, and on more than 20 different platforms near West Cameron 280.



Top, entomologist Gary N. Ross tags a Monarch butterfly on Unocal's Platform A production facility in West Cameron Block 280. Above, barnacles, mollusks and other shellfish adhere to the submerged legs of an offshore platform, in effect transforming the steel structure into an ideal habitat for many fish species.



*Right, a Monarch alights on the railings of the West Cameron 280 platform. Below, a derrick barge lifts the production deck from the West Cameron 595 platform jacket.*



An unexpected series of passing cold fronts were singled out as the culprit behind the butterflies spotty showing this year. "The chilly weather fragmented the migration, and we only saw several dozen Monarchs at a time," says Ross. "They just straggled through."

Though the numbers were somewhat disappointing, Ross' study did prove that Monarchs fly over the Gulf, that they often travel after nightfall (which was previously unknown), and that they tend to follow a specific route through the area. Until Ross collected and analyzed his field data, none of these observations had been confirmed.

"Monarch butterflies were migrating between the United States and Mexico long before offshore platforms operated in the Gulf. But since they were installed, the platforms—and, in particular, their high-intensity lighting systems—probably began to attract the Monarchs away from the coastline and out to the open sea," Ross theorizes. "From a butterfly's viewpoint above the vast Gulf, an oil platform would be an ideal place to land for a short rest."

Prior to Ross' field study, entomologists had little success in tracking the Monarchs' migratory route. However, by painstakingly charting which platforms the butterflies visited last fall, Ross was able to determine that the insects' journey across the Gulf was not random, but instead followed a definite flight path toward the northeastern coast of Mexico.

"It's incredible that an insect as fragile as a butterfly can accurately navigate distances as great as 2,000 miles," says Ross. "Their migration is even more astonishing, considering that the butterflies have never made the journey before—a Monarch migrates only once in its lifetime."

Regardless of how many butterflies undertake the southward migration next year, Unocal platforms offshore Louisiana stand ready as open-sea oases for them.

One need only look to the autumn sky, or peer beneath the salt-water waves, to see evidence that the company's offshore structures support more than just petroleum production. Chalk it up to serendipity if you like, but the fact remains that Unocal's platforms in the Gulf of Mexico support the environment as well. 76



# ON THE JOB



Barbara Ehrick, a technical aide specializing in lubricants research for Unocal's Science & Technology Division, could be described as something of a Sherlock Holmes in the laboratory setting.

Eschewing the magnifying glass and deerstalker hat for a microscope and laboratory smock, Ehrick routinely applies the deductive aptitude and observational skills of a detective during the course of her various scientific investigations. And since she joined the company's research staff more than 18 years ago, Ehrick has helped solve literally thousands of lubricant-and fuel-related mysteries for Unocal customers.

In charge of the Technical Service Laboratory at the Fred L. Hartley Research Center in Brea, California, Ehrick analyzes fuel and oil samples taken from malfunctioning vehicles, or other petroleum-powered machinery, in an effort to determine the cause of breakdown. Typically, such samples are submitted to the company's Marketing Department field engineers by actual retail and commercial users of Unocal's branded products.

"Mechanical systems don't fail because the lubricant is defective," Ehrick explains. "If the lubricant plays any role in the problem at all, then it is either contaminated, overstressed or simply the wrong product for that particular application.

"Here at the Technical Service Laboratory we chemically analyze samples of used oil, engine deposits and residues found in filters. We frequently conduct metallurgical analyses of failed mechanical components, as well," she continues. "Generally speaking, we run whatever tests necessary to determine the true cause of failure. We don't just come up with a plausible theory, we insist on an accurate accounting of the facts."

This pursuit of the facts is a never-ending task for Ehrick. And despite a heavy workload, the two-person staff of the Technical Services Lab generates about 500 reports each year.

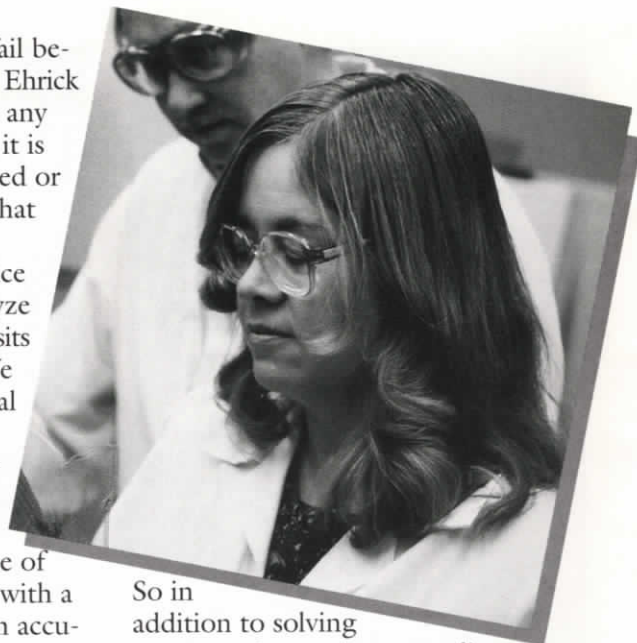
"We stay pretty busy, but we also get to see the results of our work—and I know our contribution is appreciated, especially by our customers," Ehrick says. "I get real satisfaction from that."

But pleasing customers is icing on the cake for Ehrick. Like a mystery story detective, she revels in the opportunity to solve a vexing puzzle. Perhaps that's one of the reasons why Ehrick's enthusiasm for her work has never flagged.

"There's nothing particularly glamorous about the kind of research I do," she says with a smile, "but I have never been less than stimulated by the problem-solving nature of my job. I really enjoy the challenge."

Happily, for Unocal and its customers, Ehrick has made a habit of meeting such challenges. In many ways, her research efforts help ensure that Unocal products continue to meet the company's high standards of quality.

"Together, Unocal's technical service groups function as a kind of window on the real world," Ehrick explains. "For example, my laboratory investigations help the company see just how well our products perform under everyday conditions. And if there's a problem, I'm among the first to see it."



So in addition to solving customers' sometimes puzzling mechanical problems, researchers with Unocal's Technical Service Lab provide the company with an extra check on the performance of its lubes and fuels. And in the business world, that kind of conscientiousness often pays dividends in the form of consumer loyalty.

It's no mystery then, that exceptional product performance combined with customer service have always comprised a winning equation for Unocal.

Nor does it take a super sleuth to realize that the efforts of technical experts, like Barbara Ehrick, reinforce Unocal's time-honored commitment to provide its customers with some of the highest quality products and services available anywhere. 76





# UNOCAL 76

**CORPORATE**

- 25 YEARS Joseph E. Perkins, Los Angeles, Ca.  
Laura E. Ross-Elder, Los Angeles, Ca.
- 20 YEARS Barbara J. Lyle, Los Angeles, Ca.  
Anthony G. Melas, Los Angeles, Ca.  
Matthew D. Norcia, Los Angeles, Ca.  
Kendall B. Smith, Los Angeles, Ca.
- 15 YEARS Donna L. Wong, Los Angeles, Ca.
- 10 YEARS Irene Adams, Los Angeles, Ca.  
Renon M. Baker, Los Angeles, Ca.  
Benford B. Ball, Coalinga, Ca.  
Milagros R. Barcebal, Los Angeles, Ca.  
Larry J. Bellani, San Francisco Refinery  
I. Rancea Berndt, Los Angeles, Ca.  
Mike K. Davis, Jr., Santa Fe Springs, Ca.  
Scott G. Fager, Los Angeles, Ca.  
Scott A. Harter, Anaheim, Ca.  
Alfred R. Herzing, Anaheim, Ca.  
Laurence W. Hole, Los Angeles, Ca.  
Michael A. Lovett, Los Angeles, Ca.  
Donald M. Molenaar, Los Angeles, Ca.  
Wayne N. Walker, Anaheim, Ca.  
Patricia A. Winmon, Los Angeles, Ca.  
Catherine Wright, Los Angeles, Ca.

**REAL ESTATE**

- 15 YEARS Gary W. Parks, Parachute, Co.  
10 YEARS Margarita Garza, Los Angeles, Ca.

**SCIENCE & TECHNOLOGY**

- 30 YEARS Donald M. Fenton, Brea, Ca.
- 25 YEARS Rick V. Bertram, Brea, Ca.
- 20 YEARS John M. Bickel, Brea, Ca.  
Carl J. Cron, Brea, Ca.  
Ronald J. Lukasiewicz, Brea, Ca.  
Charles E. Schoenfeld, Brea, Ca.
- 15 YEARS Bryce M. Bahner, Brea, Ca.  
James A. Green, Brea, Ca.  
Richard E. Gutman, Brea, Ca.  
Jeffery W. Koepke, Brea, Ca.  
Steven R. Ross, Brea, Ca.
- 10 YEARS Charles D. Aaron, Brea, Ca.  
Ricardo Armendariz, Brea, Ca.  
Gregory J. Ball, Brea, Ca.  
Joseph R. Glasmann, Brea, Ca.  
Wesley R. Hatch, Brea, Ca.  
Charles R. Lindsey, Brea, Ca.  
Frank F. Moore, Brea, Ca.  
Clementia K. Mushonga, Brea, Ca.  
Gloria C. Neill, Brea, Ca.  
Guy Pavey, Brea, Ca.  
Anna M. Romero, Brea, Ca.  
Marilyn K. Saldivar, Brea, Ca.  
Luis Sandoval, Brea, Ca.  
Sharon L. Savord, Brea, Ca.  
Ananthram Swami, Brea, Ca.  
Michael F. Tiernan, Brea, Ca.  
James L. Wood, Brea, Ca.  
Barbara Zuniga, Brea, Ca.

**ENERGY RESOURCES**

**NORTH AMERICAN OIL & GAS**

- 40 YEARS Buford E. Parrish, Midland, Tx.
- 35 YEARS Aline M. Broussard, Lafayette, La.  
C. Richard Hard, Oklahoma City, Ok.  
Robert Marquez, Houston, Tx.  
Eugene M. Myers, Lafayette, La.  
David K. Spradlin, Midland, Tx.  
John M. Tyler, Houston, Tx.  
Robert F. Watson, Lovelady, Tx.
- 30 YEARS Daniel J. Detraz, Kaplan, La.  
James R. Lemaire, Lafayette, La.
- 25 YEARS Michael L. Atmore, Ventura, Ca.  
Leslie C. Boyer, Seminole, Tx.  
Bobby G. Bryan, Midland, Tx.  
John R. Eisenbarth, Orcutt, Ca.  
Gordon L. Ferguson, Oklahoma City, Ok.  
W. J. Gelineau, Bakersfield, Ca.  
Glenn L. Hagemann, Brea, Ca.  
Ralph P. Richoux, Lafayette, La.  
Bobby L. Searcy, Oklahoma City, Ok.  
Clifford M. Tippins, Coalinga, Ca.
- 20 YEARS Bruce S. Alexander, Houston, Tx.  
Jerry L. Hatten, Kenai, Ak.  
Carl D. Helton, Kenai, Ak.  
Ronald Dean Hoover, Casper, Wyo.  
Tony R. Lopez, Piru, Ca.  
John T. Russell, Lafayette, La.  
Virginia A. Simons, Ventura, Ca.  
F. Harry Taylor, Chunchula, Al.
- 15 YEARS Walter T. Aakre, Casper, Wyo.  
Albert J. Allemand, Lafayette, La.  
Richard D. Andrews, Jr., Oklahoma City, Ok.  
Launa C. Armstrong, Van, Tx.  
Jeffery S. Attebery, Bakersfield, Ca.  
Hattie M. Aubrey, Houston, Tx.  
Earl D. Backus, Grayling, Mi.  
Belinda D. Bennett, Anchorage, Ak.  
Russell J. Bertrand, Houma, La.  
Rodney J. Boudreaux, Houma, La.  
Anthony J. Brajkovich, Houston, Tx.  
Larry C. Broussard, Bell City, La.  
Michael R. Cornyn, Lafayette, La.  
Allen W. Dorman, Kenai, Ak.  
Charles L. Ellison, Van, Tx.  
Harry Granger, Dulac, La.  
Ernest A. Henderson, Kenai, Ak.  
Walter C. Hollada, Jr., Brea, Ca.  
Robert L. Jenkins, Jr., Lafayette, La.  
Jerry L. King, Ardmore, La.  
Michael J. Langlinais, Abbeville, La.  
Leander J. Lavergne, Jr., Lafayette, La.  
Berne A. Life, Lafayette, La.  
Jimmy D. Mason, Snyder, Tx.  
Burl K. McKeel, Houston, Tx.  
Martin T. Morell, Lafayette, La.  
Steve A. Neuman, Cisse, Il.  
Alvin P. Richard, Lafayette, La.  
Mark A. Stephens, Ardmore, Ok.  
Loren W. Stock, Ventura, Ca.  
Harry O. Thomas, Jr., Healdton, Ok.

- 10 YEARS Oliver J. Amend, Kenai, Ak.  
Glenda P. Baker, Mobile, Al.  
Gloria M. Bellemeur, Midland, Tx.  
Robert S. Blackmore, Brea, Ca.  
Roger D. Boles, Coalinga, Ca.  
Randy T. Buck, Houston, Tx.  
Patricia M. Byerly, Houston, Tx.  
Ronald R. Carlton, Midland, Tx.  
Terry A. Cook, Midland, Tx.  
Neville R. Crowson, Houston, Tx.  
Robert L. Davis, Lafayette, La.  
Paul A. Delago, Kenai, Ak.  
Robert Espinoza, Taft, Ca.  
Hal D. Force, Kenai, Ak.  
Andrew N. French, Anchorage, Ak.  
Audrey Y. Ganz, Houston, Tx.  
John T. Gray, Midland, Tx.  
Timothy P. Guidry, Dulac, La.  
Victor M. Gurrola, Ventura, Ca.  
Olivette Hargraves, Houston, Tx.  
William F. Harris, Bakersfield, Ca.  
Francis L. Harrison, Houston, Tx.  
Sharon A. Hazel, Oklahoma City, Ok.  
Dennis K. Herrington, Lafayette, La.  
Roxanna L. Howard, Midland, Tx.  
Anna M. Hudspeth, Houston, Tx.  
Kent B. Hunter, Healdton, Ok.  
Gary R. James, Houston, Tx.  
Gordon R. Lacoste, Houma, La.  
Rene' P. Ledet, Lafayette, La.  
Lori D. Lindros, Houston, Tx.  
Diana J. Martin, Houston, Tx.  
David B. McLean, Madill, Ok.  
Monica L. Miller, Houston, Tx.  
Richard J. Morris, Lafayette, La.  
Norman B. Phelps, Houma, La.  
Ronald G. Ramsey, Coalinga, Ca.  
Bruce W. Rourks, Freeport, Tx.  
David A. Selby, Ventura, Ca.  
Kenneth R. Sides, Kenai, Ak.  
Hope R. Slaughter, Midland, Tx.  
Ethan A. Tanner, Anchorage, Ak.  
Benjamin F. Terry, Jr., Oklahoma City, Ok.  
Douglas M. Vert, Coalinga, Ca.  
Sara A. Wakelam, Oklahoma City, Ok.  
Gerald D. Ward, Lafayette, La.  
Kathleen A. Waugh, Orcutt, Ca.  
Lynne E. Woodruff, Anchorage, Ak.

**Unocal Canada, Ltd.**

- 25 YEARS Gerrit van Donselaar, Fort St. John, B.C.  
20 YEARS Helmut Verges, Calgary, Alberta  
15 YEARS Hart W. Schneider, Calgary, Alberta  
10 YEARS John D. Weber, Calgary, Alberta
- INTERNATIONAL OIL & GAS**
- 25 YEARS James Austin, Los Angeles, Ca.  
20 YEARS Thomas Albert, Bangkok, Thailand  
C. Frank Corbin, Sunbury, England  
15 YEARS Frank Bello, Los Angeles, Ca.  
Andrew Fawthrop, Los Angeles, Ca.  
Christopher Landeck, Balikpapan, Indonesia

# SERVICE AWARDS



10 YEARS Barry Carlson, Myanmar  
William Hobbs, Bangkok, Thailand  
Denis Horgan, Bangkok, Thailand  
Michael McCaskey, Los Angeles, Ca.  
Gerald Schuck, Bangkok, Thailand

Unocal Thailand, Ltd.

10 YEARS Çhan Gulsavate  
Araya Pinproyong  
Suppanit Ratanakarn  
Warinrat Suthipinitham  
Sattha Tephavit

Unocal Indonesia, Ltd.

20 YEARS Frans Hutagalung  
Lisa Rahardjo  
Tatang Suriadi  
Wahidin Wisaksono

15 YEARS Muballaga  
Rochmad  
Siswadi  
Sukarmin  
Sukir  
Berty Aguw  
M Hasan  
Adrian Lontaan  
Ekie Lumingkewas  
Otto Maramis  
Rinawati S. Martono  
Leopold Matheos  
Bambang Prasodjo  
Sulaiman R.  
Bambang Irawan Rivai  
John N. Runtuwarouw  
Heroe A Soeranto  
Lintong Tobing

10 YEARS Haryong  
Koestini Handayani  
Nuzurman Nasution  
Bambang Sutjahyo  
Sugeng Suwignyo  
Soewery Syoekri  
M Taufiq Yunus

Unocal U.K., Ltd.

15 YEARS Susan Woof, Sunbury

10 YEARS Shirley Mathers, Aberdeen  
Kendall A. Wilkes, Sunbury

Unocal Singapore, Ltd.

15 YEARS Faridah bte Md Taha

10 YEARS Jumat bin Hassim  
Ramlan bin Ismail

Unocal Netherlands, B.V.

10 YEARS Reitsma N. Tj. F.

GEOTHERMAL

25 YEARS Mary D. Padron, Los Angeles, Ca.

20 YEARS Larry R. Cadd, Santa Rosa, Ca.

15 YEARS Sandra L. Austin, Imperial Valley, Ca.  
Benjamin J. Barker, Santa Rosa, Ca.  
Joseph P. Bowen, Indonesia  
Vivienne L. Rochioli, Santa Rosa, Ca.  
Carlisle A. Sagon, Santa Rosa, Ca.

10 YEARS Michael A. Bryan, Imperial Valley, Ca.  
Thomas R. Haas, Santa Rosa, Ca.  
Brian A. Koenig, Santa Rosa, Ca.  
Terry P. Mahoney, Santa Rosa, Ca.  
John J. Maney, Santa Rosa, Ca.  
Lynn L. Monnier, Imperial Valley, Ca.  
Larry E. Murray, Santa Rosa, Ca.  
James E. Sullivan, Imperial Valley, Ca.  
John L. Walters, Santa Rosa, Ca.

Philippine Geothermal, Inc.

15 YEARS Milagros B. Canlas, Makati  
Ofelia E. Garcia, Makati  
Benito G. Gatmaitan, Makati  
Editha G. Labaro, Makati  
Leonardo Delos Reyes, Makati

10 YEARS Eleuterio L. Imperial, Bulalo

REFINING & MARKETING

40 YEARS Harry E. Kenny, Charlotte, N.C.  
Frank S. Moranda, Schaumburg, Il.  
Aaron M. Palmer, Los Angeles Refinery

35 YEARS L. A. Anderson, San Francisco, Ca.  
T. D. Esse, Colton, Ca.  
Denny W. Evans, San Francisco, Ca.  
Eddie J. Girado, Richmond, Ca.  
Charles T. Kumle, Schaumburg, Il.  
James F. Lacey, Birmingham, Al.  
Gary C. O'Connell, Los Angeles, Ca.

30 YEARS Jerry N. Davis, Birmingham, Al.  
Christine A. Hodge, San Francisco, Ca.  
Gerald A. Lyons, Schaumburg, Il.  
Y. Matsuyoshi, Honolulu, Hi.  
Doyle L. Moseley, Andrews, Tx.  
Ludy D. Reyes, San Francisco, Ca.  
Nick Smernes, Richmond, Ca.  
Richard M. Sullivan, Sacramento, Ca.  
Einar M. Westly, Portland, Or.

25 YEARS William Brent, Los Angeles, Ca.  
Johnny Castillo, Los Angeles, Ca.  
Gary L. Conklin, San Francisco Refinery  
James A. Deshotels, Abbeville, La.  
Barry L. Dobler, Bloomington, Ca.  
William R. Emerick, Richmond, Ca.  
Robert W. Fisher, Eugene, Or.  
Ronald J. Fontenot, San Francisco Refinery  
Randall B. Gibson, Cypress, Ca.  
William R. Kinsey, Nederland, Tx.  
George J. Markan, Bloomington, Ca.  
Augusta D. Mueller, Schaumburg, Il.  
Gregory L. Powers, Los Angeles, Ca.  
Charles R. Schiavi, Schaumburg, Il.  
Albert Schioppi, North Hollywood, Ca.  
Anthony L. Stefan, San Francisco Refinery  
Jack E. Thorpe, San Francisco Refinery  
Juliet Voskian, Los Angeles, Ca.

20 YEARS Fred C. Acuesta, Los Angeles Refinery  
J. C. Blackmon, Los Angeles Refinery  
Melvin Blue, Los Angeles Refinery  
Peter Cantu, San Francisco Refinery  
Jean Chisnell, City of Industry, Ca.  
Avelina G. Conde, San Francisco, Ca.  
Patrick J. Davis, Monticello, Il.  
Clemencia Y. Dehesa, San Francisco, Ca.  
Billy G. Gold, Houma, La.  
Oscar N. Gozar, San Francisco Refinery  
Carol B. Illg, Los Angeles, Ca.  
Terry J. Leboeuf, Houma, La.  
Frank Lopez, Los Angeles Refinery  
Martin W. Nicholson, Coos Bay, Or.  
Mary S. Paulini, Schaumburg, Il.  
Constance Perez, City of Industry, Ca.  
James M. Potter, Bloomington, Ca.  
Larry J. Remboldt, Richmond, Ca.  
Pete C. Serrano, San Francisco Refinery  
John L. Smith, San Francisco Refinery  
Eugene Stockton, San Francisco Refinery  
Martha L. Svitak, Pasadena, Ca.  
James M. Tyson, Los Angeles, Ca.

Ronald S. Willett, Los Angeles, Ca.  
Joel J. Witte, Los Angeles, Ca.  
Jeffrey Wong, San Francisco Refinery  
W. Duane Wyrick, Fresno, Ca.

15 YEARS Gary R. Balzhiser, Los Angeles, Ca.  
John R. Barron, Richmond, Ca.  
Ruskin A. Battersby, Los Angeles Refinery  
Jerr A. Bell, Los Angeles Refinery  
Gerald C. Berggren, San Francisco Refinery  
Barbara M. Castleberry, Atlanta, Ga.  
Darrell R. Davis, Los Angeles Refinery  
Robert P. Ficks, Schaumburg, Il.  
Clarence J. Galler, Nederland, Tx.  
Lily U. Kaneshiro, Honolulu, Hi.  
James M. Keating, Schaumburg, Il.  
Donald E. Lehman, San Diego, Ca.  
Paul E. Martin, San Francisco Refinery  
Robert P. McAllister, Tacoma, Wa.  
Thomas J. Miller, San Francisco Refinery  
Barbara J. Mise, San Ramon, Ca.  
Mildred P. Moores, Los Angeles Refinery  
Patricia A. Mrazek, Schaumburg, Il.  
Glen A. Pericoli, San Francisco Refinery  
Arlan J. Potter, San Francisco Refinery  
Barbara C. Puckett, San Francisco, Ca.  
Gregory J. Schaeffer, Pasadena, Ca.  
Anton N. Schilpp, San Diego, Ca.  
Joseph A. Sequeira, Los Angeles Refinery  
Ruth A. Summers, Schaumburg, Il.  
Alfonso Valdez, Los Angeles Refinery  
Michael A. Whitmore, Los Angeles, Ca.  
Larry B. Zumbro, Los Angeles Refinery

10 YEARS Gregory A. Abe, Los Angeles Refinery  
William S. Arellano, Santa Maria Refinery  
Patrick A. Armstrong, San Luis Obispo, Ca.  
Linda G. Ayers, Nederland, Tx.  
Genora Basham, Los Angeles, Ca.  
Mark E. Bell, Los Angeles Refinery  
Andrew C. Bennett, Anaheim, Ca.  
Florina W. Berry, Pasadena, Ca.  
Peter Breitenstein, Los Angeles Refinery  
Michael A. Cagnina, Richmond, Ca.  
Gustavo F. Castro, Los Angeles Refinery  
James L. Craig, Santa Paula, Ca.  
Arthur Delafuente, Ft. Morgan, Co.  
Marvin W. Eskew, Birmingham, Al.  
Matthew J. Fischer, San Ramon, Ca.  
Noel P. Gallego, Bloomington, Ca.  
Richard D. Griffith, Santa Paula, Ca.  
John W. Hancock, Avenal, Ca.  
Mary A. Hansen, Los Angeles Refinery  
Glen M. Harris, Los Angeles Refinery  
Vincent Herrera, Santa Maria Refinery  
Daniel R. Holliday, Taft, Ca.  
Michael L. Holmes, Los Angeles Refinery  
Richard D. Hudson, San Francisco Refinery  
Carl Jamerson, San Francisco Refinery  
Miles B. Kajioka, Santa Fe Springs, Ca.  
Mark L. Koenig, Los Angeles Refinery  
James M. Kulakowski, Los Angeles, Ca.  
Michael Lawrence, Los Angeles Refinery  
William L. Lewiston, Los Angeles Refinery  
Johnny D. Lynn, Los Angeles Refinery  
Ronald R. MacDonald, Los Angeles, Ca.  
Robert M. McLeod, Savannah, Ga.  
Julie R. Parry, City of Industry, Ca.  
Richard M. Peterson, Los Angeles, Ca.  
Dennis R. Polaski, Schaumburg, Il.  
Roy Ramirez, San Francisco Refinery  
Ron T. Sakamoto, Honolulu, Hi.  
Marlene St. Charles, Portland, Or.  
Robert T. Sandoval, San Francisco Refinery  
William J. Schmit, Los Angeles, Ca.  
Sergio G. Schonfeld, Santa Maria Refinery  
Paul D. Spillis, San Francisco Refinery  
Todd M. Wilhite, San Francisco Refinery



**MARKETERS & DISTRIBUTORS**

- 50 YEARS Jack Russell Oil Co., Clearwater, Fl.  
 45 YEARS Stocks Oil Co., Snow Hill, N.C.  
 40 YEARS Carpenter Oil Co., Newark, Oh.  
 35 YEARS Bagwell Oil Co., Inc., Onancock, Va.  
 Couch Oil Co. of Durham, Inc., Durham, N.C.  
 30 YEARS D & R Distributors, Inc., Kingwood, W.V.  
 NEB King, Inc., Roxboro, N.C.  
 20 YEARS Maury River Oil Co., Inc.  
 15 YEARS Cougar Oil Inc., Selma, Al.  
 Swatek Sales Corp., Lake Geneva, Wi.  
 10 YEARS Luke Oil Co., Hobart, In.  
 Nicholaw Oil Co., Inc., Canton, Ga.

**CHEMICALS & MINERALS**

- 35 YEARS Lupe Adame, Arroyo Grande, Ca.  
 30 YEARS Russell C. Reinking, Brea, Ca.  
 25 YEARS Alfred C. Brown, Brea, Ca.  
 Paul D. Lundblad, Tucker, Ga.  
 Larry R. Pittman, Wilmington, N.C.  
 Ken R. Rose, Charlotte, N.C.  
 Howell M. Williams, Brea, Ca.  
 20 YEARS Harold G. Bloodworth, Kenai, Ak.  
 Robert Boughton, Lemont, Il.  
 Paul F. Buchik, Schaumburg, Il.  
 Rosemary Burbridge, Clark, N.J.  
 Donald R. Day, Kenai, Ak.  
 Maria G. Forster, Los Angeles, Ca.  
 William M. Kendall, Charlotte, N.C.  
 Kenneth P. May, Kenai, Ak.  
 Douglas A. Olson, Kenai, Ak.  
 Gerard G. Swayze, Carteret, N.J.  
 15 YEARS Christopher D. Arciniega, Brea, Ca.  
 Edwin L. Burcham, Kenai, Ak.  
 Ernest J. Carrick, Brea, Ca.  
 Mott B. Covington, Charlotte, N.C.  
 Severina Divinagracia, Newark, N.J.  
 Lawrence M. Linderman, Kenai, Ak.  
 Gary L. Poindexter, Kenai, Ak.  
 Steven W. Rector, Portland, Or.  
 Victor Sieux, Newark, N.J.  
 Monte B. Smith, Kenai, Ak.  
 Anthony L. Soares, Arroyo Grande, Ca.  
 Arthur R. Valencia, Brea, Ca.  
 Roaul A. Yates, Charlotte, N.C.  
 10 YEARS Gary L. Auldridge, Kenai, Ak.  
 Daniel W. Baker, Sacramento, Ca.  
 David P. Corder, Brea, Ca.  
 Robert Darouze, Newark, N.J.  
 Donald E. Edwards, West Sacramento, Ca.  
 James Freson, Middletown, Oh.  
 Joseph E. Gover, Sacramento, Ca.  
 Irene S. Gutierrez, Los Angeles, Ca.  
 Edward F. Hader, West Sacramento, Ca.  
 Robert L. Hinrichs, Schaumburg, Il.  
 Michael J. Johnson, Kenai, Ak.  
 Stephen G. Klaas, West Sacramento, Ca.  
 Stephen R. Lint, West Sacramento, Ca.  
 Richard A. Moreno, Brea, Ca.  
 Dennis Muhlbach, Fullerton, Ca.  
 Glenn M. Oxford, Portland, Or.  
 Lewis L. Rich, Kenai, Ak.  
 Craig A. Rosenow, Kankakee, Il.  
 Christopher Schemanski, Kenai, Ak.  
 Phyllis Shoemaker, Schaumburg, Il.  
 Curtis R. Swan, Kenai, Ak.  
 Alan R. Thye, Kenai, Ak.

**MOLYCORP, INC.**

- 40 YEARS Roy W. Reily, York, Pa.  
 30 YEARS William R. Hewitt, Washington, Pa.  
 Paul E. Hickman, Washington, Pa.  
 John F. Penn, Washington, Pa.  
 John A. Pettit, Washington, Pa.  
 25 YEARS L. Miller Arnold, Louviers, Co.  
 Uvaldo Sandoval, Questa, N.M.  
 15 YEARS Lawrence G. Dykers, Los Angeles, Ca.  
 Bradley E. Knaub, York, Pa.  
 10 YEARS Ernest M. Canepa, Mountain Pass, Ca.  
 Felipe T. Delgado, Louviers, Co.  
 Carl J. Lama, Jr., Washington, Pa.  
 Terry W. Pepper, Louviers, Co.

**POCO GRAPHITE, INC.**

- 10 YEARS Frontis T. Frick, Decatur, Tx.  
 James L. Radford, Decatur, Tx.

**RETIREMENTS****Corporate**

- Edwin H. East, May 1, 1956  
 Herbert Harry, November 7, 1949  
 Betty J. Johnson, January 27, 1958

**Refining & Marketing**

- Earl J. Blanchard, July 24, 1972  
 Phyllis D. Cross, April 1, 1959  
 Robert F. Foushee, Jr., November 10, 1950  
 Robert B. McDonald, September 9, 1958  
 Daniel Piro, April 26, 1956  
 Mary J. Shewchuck, April 7, 1958  
 Charles C. Wallace, August 14, 1973

**Science & Technology**

- Judith C. Ware, September 20, 1976

**Energy Mining**

- Fern P. Grant, November 3, 1986  
 Dale C. Mooney, July 7, 1955

**Chemicals & Minerals**

- Luis M. Barreto, February 1, 1968  
 Albert M. Savage, May 22, 1962

**IN MEMORIAM****EMPLOYEES****Refining & Marketing**

- Terry W. Snider, October 11, 1991

**Chemicals & Minerals**

- Ronnie A. Sweeten, October 4, 1991

**RETIRES****Corporate**

- Myrtle Bybee, September 13, 1991  
 Richard W. Dodds, September 10, 1991  
 Charles C. Wheeler, November 11, 1991

**Oil & Gas**

- Stanton M. Billings, November 19, 1991  
 Dale Robert Cox, November 7, 1991  
 Henry B. Eubank, October 13, 1991  
 Huey C. Green, September 30, 1991  
 J. B. Jarman, October 25, 1991  
 Otis Johnson, October 18, 1991  
 Robert J. Levine, September 24, 1991  
 Lawren C. Magee, September 6, 1991  
 Edward E. Mathews, October 4, 1991  
 Percy D. Mitchell, October 17, 1991  
 Roger Earl Rabe, October 29, 1991  
 Lawrence Rayburn, Sr., October 28, 1991  
 Fred C. Smith, October 5, 1991  
 Jessie G. Taylor, September 23, 1991  
 Patricia Wehl, October 18, 1991

**SERVICE AWARDS****Refining & Marketing**

- Raymond L. Bucholz, September 30, 1991  
 Romeo J. Caligri, September 25, 1991  
 Floyd W. Carroll, November 1, 1991  
 Walter B. Cornett, September 26, 1991  
 Alfred S. Crawford, October 16, 1991  
 Harold Crawford, October 28, 1991  
 James W. Gibson, September 16, 1991  
 Howard J. Gundy, September 16, 1991  
 Mamoru W. Hamachi, September 7, 1991  
 O. J. Hille, October 11, 1991  
 Richard D. Hoback, September 4, 1991  
 Rose B. Kells, September 30, 1991  
 William C. Kennedy, September 26, 1991  
 James R. McGlaughlin, October 30, 1991  
 Daniel McGoldrick, October 23, 1991  
 Dan McInnis, Jr., October 4, 1991  
 Frank G. Mewborn, October 20, 1991  
 Veronica C. Midlo, September 11, 1991  
 Roy Molkenkine, October 22, 1991  
 Frank S. Molnar, October 28, 1991  
 Clifford Nenno, October 28, 1991  
 Joseph M. Peterson, September 3, 1991  
 Walter Pollard, October 25, 1991  
 Alene Stirling, September 15, 1991  
 Hardy H. Smith, October 24, 1991  
 Harold J. Smith, September 15, 1991  
 Robert M. Thompson, October 4, 1991  
 Daniel Vogelbacher, October 6, 1991  
 Ruth Wilder, September 14, 1991  
 John Wesley Woolworth, October 6, 1991  
 Charles H. Workman, October 19, 1991  
 Norman E. Zimmerman, September 22, 1991

**Chemicals & Minerals**

- George J. Goger, September 24, 1991  
 Chuck McClure, October 3, 1991

GARY L FOY  
16823 LIGGETT STREET  
SEPULVEDA CA 91343

P

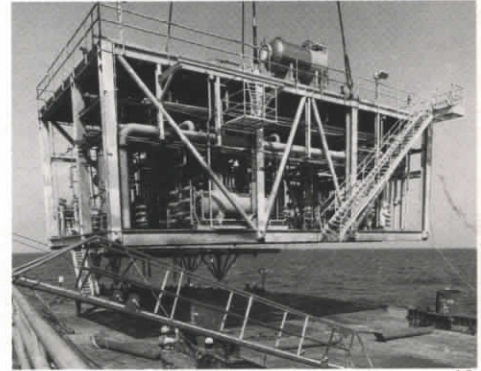
## CONTENTS



2



12



18

**In Brief...** Page 1  
A review of Unocal's recent acquisitions, special events and other noteworthy news items.

**Manning The Front Lines** Page 2  
Unocal was the first major company in nearly a decade to negotiate and sign an oil exploration contract with the African nation of Senegal. Here's the story of how this came about—and what happens next.

**Laying A Foundation For Success** Page 9  
A conversation with Ousmane Ndiaye, director and general manager of Petrosen, Senegal's state-owned oil company.

**Just One Of The Neighbors** Page 10  
In an oil patch called Los Angeles, Unocal has long demonstrated that petroleum production can coexist with ongoing urban development.

**Reorganized, Refocused And Ready To Roll** Page 12  
A look at Unocal's marketing operations and a discussion with Fielding Walker, vice president of Marketing, about prospects for the future.

**Serving Double Duty** Page 18  
Unocal platforms offshore Louisiana support more than natural gas and oil production. In fact, certain company platforms have become mainstays in the survival strategies of both air-borne and marine-based wildlife.

**On The Job** Page 22  
Barbara Ehrick, a research technician with Unocal's Science & Technology Division, details her role in helping to make the company more efficient and profitable.

**Service Awards** Page 23

**Cover:** The morning sun rises on Unocal's time-honored "76" marketing symbol. During the past year, the company has instituted new strategies designed to help Unocal, its service station dealers and independent distributors adapt to fundamental changes in the refined petroleum products market. Story on Page 12.

*Seventy Six* is published by the Corporate Communications Department, Unocal Corporation, Box 7600, Los Angeles, California 90051. **Karen Sikkema**, Vice President, Corporate Communications; **Mike Broadhurst**, Editor; **Valerian Anderson**, Assistant Editor; **Ray Engle and Associates**, Art Directors.

*Tim Smight, former Editor of Seventy Six, has been promoted to the position of Senior Writer, Corporate Communications. Concurrently, former Assistant Editor Mike Broadhurst was appointed Editor of Seventy Six, and former Editorial Assistant Valerian Anderson was named Assistant Editor.*

# Seventy Six

VOL. LXXI  
NUMBER 1  
Winter 1992

*Use of the name "Unocal" in Seventy Six may refer to either "Unocal Corporation" (a Delaware corporation) or "Union Oil Company of California" (its wholly owned subsidiary) or, at times, to subsidiaries of either of these companies.*